

## Audit of Inventory Management: Facilities

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May 2009



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Multnomah County Interim Auditor

Sarah Landis  
Deputy Auditor

**Audit Staff**  
Fran Davison  
Mark Ulanowicz

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.



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Date: May 29, 2009

To: Ted Wheeler, County Chair  
Carol Ford, Department of County Management Director

From: Sarah Landis, Deputy Auditor  
Fran Davison, Senior Auditor  
Mark Ulanowicz, Principal Auditor

Re: Inventory Management: Facilities Audit

The attached report covers our recent performance audit of *Inventory Management: Facilities*. Facilities Operation and Maintenance (FO&M) is responsible for maintaining a large portfolio of buildings in locations throughout the county. The diversity of the county's facilities and the need to maintain a broad array of materials and supplies to service the buildings contribute to a challenging inventory management environment. The objective of the audit was to determine if internal controls over FO&M inventories of materials and supplies were sufficient to protect the county and FO&M from the risk of loss, inefficient purchasing, and inaccuracies in financial reports.

We found that while FO&M has recently taken steps to better monitor its inventory of materials and supplies, management of inventory was not based on an assessment of the risk of loss and monitoring of controls was informal and limited. Further, we found that communication of expectations and procedures was inconsistent, reducing the effectiveness of controls.

FO&M has responded positively to our audit recommendations and appears to be on its way to making necessary improvements. We extend our thanks to the FO&M staff and department representatives for their cooperation and assistance throughout the audit and commend them for their attention to the important issue of inventory management.

cc: Jana McLellan  
Bob Thomas  
Jon Schrotzberger  
Colleen Bowles



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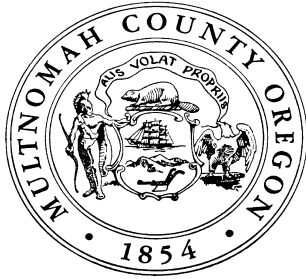
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*Audit Staff:*  
**Fran Davison**  
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## **Audit of Inventory Management: Facilities May 2009**

### ***Executive Summary***

Facilities Operations and Maintenance (FO&M) is responsible for ensuring that 132 buildings across the county are well maintained and available for use by county programs. A variety of factors contribute to the challenging nature of inventory management at FO&M. The large number of buildings FO&M is responsible for maintaining, combined with the diversity of building type and age of the mechanical systems in place in these buildings, creates a need to maintain an inventory of a great variety of materials and supplies.

Our audit objective was to determine if internal controls over FO&M inventories of materials and supplies were sufficient to protect the county and FO&M. In summary, we found:

- FO&M had control activities in place, but these were not consistently applied;
- Management of inventory was not based on an assessment of the risk of loss;
- Communication of expectations and procedures was inconsistent, reducing the effectiveness of controls;
- Monitoring of controls was informal and limited; and
- Lack of consistent internal controls led to purchasing inefficiencies and potential over-purchasing.

Recommendations included at the end of this report are intended to reduce the risk of loss and improve internal controls and accountability.

### ***Background***

FO&M is a unit within the Facilities and Property Management Division in Multnomah County's Department of County Management. FO&M is responsible for providing ongoing building maintenance, ensuring that buildings meet safety and other regulatory requirements, responding to service requests with 24/7 availability, and engaging in remodeling and construction projects as needed.

Facilities Operations and Maintenance is responsible for 132 buildings spread throughout the county. FO&M:

- Owns and operates 35 vans stocked with tools and supplies for individual trades;
- Stores materials and supplies in several buildings throughout the county;
- Maintains workshops stocked with tools, materials, and supplies for each trade group including a welding station, carpentry workshops, and alarm and lock shops;
- Maintains inventories of materials and supplies ranging from those associated with low value such as nuts, bolts, and screws, to items of greater value such as power tools and equipment.

FO&M consists of six skilled trade groups, environmental and energy specialists, a dispatch/call center, and supervisory and support personnel. In Fiscal Year 2009 (FY09), the FO&M budget was \$15,666,152 with 52 FTE. Ninety percent of the budget comes from internal reimbursements.

### ***Scope and Methodology***

This audit originally began as a countywide review of inventory management. We identified a number of business units that maintain inventories, such as Central Stores, the Library Administration, Fleet Parts, Facilities Maintenance, Facilities Janitorial, Sheriff's Office Warehouse, and the Health Department Clinics and Pharmacies. We did a preliminary examination of control processes in place to provide accountability over the various county inventories as well as factors that might be associated with risk. We considered risk to be related to dollar value, nature of the material, and size of the inventory. For example, we assigned a higher level of risk to computers and pharmaceuticals and a lower level of risk to office and janitorial supplies. Ideally, as the level of risk increases, stronger controls would be in place to protect the inventory.

We concluded that the risk and controls associated with inventories held by FO&M may have been out of balance and warranted closer assessment. Our audit objective was to determine if internal controls over FO&M inventories of materials and supplies were sufficient to protect the county and FO&M. We examined FO&M's inventory management using the COSO<sup>1</sup> framework of internal controls, which includes a review of:

- the overall control environment;
- risk assessment;
- control activities;
- information and communication; and
- monitoring.

In performing this review, we interviewed Facilities Division managers and staff members, toured shops and storage areas, and analyzed purchasing, work order, and financial data. We also reviewed past audits, examined inventory audits from other jurisdictions, and interviewed officials from other jurisdictions' facilities units as well as private contractors for comparison

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<sup>1</sup> In 1992, the Committee of Sponsoring Organizations (COSO) of the Treadway Commission developed an integrated control framework, which established a common definition of internal controls, standards, and criteria to use in assessing control systems.



purposes. 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.

### **Internal Controls**

Internal controls are the first line of defense in safeguarding assets and preventing and detecting errors and fraud. They should provide reasonable assurance that the objectives of an organization are being met. For internal controls to be effective in an organization, management must take the lead in emphasizing the importance of controls and ensure that the organization's strategy and goals do not work at cross purposes with the controls. FO&M maintained some strong control activities associated with the purchase of materials and supplies. However, the focus on flexibility in its business model created a challenging internal control environment. Poor communication and inconsistent integration of FO&M processes further reduced the effectiveness of existing controls.

### **Control Environment**

The control environment sets the tone for an organization and provides the foundation for an effective system of internal controls. An organization's operational philosophy should include elements of its internal controls. The FO&M philosophy, as described by unit managers, emphasized fast and effective customer service along with competitive rates for the work performed. The business model developed to implement this approach focused on providing its technicians with the resources and flexibility necessary to perform their jobs as quickly and efficiently as possible.

A customer service-oriented philosophy and strong internal controls are not mutually exclusive. However, the flexibility built into the FO&M business model added to the complexity of the inventory, making controls more difficult to implement. For example, rather than using a central warehouse to store materials and supplies, FO&M's trade technicians maintain separate storage areas in the county's largest buildings and in the 35 vans used by individual trades technicians. And, rather than purchasing materials and supplies centrally from a relatively small number of vendors, FO&M staff members used purchasing cards to make over 1,500 transactions at more than 200 different vendors. FO&M does this to reduce the time it takes to respond to customer requests and to complete work orders.

Reducing overhead – time spent by technicians performing duties other than those associated with their trades – in order to reduce the rate FO&M charges its customers for the trade technicians' services is an extension of the customer service philosophy. Based on discussions with trades technicians, we found that this approach was interpreted by some as meaning that doing paperwork, such as accurately accounting for the location and movement of supplies, was overly complicated and a low priority.

## Control Activities

Control activities exist throughout an organization to mitigate risk. Examples include segregation of duties and physical safeguards, among others. FO&M has control activities in place that could be used to provide an estimate of what material should be on hand. It also has controls to help ensure that purchases made by trade technicians are appropriate for their work. However, only some of these activities are consistently applied, reducing the effectiveness of the internal control system.

FO&M has a process in place by which materials and supplies are assigned to a specific work order or cost center at the time of purchase. The process calls for materials and supplies that are not immediately used on a work order to be assigned to either a building – if the material is intended to be used in a specific building – or to an individual van or shop. When technicians use materials on a work order that have been stored in a building, shop, or van, they use the process to reallocate the materials from storage to the associated work order.

If done correctly and combined with a physical inventory to serve as a starting point, FO&M could use a periodic inventory system<sup>2</sup> to estimate the dollar value of their inventory. Last summer, FO&M conducted a physical inventory of all its vans and storage areas to provide this starting point. However, when we tested the processes in place for recording material use and valuing inventory, we found they were not consistent. Additionally, the inventory activity was not designed with a periodic inventory system in mind, making it difficult to establish what material the FO&M should have on hand. Specifically:

- Not all trade technicians understood how materials used should be billed on work orders, resulting in an undetermined number of work orders being billed for more materials than were actually used, while others are billed for less.
- The process for recording the transfer of materials from van or shop stock to work orders was inconsistently used. Some technicians were not even aware that the process existed.
- There was no consistent methodology for accounting for the purchase of tools. Some tools were billed at least partially to work orders while others were not.
- There was no methodology for billing bulk, consumable items, such as small parts like screws, to work orders.
- The valuation of stock on hand during the physical inventory was largely based on the memories of trade technicians in that unit, rather than on a consistent methodology.
- The physical inventory itself was not conducted consistently: many of the counts and valuations were done by a single person, but other technicians inventoried their own vans.

FO&M trades technicians have authority to make purchases as needed to complete work order assignments and to stock their trucks with tools and supplies, although pre-approval is required for certain types of purchases in some work groups. All purchasing card transactions follow the

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<sup>2</sup> A periodic inventory system generally involves four components: 1) a physical count and valuation at the start of a period; 2) accurate data on materials purchased during the period; 3) information on what material was used during the period; and 4) a physical count of materials at the end of the period. In most periodic inventory systems, the first, second, and fourth components are used to calculate the third – the amount of material used during the period. Conceptually, any of the four components could be calculated if the other three were known.

same process after the purchase has been made to ensure that they are appropriate and assigned to a cost center. Lead technicians and supervisors review and approve all purchase receipts and submit them to the fiscal staff. The fiscal staff member checks that purchases are assigned to a cost center and reconciles the purchasing card statements. Processes are in place for handling missing receipts, job codes, and signatures. In our review of purchasing card files we found them to be orderly and complete with building numbers, work order numbers, and signatures accounted for. The fiscal staff members also monitor spending limits by card and merchant and ensure that employees comply with standard purchasing card rules.

### **Communication**

There is a structure for good communication among building managers, trades supervisors and leads. Regularly scheduled weekly meetings provide an opportunity to discuss on-going projects and work orders. Some supervisors also meet with their trade groups on a regular basis to discuss work group related issues.

However, communication of processes across and within trade groups is inconsistent. While the meetings foster communication, they have not been used effectively to promote control activities and processes. Many of the trade technicians we interviewed did not understand the process for assigning purchases of materials and supplies to the various cost centers or about the procedures for moving material between cost centers.

Trade technicians were also not always communicating within their groups regarding material and supply purchases. The FO&M business model creates the opportunity for technicians to purchase more materials than they need to satisfy a specific work order if they believe they will need the materials for future work orders or if buying more results in a better per unit price. However, there was no consistent process for communicating to the other technicians in the group when an individual technician had "extra" supplies, increasing the likelihood that the group as a whole would be buying more than it needed.

### **Monitoring**

Monitoring helps to ensure that all the components of an internal control system are in place and working properly. But, monitoring within FO&M appeared to be informal and limited. FO&M managers told us that they prepare work plans and draw up estimates of materials needed for about 50 percent of work orders –for those projects that are sufficiently large. Materials estimates like these are a useful control when compared against materials actually purchased for the project, but it was not clear that such reviews take place. Monitoring of the other 50 percent of work orders is more difficult because they are small repairs or projects and it may be difficult to anticipate materials needs.

### **Effect**

The flexible, independent contractor model has some advantages in terms of the potential for increased efficiency and trade effectiveness. However, weak controls can also result in inefficient purchasing, causing the county to buy more materials than it needs and putting it at a greater risk of loss due to materials becoming obsolete, lost, or stolen. Weak controls also provide little protection to the county or employees in the event that there are allegations of the

misuse of county property. Finally, ineffective inventory controls contribute to financial reports that are less accurate than they would be with stronger controls and systems.

Data collected by the Facilities and Property Management Division support the conclusion that it may be purchasing more materials and supplies than it needs. Table 1 below shows that in each of the last two years, the dollar value of materials purchased exceeded the dollar value of materials used in work orders or assigned to building stock.

**Table 1: Materials and Supplies Purchased and Used**

	<b>FY2007</b>	<b>FY2008</b>
Materials & supplies purchased	\$1,717,613	\$1,721,727
Materials & supplies used in work orders or assigned to buildings	1,494,409	1,562,721
Unallocated materials & supplies purchased	223,204	159,006

We noted inconsistencies in the data used to generate these figures – these include charges for items like uniforms that would not get charged to work orders – but the figures may also understate the amount of surplus materials. Trade technicians told us that it was common for excess materials to be billed to existing work orders, rather than to shop or truck stock because it was not clear how to assign the excess materials to future work orders. Information from the physical inventory also supports the conclusion that FO&M is purchasing too much material.

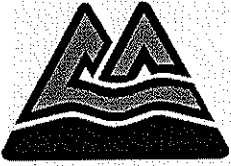
### ***Recommendations***

A variety of factors contribute to the challenging nature of inventory management at FO&M. The large number of buildings FO&M is responsible for maintaining, combined with the unique nature of the mechanical systems in place in these buildings, creates a need to maintain inventory of a wide variety of materials and supplies. Moreover, the geographic dispersion of the buildings and the need to service them on a 24 hour a day, seven day a week basis makes common inventory systems impractical. However, we believe improvements can be made without dramatically increasing administrative time.

- 1) Facilities management can simplify the inventory control environment by having less inventory. The practice of purchasing more materials than needed for a specific work order should be limited.
- 2) Working with its stakeholders, Facilities management should develop a practical periodic inventory system that accurately accounts for the purchase, use, and storage of materials and supplies. They should design and conduct future physical inventories with this system in mind. Such an inventory system will provide FO&M with more accurate accounting of the dollar value of materials and supplies that go through the system.
- 3) Facilities management should assess the risk in its inventory environment and establish inventory controls on the basis of risk. These controls should be applied consistently across the trade groups. For example, tools could be tracked separately from materials and the requirements for purchase of tools should apply to all trade technicians.

***Response to the Audit***





**Facilities & Property Management  
Department of County Management**  
**MULTNOMAH COUNTY OREGON**

401 N Dixon Street  
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**Date:** May 27, 2009

**To:** Sarah Landis, Deputy Auditor  
Fran Davison, Senior Auditor  
Mark Ulanowicz, Principal Auditor

**From:** Carol Ford, Department of County Management Director *CF*  
*RC* Bob Thomas, Facilities & Property Management Director

**Subject:** Response to Final Draft of the Inventory Management:  
Facilities Audit

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The Department of County Management and the Facilities & Property Management Division both value the work the County Auditor's Office has performed in evaluating the inventory management of supplies in Facilities Operations & Maintenance. As your audit describes, Facilities Operations & Maintenance (FO&M) maintains a complex and diverse portfolio of buildings that requires the routine handling of thousands of specific maintenance parts during our normal course of business. Maintenance staff must balance the flexibility of an inventory large enough to allow for quick response to building problems with a system of well controlled accounting of supplies.

FO&M currently performs a year end inventory of supplies and is preparing now for that end of June activity. As we design this year's inventory, we will use information in your audit to help us refine our methodology. As pointed out by your audit, FO&M has improvements that can be made in fully setting our controls, communicating process throughout our organization, and documenting our progress.

Facilities appreciates the focused opportunity in coming months to address the three recommendations provided by your audit:

- Assess the risk in our inventory environment and establish effective controls based on that risk;
- Develop a practical periodic inventory system that accurately accounts for the purchase, use, and storage of materials and supplies; and
- Simplify our inventory control environment by having fewer supplies on hand.

Facilities has set a high priority to incorporate your recommendations into our division's work plan over the next year to make progress in a phased approach. First, we will establish a cross functional Logistics Team that will provide specific input and systems recommendations to design a new inventory model. System

improvements will focus on communication tools (like our pilot Mobile Asset Management SAP Module roll-out), warehousing methodologies and evaluation of risk criteria. Team members will represent all stakeholders within Facilities and will recruit representatives from County Finance, Materiel Management and SAP groups to assist with integration of our process with their business lines.

In a second phase, we will continue to utilize the Logistics Team to test & improve the systems necessary to provide accurate inventory accounting and communication. Through the ongoing efforts of FO&M staff, the attention to inventory monitoring and communicating of available materiel through the Mobile Asset Management system, we will improve the accuracy and timely availability of materials for the efficient and effective use of our trades staff.

We feel that this audit was fairly executed and will serve as a valuable tool for FO&M to utilize in our continuing effort to maximize our efficiency and cost effectiveness. We look forward to checking in with your staff during the development of our inventory system to ensure that it meets the aim of your recommendations.