



## **SEWER MAINTENANCE:**

BES and PBOT maintain the system together,  
but should consider operational changes

December 2010

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City Auditor

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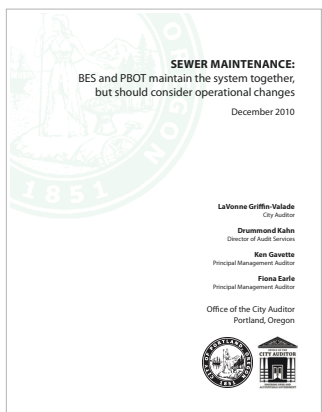
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# CITY OF PORTLAND

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December 16, 2010

TO: Mayor Sam Adams  
Commissioner Nick Fish  
Commissioner Amanda Fritz  
Commissioner Randy Leonard  
Commissioner Dan Saltzman  
Dean Marriott, Director, Bureau of Environmental Services  
Susan Keil, Director, Portland Bureau of Transportation

SUBJECT: Audit Report – *Sewer Maintenance: BES and PBOT maintain the system together, but should consider operational changes* (Report #365)

We have completed an audit of the \$19 million agreement between BES and PBOT in which sewer maintenance services are provided by PBOT employees. This agreement has been in place for many years, and for the most part, both parties are satisfied with the results of the maintenance program. However, our review shows that BES may be able to provide the same services for about \$1.7 million less than PBOT. This is mainly because of the interagency overhead rate that PBOT charges for work done on behalf of other City bureaus.

We found it is possible that some savings could be passed along to BES ratepayers. Our review also found that changing such a large cooperative agreement could have unintended negative consequences in operational areas such as snow and ice removal. Potential negative factors cannot be fully considered until each bureau takes a more detailed look at various options.

Our report presents a complex and possibly difficult policy decision for BES, PBOT, and ultimately City Council, as evidenced by the response letters included with this report. The issues raised in those responses illustrate the complicated operational issues that need to be considered.

We recommend the two involved bureaus study the model we developed during this audit and prepare a coordinated, detailed proposal to make appropriate changes to the agreement. As noted in the report, actual cost reductions will depend on how any changes are implemented, and any proposed changes should factor in non-financial impacts.

We appreciate the assistance and cooperation we received throughout the audit. We want to particularly thank those staff from each bureau who contributed their time and expertise to the financial analysis portion of our work.

LaVonne Griffin-Valade  
City Auditor

Audit Team: Drummond Kahn  
Ken Gavette  
Fiona Earle

Attachment



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## **SEWER MAINTENANCE:**

BES and PBOT maintain the system together,  
but should consider operational changes

**Summary** The Bureau of Environmental Services (BES) is responsible for maintaining the City's sanitary sewer and stormwater collection infrastructure. This primarily consists of maintaining an aging system of pipes that covers about 2,300 miles. BES has an agreement with the Portland Bureau of Transportation's (PBOT) Maintenance Operations to provide the bulk of pipe inspection, cleaning and repair. BES pays about \$19 million annually to PBOT for this work.

We examined the possibility of moving these maintenance services from PBOT to BES and ending or substantially modifying the agreement. We found that the estimated direct cost to provide sewer maintenance is about the same whether BES or PBOT does it. This is because whether BES or PBOT provide the service, the same staff and equipment would likely be used to perform the work.

However, we estimate that if the agreement ended, BES could likely provide the same service for \$1.7 million less in the first year if the agreement is ended. This is primarily because PBOT adds an approved indirect rate charge of 65.88 percent on top of the labor costs.

The five year financial analysis model we developed shows a potential cost reduction to BES of about a million dollars in each of the following four years. Since BES is primarily funded by utility ratepayers, lower costs could be passed along in the form of lower rates.

PBOT would have to find new sources of revenue or reduce costs to make up for the revenue lost by ending the agreement. PBOT would be left with about \$2.5 million in support expenses that are now funded by the BES agreement.

Financial considerations alone may not be a conclusive reason to end the agreement. Operational considerations may be just as important as the financial ones. For example, crews and shared equipment under PBOT's management (and the current agreement) may mean quicker response to emergencies, such as flooding or snow and ice removal. There will also likely be unknown risks and costs associated with ending an otherwise functional agreement.

We recommend the Commissioners in charge of the respective bureaus instruct the Directors of PBOT and BES to develop a coordinated proposal to either end the agreement or continue it. There is sufficient evidence of potential cost reductions to BES to warrant further study of the operational costs and benefits involved in ending the agreement. The proposal should build on the financial assumptions presented in this report, and weigh the potential cost reductions to ratepayers against the financial impact on PBOT, as well as any potential service delivery risks.

## **Background**

The Bureau of Environmental Services' (BES) mission is to protect public health, water quality and the environment by providing sewer and stormwater treatment and conducting activities that promote healthy ecosystems in the city's watersheds.

BES is one of the City's largest bureaus, with an FY 2010-11 budget of over \$328 million and an authorized staffing total of 546. About two-thirds of the BES budget is dedicated to capital expenditures, with almost half of these capital expenditures going to a single project, the effort to control combined sewer overflows (CSOs) into the Willamette River. BES, through its CSO program, is adding new infrastructure such as large pipes, treatment plant expansion, and a new pump station.

### **Maintaining the sewer system is challenging and expensive**

While BES addresses sewer overflows into major waterways by constructing new infrastructure, the Bureau must continue to meet the challenge of maintaining and improving the City's existing, aging sewer and stormwater collection system. In this report we will refer to the sewer and stormwater collection system generally as the sewer system.

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In addition to combined sewer overflows, which generally occur in wet weather, other overflows and backups occur even during dry weather. These are usually the result of root or grease blockages, or failures in the pipe system. They sometimes lead to spills into a public waterway, street or building basement. Since this represents a threat to public health, failing infrastructure and overflows are a primary concern of BES. The Bureau spends over \$20 million each year to perform routine preventive maintenance and make emergency repairs to the system.

The sewer system represents a major asset to the City. According to the last City-wide Assets Report, the system, not including the two wastewater treatment plants, has a replacement value of about \$4.4 billion. BES also has an estimated annual sewer system funding gap of \$22 million. The funding gap is the amount needed to eliminate a maintenance backlog and maintain an asset to achieve its expected useful life.

There are 2,323 miles of sewer and stormwater collection system pipes and related facilities that must be maintained and periodically repaired. The problem is worsened by the age of the collection system infrastructure. About 30 percent of the pipes are over 80 years old. In addition, funding for needed preventive maintenance must compete with other Bureau priorities.

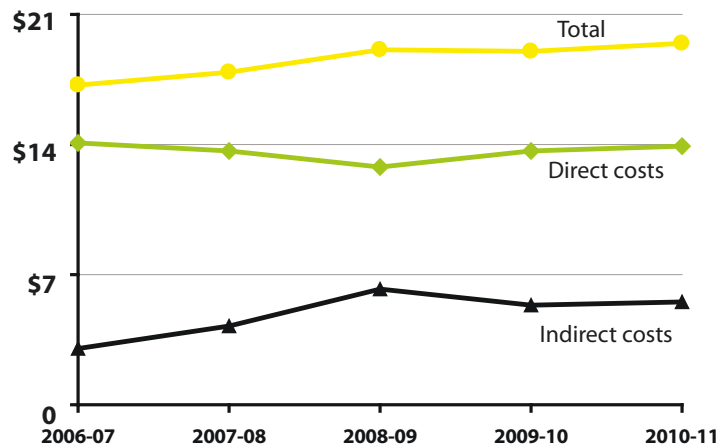
Preventing overflows is a major concern for BES. Each year, City and private crews inspect and clean pipes to prevent these problems. In FY 2010, 236 miles of pipe were inspected, 243 miles were cleaned and 18 miles were repaired. Pipe inspections are done using closed-circuit television cameras lowered into the pipes. Problem areas are logged and scheduled for repair. In addition, BES has implemented an Asset Management System aimed at systematically identifying problem areas and ranking them by priority for repair work. The Asset Management System enables maintenance crews to target areas needing the most attention.

From 2006 through 2009, 388 overflow events were reported. Many were backups into basements caused by capacity issues, sewer line breaks, and blocked collection pipes.

**BES and PBOT work together to maintain the sewer collection system**

Since the mid-1980's BES has partnered with PBOT in an interagency agreement (the "agreement") to perform most of the duties associated with preventive maintenance activities and emergency response. PBOT has a staff of 127 to perform this work. BES also employs a staff of 15 to work on sewer maintenance, primarily to perform engineering and oversight services. In addition, private contractors are sometimes hired by BES to do cleaning and inspection work. Figure 1 shows trends in the value of the agreement. It also illustrates changes in the direct costs and indirect charges. The PBOT indirect charge is based on a rate calculated using the City's cost recovery policy.

**Figure 1 Trends in interagency agreement value**  
(millions, adjusted for inflation)



Source: BES/PBOT interagency agreements

In FY 2009-10, the agreement called for PBOT to clean 894,000 linear feet of sewer pipe and to inspect 769,000 linear feet of pipe. The last detailed agreement calls for PBOT to respond to customer service calls within one hour, and provide timely restoration of sewer or wastewater collection service to customers.

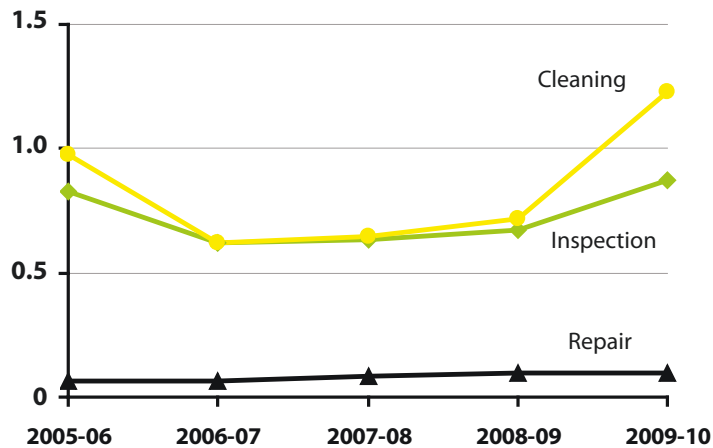


### How the work is carried out

It is BES' responsibility to provide sewage and stormwater collection and treatment services. In general, the responsibility for video inspection and smaller sewer line repairs belongs to crews from PBOT's Environmental Systems Division (ESD) under the agreement with BES. BES does contract out some work each year to private contractors.

ESD planners and schedulers develop inspection schedules for ESD staff to follow. They prepare maps each week for ESD inspection staff with the intention of covering the entire City about every 12 years. Most inspection work is done by ESD staff using closed circuit television cameras that travel down pipes and record conditions. BES engineering staff review video inspections to identify sewer line defects. Depending on the urgency of the needed repair, ESD crews may be dispatched to dig up the pipe and make the repairs, or if a complete pipe replacement is required the repair could be placed on BES' Capital Improvement list.

**Figure 2 Feet of pipe inspected, cleaned and repaired by PBOT-ESD crews (millions)**



Source: BES Wastewater Group

BES owns the equipment used for sewer maintenance and is responsible for vehicle replacement on a scheduled basis. PBOT is responsible for coordinating the maintenance and repair of equipment. The vehicles are branded with PBOT logos. PBOT sometimes uses BES' equipment in emergencies for snow and ice removal, but BES bears the depreciation cost of these assets.

**Why we undertook this review**

We undertook this review because of the size of the interagency agreement and the need for BES to find ways to reduce costs and increase efficiency to keep utility rate increases to the minimum needed to accomplish their mission. The two bureaus have considered the possibility of what might happen if BES discontinued its partnership with PBOT and performed the sewer maintenance work in-house. The discussion rose to the highest levels of City government.

In considering whether to end or substantially modify this agreement, the two bureaus considered operational issues and financial implications, although not in detail. We were informed that staff from both bureaus had conducted an analysis of shared overhead costs and had agreed that if the agreement were to be terminated, PBOT could be left with as much as \$735,000 per year of overhead costs which are now paid by BES. We felt additional study was needed to make a sound management decision. This is why we undertook to create a more detailed model; one which more closely estimates the financial impact of ending the current agreement.

**Objective, scope and methodology**

The objective of our audit was to compare the cost of providing sewer inspection, maintenance, and repair services if the service is provided by BES, or under the current agreement with PBOT.

To gain a general understanding of BES and sewer maintenance activities, we collected and reviewed relevant Bureau documents including the Bureau's budget, strategic planning documents, annual reports from many of the Bureau's major operating groups, and technical reports on the operation of wastewater treatment collection and processing facilities. We interviewed senior staff from each of BES' major operating groups, and representatives from several envi-

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ronmental groups. We observed various collection system repair sites where ESD crews were conducting pipe inspections and repair work.

We used a financial analysis model to compare the cost of providing the sewer maintenance service. In order to construct our financial analysis model, we reviewed cost-comparison literature, and shared many iterations and estimated costs with BES and PBOT management to confirm that we had included all relevant costs and to obtain agreement with the assumptions.

Our analysis consisted of two basic steps. First, we calculated and compared the estimated cost of PBOT providing sewer maintenance service for a five year period, versus BES providing the service. We determined that the two bureaus were roughly equal in their direct service delivery costs.

Second, we conducted an analysis of all costs, including indirect and overhead charges, which could be affected by ending the agreement. We compared the cost to BES of sewer maintenance under the current arrangement with PBOT to the costs estimated in our model for one year, if BES provides the service. We determined that this could have a significant impact on both bureaus.

We conducted this 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 objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

## **Audit Results**

### **The financial model and conclusions**

Because of the size of the agreement, a decision to end the existing arrangement could have significant financial consequences. This has been recognized by both bureaus.

We constructed a comparative financial model to provide information for decision-makers about the cost implications for ending the current agreement. This model was developed and adjusted over the

course of several months by Audit Services staff, using information and frequent feedback from management and staff from both bureaus, and from the Office of Management & Finance (OMF).

**Model cannot predict full cost of service**

Although the model takes into account many detailed aspects of the current arrangement, no model could completely ensure there would be no surprises if the arrangement were to end. We included many assumptions suggested by BES and PBOT and attempted to make the model as realistic as possible. We built the estimated cost of the sewer maintenance covered by the agreement from the bottom up to reflect all the costs to the City that we could identify and allocate to this service. Our model includes Environmental Systems Division's (ESD) estimated share of general fund overhead (GFOH) and of PBOT's interagency costs for services from other City bureaus. The model does not include ESD's share of either bureau's Director's office.

We compared the ongoing estimated cost to deliver the sewer maintenance service under the current arrangement to the estimated cost of BES providing the service. We do not refer to any reduction in cost resulting from a change in the agreement as a savings, but rather as an estimated difference in the cost to deliver the service in our model. Actual savings to the City are difficult to determine because there are certain costs, especially overhead costs that are now incurred which may continue to be incurred, even though they may not be allocated to sewer maintenance if the agreement ends.

For example, the cost of some of the support staff in PBOT who now perform work for ESD on a part-time basis has been excluded from the model option in which BES takes over the service. As a practical matter, that work would transfer to BES staff who will either be hired new, or to existing staff who would absorb the work into their existing workload. The City would continue to bear the cost of PBOT's existing support staff unless PBOT reduces their work hours and pay.

These staffing decisions can only be made with certainty by each bureau if the Council chooses to proceed with changing the agreement. If a change in the provision of sewer maintenance occurs then these staffing and management decisions could have a significant effect on the overall cost to the City for this new maintenance service.

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### **Model includes many assumptions**

The major assumptions used in the model are as follows:

- The customer call handling function for complaints about sewer problems would remain with PBOT. BES would pay PBOT 35 percent of the cost (approximately \$455,000 plus inflation) for this service in the model's year one, FY 2010-11. BES's 35 percent contribution reflects the share of customer calls about sewers.
- BES would continue to pay PBOT approximately \$1 million for street cleaning materials, based on a continuation of BES' payments under the agreement in prior years.
- The level of target services for the other services (levels of linear feet cleaned/repaired/inspected, number of sumps, etc) would remain the same as the FY 2009-10 agreement levels, even if BES manages these services directly.
- BES would take over the employment of all the PBOT direct staff in ESD. This is 123 full time equivalent (FTE) positions plus four FTE for management and administrative staff.
- PBOT support staff who currently support ESD (7.43 FTE) would not transfer to BES with ESD. BES would continue to use and pay for a reduced amount of PBOT support staff (2.35 FTE) for ESD.
- BES would absorb the remaining support of ESD within existing BES support staff if BES manages the sewer maintenance directly, as well as hiring 1.5 FTE of new staff to support ESD at a cost of about \$133,000 in year one.
- We accepted BES' estimates of the number of support staff needed to implement this service.
- If the agreement ends, ESD would use BES' asset and work management system only, instead of using both PBOT's and BES' systems.
- ESD would remain at PBOT's Kerby Avenue facility under BES management and BES would pay rent to PBOT for use of this facility.

**Model results suggest reduced costs to BES by ending agreement, but costs remaining with PBOT could be significant**

Our final financial model suggests that neither bureau brings a decided advantage to the City overall in the cost of delivering the direct services provided under the maintenance agreement. In fact, we believe the direct costs of inspection, cleaning, repair and scheduling are roughly the same whether PBOT or BES provides the service. This is primarily because both bureaus have agreed to use the same personnel and equipment to do the job.

While our model shows that neither bureau has a decided cost advantage in providing the sewer maintenance service directly, ending the agreement would have a significant impact on the funding for each bureau.

The biggest change has to do with the way indirect charges would be handled. The present \$19.5 million interagency agreement includes about \$5.6 million to cover some of PBOT's indirect costs such as central administration, payroll, printing, mail distribution and facilities. This \$5.6 million in indirect charges is the result of applying a 65.88 percent rate to labor costs. That rate was calculated by the City's Office of Management and Finance (OMF) under a City Council approved cost recovery policy.

If the agreement is discontinued, BES will not pay this charge to PBOT, but it will have to pick up some of these indirect costs that are currently charged to PBOT. For example, BES will have new costs associated with ESD's share of insurance and claims, worker's compensation, printing and distribution, the City's financial and payroll system, and increased general fund overhead totaling about \$1.3 million. In addition, we assume that BES would continue to pay PBOT for certain sewer maintenance related services totaling about \$2.1 million, including pavement patching, customer service, and facilities rent.

We estimate BES' cost to provide the service would be about \$20 million. Currently, it costs BES a total of \$21.8 million for the service. This represents a potential reduction in costs of \$1.7 million to BES in the first year (see Figure 3). Our five year financial model estimates cost reductions of about \$1 million annually for the subsequent four years. Since BES is primarily funded by utility ratepayers, lower costs could be passed along in the form of lower rates.

**Figure 3 Cost to BES for sewer maintenance service (FY 2010-11)<sup>1</sup>**

<b>BES' current cost (millions)</b>		
Interagency Agreement paid to PBOT for providing service	\$19.5	
BES' equipment depreciation	0.9	
BES' asset management system	1.0	
BES' existing support staff	0.2	
Overhead allocated to BES for agreement budget	<u>0.2</u>	
<b>TOTAL</b>	<b>\$21.8</b>	<b>\$21.8</b>
<b>If BES takes over sewer maintenance function (millions)</b>		
Direct costs <sup>2</sup>	\$15.1	
Indirect costs <sup>3</sup>	2.8	
BES' equipment depreciation	0.9	
BES' asset management system	1.0	
BES' existing and new support staff	<u>0.3</u>	
<b>TOTAL</b>	<b>\$20.1</b>	<b>\$20.1</b>
Difference equals potential <b>cost reduction</b> to ratepayers (millions)		<b>\$1.7</b>

Source: Audit Services Division cost comparison model and PBOT's interagency agreement (BUD 5) with BES for FY 2010-11

<sup>1</sup> All costs expressed are costs allocated to ESD.

<sup>2</sup> Includes BES contribution to street cleaning and pavement patching.

<sup>3</sup> Includes PBOT's continuing services, and indirect rate charge (estimated \$0.3 million) on labor costs for them; ESD's general fund overhead allocation; charges from other bureaus; and the use of PBOT's facilities.

**It could be difficult for PBOT to find funding to cover remaining costs if agreement is discontinued**

PBOT will no longer be able to recover the full \$5.6 million in overhead and indirect costs currently charged to BES. While PBOT would no longer have many of the costs associated with sewer maintenance and would therefore not need as much of the funding, ending the agreement with BES would leave some remaining costs to be borne by PBOT. This includes staff positions which are now only partially funded by the BES agreement. This could be partly offset by the BES payments to PBOT for continuing services such as pavement patching, customer service, and facilities rent. Without funding from the

agreement with BES, we estimate the net costs left with PBOT would be about \$2.5 million. PBOT would either have to find new funding sources, or reduce costs to make up the difference.

**Operational considerations are numerous**

Cost is only one component – although an important one – in the decision matrix when a government considers re-organizing the provision of one of its services. There are other operational decisions that could affect service delivery. Over the course of the past several years, both bureaus have offered advantages and disadvantages to altering the present arrangement. It would be very difficult or impossible to calculate the financial implications of these issues. Instead, City management and the City Council needs to consider them, in addition to the estimated changes in costs, in making any final decision. Figure 4 lists some of these operational issues.

An additional issue to be resolved if the agreement ends is the assignment of responsibility for an estimated \$466,000 of leave balances by ESD employees, at least some of which has already been paid by BES ratepayers through PBOT's labor charges. City policy does not address how responsibility would be transferred when some portion of the liability has already been paid by the bureau receiving the transferring staff.

Perhaps the largest risk of ending the agreement would be changing a work delivery method that has been in place for many years. Efficiencies may be gained by addressing the issues raised in Figure 4, but moving a large staff from one bureau to another may cause personnel or other unforeseen complications that could negatively affect customer service. The bureaus should present their arguments for changing or keeping the current agreement for sewer maintenance by PBOT to their Commissioners and to utility ratepayers for a constructive, open examination.



**Figure 4 Listing of operational issues for consideration by management**

Possible improvement	Issues raised by potential ending of agreement
Alignment of core service delivery with organizational goals and objectives.	BES' mission differs from PBOT. PBOT's overall emphasis may differ, with BES work secondary to roads. PBOT contends their mission to maintain City infrastructure is similar and as presently configured, ESD crews can respond to a variety of emergencies, representing a net benefit to the City.
Improved oversight of employees performing sewer maintenance work.	BES managers, who are accountable for service delivery, do not direct work on a daily basis, nor have direct supervisory authority to hire/ fire or discipline sewer repair personnel. PBOT managers believe that accountability and access to resources would be the same under any arrangement, since crews and managers would likely remain unchanged.
Improved customer service.	Improved goal alignment and access to ESD personnel may improve customer service.
Eliminating cost of negotiating annual agreement and organizing daily work between two distinct organizations.	For the staff time reported by the bureaus, this does not appear to be a substantial cost (\$75,000). However, studies in the area of contracting services show that this could be a much larger cost (upwards of 10%-20% of contract value). There may be administrative and coordination costs which have not been captured by our model or identified by the bureaus.
Eliminating some redundant management systems.	Two different asset management systems are now used to track sewer work: one at BES and one at PBOT. Some data input work is duplicated. PBOT managers contend their existing information management system can track work and productivity better than BES' system.
Removing possibility that BES ratepayers may be subsidizing PBOT transportation work.	PBOT-ESD crews are now used on occasion to respond to emergencies, such as snow or ice removal. PBOT contends combined emergency response work is a benefit to the City. Will BES provide crews and equipment to help PBOT clear streets in such emergencies if they manage ESD and how will BES be compensated for this? Neither Bureau has captured the potential cost of these activities.

Source: Audit Services staff interviews with bureau managers and review of internal documents

**Recommendation**

We found that there is sufficient evidence of potential cost reductions to warrant further study of the operational costs and benefits involved in ending the agreement with PBOT for sewer maintenance services. At this time, we are not recommending that the agreement be ended, but rather that a serious evaluation of the operational and funding advantages and challenges of implementing such a change be undertaken by the bureaus. The proposal should build on the financial work we have done in our model.

We recommend:

- 1. The Commissioners of the respective bureaus instruct the two Directors to develop a coordinated proposal to either end the agreement or continue it.**

At a minimum, the proposal should address the operational issues we raised in Figure 4 and the accompanying text. The proposal should also consider funding issues and include options for mitigating the financial impact on PBOT operations if BES ends the agreement. This should include an evaluation of the extent to which BES-purchased equipment and resources are used for PBOT activities not related to the sewer maintenance agreement. This evaluation should also include the impact on customer service of no longer having these resources available to PBOT should the agreement end.

In conclusion, Commissioners and management must weigh the apparent cost reduction to BES and its ratepayers, against the total cost to the City to end the agreement with PBOT. This consideration should include operational issues in addition to costs.

# Responses to the Audit





OFFICE OF MAYOR SAM ADAMS  
CITY OF PORTLAND

Dear Auditor Griffin-Valade:

Thank you for allowing me the opportunity to respond to your December 2010 audit report, *Sewer Maintenance: BES and PBOT maintain the system together, but should consider operational changes.*

It is always important to assess the quality and cost effectiveness of city service delivery. In that light, I appreciate your thorough inquiry into the inter-relationship of PBOT and BES sewer maintenance activities.

As we work to eliminate duplication and inefficiency in city bureaus, I support breaking down silos and strengthening inter-bureau collaboration. The cooperative work agreement between Transportation and Environmental Services that is analyzed by this audit remains a model for multi-bureau collaboration between in the City. Nevertheless, the audit has identified opportunities for improvement – and I will work with the Bureau of Transportation to ensure that those improvements are put into place.

The response letter from PBOT Director Sue Keil articulates several concerns about the sewer maintenance audit's conclusions. I share those concerns, and look forward to resolving them as we move forward. In the meantime, I am directing the Transportation Director to work with the Director of Environmental Services to identify and minimize duplication in the areas of computer systems, equipment sharing and training.

I look forward to further refinement of these systems and will expect a report back from the Transportation Bureau within six months.

Thank you again for your review of this topic.

Best Regards,

Sam Adams  
Mayor  
City of Portland





CITY OF  
**PORTLAND, OREGON**

**Dan Saltzman, Commissioner**  
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December 1, 2010

To: LaVonne Griffin-Valade

From: Dan Saltzman

Subject: Audit #365, Sewer Maintenance

Thank you for the opportunity to comment on Audit # 365: **Sewer Maintenance: BES and PBOT maintain the system together, but should consider operational changes.** I specifically appreciate the audit highlighting that \$1.7 million in savings to sewer ratepayers in the first year and as much as \$1 million a year ongoing could be realized by moving the Environmental Systems Division (ESD) of the Portland Bureau of Transportation (PBOT) to the Bureau of Environmental Services (BES). I look forward to working with Mayor Adams and PBOT on developing a coordinated proposal to save sewer ratepayers money.

Obviously financial considerations are important, but the operational issues preliminarily raised by the audit are also key to any Council decision on where ESD should be located. As the Commissioner in charge of BES it is often frustrating and confusing for my staff when following up on a sewer maintenance inquiry from a constituent. They must first contact BES staff who then contact PBOT staff with the cycle repeating itself as further inquiries develop. This is not an efficient operational scenario.

I am also interested in eliminating the costs of negotiating the annual agreement and organizing daily work between the organizations. The audit rightly points out there may be administrative and coordination cost savings which have not been captured by your model, I am confident further savings beyond what is identified in the audit can be found if ESD is part of BES. I look forward to pursuing this effort.







CITY OF PORTLAND  
ENVIRONMENTAL SERVICES



1120 SW Fifth Avenue, Room 1000, Portland, Oregon 97204 ■ Dan Saltzman, Commissioner ■ Dean Marriott, Director

December 7, 2010

Memo To: LaVonne Griffin-Valade, City Auditor

From: Dean Marriott 

Subject: Comments on the Sewer Maintenance Audit

Thank you for the opportunity to comment on Audit # 365: Sewer Maintenance: BES and PBOT maintain the system together, but should consider operational changes.

Your conclusion that as much as \$1.7 million in savings to ratepayers could be realized in the first year, and \$1 million in savings per year ongoing, by moving the Environmental Systems Division of the Portland Bureau of Transportation to the Bureau of Environmental Services warrants action. BES ratepayers pay a premium for PBOT to perform the core functions associated with maintaining our sewer and stormwater systems. While I understand that moving this activity to where it belongs would mean reductions for Transportation given the withdrawal of overhead support, this money would be better spent on services that benefit customers directly. This could include investing some of the initial savings in a state of the art facility that would provide improved training, equipment storage, and staging opportunities in order to maximize the efficiency of our maintenance operations.

Financial considerations are important and represent an opportunity to provide some relief to ratepayers, but the operational issues you identify for further consideration are key to any decision on where the Environmental Systems Division should be assigned. Clarifying the longer-term operational impacts will represent the main task in the process to develop a joint proposal. For example, we should consider the opportunities resulting from creating a modern environmental maintenance facility located to provide greater geographic coverage for less cost.

The operational benefits could be significant in the area of eliminating redundant management systems, providing better asset management, and focusing on a more direct degree of accountability. BES currently sends almost \$20 million annually to PBOT to maintain our sewer and stormwater system. This is a legacy from almost thirty years ago, before the creation of Environmental Services. The time has come to find a way to bring the core functions inside BES.

We are ready to work with PBOT, and realize that success will require a commitment to make the process work for bureaus, our ratepayers and the affected employees.

cc Commissioner Dan Saltzman  
Matt Grumm, Commissioner Saltzman's Office  
Jim Hagerman, BES  
Steve Behrnt, BES



Sam  
Adams  
Mayor

Susan D.  
Keil  
Director

TO: LaVonne Griffin-Valade, City Auditor

FROM: Susan D. Keil, Director  
Bureau of Transportation



RE: Sewer Maintenance Audit Response

DATE: December 8, 2010

Thank you for the opportunity to submit comments to the audit on maintenance of the sewer system.

This audit identifies both potential opportunities and possible risks associated with moving maintenance operations. On behalf of the Transportation bureau, we are always on the lookout for ratepayer and taxpayer cost reductions. The audit identifies several key areas of where efficiency can be improved, and we will work cooperatively with BES to pursue those.

However, we are deeply concerned that the audit overstates potential cost reductions, since it does not address the many hidden costs associated with changing the current structure of maintenance operations. These concerns are detailed below.

**Moving maintenance operations to BES would likely not provide the cost reductions suggested by the audit**

The audit suggests that moving sewer maintenance operations could reduce costs significantly. However, Transportation believes the report overstates potential cost reductions in several important ways:

**Savings in overhead/indirect costs may be overstated**

The audit suggests that there could be significant cost reductions by eliminating the overhead charged by PBOT for managing and operating sewer maintenance activities. However, this potential cost reduction is far from certain, since BES would need to incur additional costs to manage the maintenance program themselves. These costs could include additional staff, new software and other support. The audit deferred consideration of these potentially significant costs – which is, in fact, one reason the audit avoids using the term “savings” when discussing possible cost reductions.

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## **The cost of moving maintenance operations to a new, additional site in the city is not considered in the audit**

In 2008, BES revealed an evaluation of the cost to design and construct a new, additional stand-alone maintenance facility. That cost was estimated to be approximately \$30 million.

Curiously, the sewer maintenance audit makes no mention of this analysis and assumes that BES-controlled maintenance operations would remain in the current Transportation maintenance facility. This is unlikely for two major reasons: BES' consistently stated intention to build a new facility; and the fact that any attempt to retain dual operations at Stanton Yard would likely lead to an impossibly disrupted work environment.

If the BES proposal moves forward, the City of Portland will bear the cost of significant duplication of services, including but not limited to:

- construction costs of a new facility,
- vacancy costs at the current maintenance facility,
- duplicate work order and data transfer costs,
- additional equipment
- expansion of the city vehicle fleet,
- duplication of vehicle maintenance (garage) facilities and material storage facilities, and
- the cost of negotiating employee transfers and other labor relations issues

The audit did not include cost estimates for any of these items. By deferring consideration of the magnitude of these costs, the report suggests possible savings that are highly unlikely to materialize.

Before moving forward, a thorough study of any new site options – *including the true costs of establishing an additional city maintenance facility* – must be considered in any estimate of savings to rate-payers.

## **Shifting sewer maintenance management and duplicating facilities would disrupt operations and harm emergency response capability**

In addition to our concern that the sewer maintenance audit overstates potential cost reductions, Transportation is concerned that the audit does not address the fact that shifting maintenance operations could cause overall costs to city residents to go up

## **Changing the organizational structure could disrupt successful sewer maintenance activities**

The Bureau of Transportation places a high value on providing high-quality sewer repair. Over the past 3-1/2 years, Transportation has consistently meet or exceed the major sewer maintenance outcomes established by BES. In fact, last year Transportation employees cleaned and inspected over two million linear feet of sewer mains and laterals, exceeding our agreement with BES by 33%. We are on track to exceed this year's goals by the same order of magnitude. During the same time period, the Stormwater Unit completed more than 145% of its maintenance program; they are also ahead of target this year. In October, Transportation Maintenance Operations was awarded the "Julian Award" by the American Public Works Association for using the best sustainable sewer repair practices in Oregon.

## **A change in structure would also harm other critical transportation maintenance operations**

Portland citizens rely on the Transportation Bureau to keep roadways, bridges, and other infrastructure safe and in good repair. Currently, the co-location of these services with sewer maintenance activities allows for maximum efficiency and performance in maintaining critical city infrastructure. The close proximity of both operations leads to coordination and collaboration. It provides the opportunity to share equipment, expertise, and information in the field. The result is higher-quality service – and unquantifiable cost savings – for Portland citizens.

## **Duplicating maintenance activities and facilities could compromise Portland's ability to respond to emergencies**

Transportation is Portland's identified lead agency in responding to numerous emergency response situations, including winter storms, floods, and earthquakes. Over the years we have worked closely with the Portland Office of Emergency Management and the Water Bureau to develop detailed emergency response plans that match the level of response to the magnitude of the emergency event. The co-location of sewer maintenance and emergency response activities creates a flexible, nimble work force that can be adapted to real-time conditions that may or may not specifically include sewer repair. This flexibility is extremely important to Portland's emergency response capability.

Since sewer maintenance employees represent up to one-half of current emergency responders, if sewer management services were removed from Transportation, the city would be faced with a choice: either reducing emergency response services, or hire additional personnel and hire additional taxpayer costs.

At the same time, because Transportation uses a detailed work order system, we are able to ensure that all costs – including emergency response costs – are appropriately billed, and not inadvertently charged to sewer ratepayers.

## **Areas of possible service improvement are not measurable or clearly defined**

In addition to potentially over-stating cost reduction potential and not addressing operational impacts, we are concerned that the audit does not clearly define possible service improvements.

The audit suggests that alignment of core service delivery with organizational objectives would automatically result in an undefined service improvement. Yet there is no evidence today of a lack of alignment. Transportation shares many organizational objectives with BES, including maintaining Portland's infrastructure in a cost-effective, sustainable manner.

The audit also implies that BES would have improved oversight of employees performing sewer maintenance work if BES supervisors managed employees directly. Again, the proposed benefits remain vague and unmeasurable. Transportation currently involves BES in management and supervisory hiring processes. Costs associated with employees are driven by the City's labor agreements and, would remain the same regardless of bureau, unless BES were to outsource the entire sewer maintenance function – a shift that would have union implications and need significant additional analysis.

## **Transportation and BES should work together to eliminate redundancies**

Despite the concerns stated above, Transportation agrees that there are some redundant management systems. We appreciate the work of the Auditor's office in highlighting those areas, and we look forward to working with BES to find savings by eliminating those redundancies.

Specifically, we would welcome another study of modifying Hansen, the asset management system used by BES, to produce work orders with daily performance targets along with labor, material and equipment costing. This would allow Transportation to eliminate multiple entries of the same data and provide access to accurate, real-time data. In fact, as part of the full implementation of SAP Citywide, use of a single asset management, plant maintenance and work order system is being discussed. We believe it would be beneficial to move those conversations forward.

Finally, we agree with the audit that both bureaus should continue to collaborate to achieve the best service possible for all the citizens of Portland – who are not just sewer ratepayers, but city taxpayers who rely on critical citywide maintenance and emergency services.

Thank you for the opportunity to respond to this audit.



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*Sewer Maintenance: BES and PBOT maintain the system together, but should consider operational changes*

Report #365, December 2010

Audit Team Members: Ken Gavette, Fiona Earle

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

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*City of Portland Service Efforts and Accomplishments: 2009-10, 20th Annual Report on City Government Services (#400, December 2010)*

*Police Taser Use: Incidents generally resolved, but some practices and policies could be improved (#386, November 2010)*

*Business system software implementation: Expensive, late and incomplete (#392, November 2010)*

