

**METRO**  
**Regional Environmental Management  
Department**

***Transfer Station Revenue Controls***

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**October 2002**

A Report by the Office of the Auditor



**METRO**

PEOPLE PLACES  
OPEN SPACES

**Alexis Dow, CPA**  
**Metro Auditor**

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METRO

## Office of the Auditor

October 31, 2002

To the Metro Council and Executive Officer:

Metro's two solid waste transfer stations are the intermediary collection points for waste and recyclable materials before final transfer to landfills. Activities at these transfer stations are Metro's largest operation, with revenues of over \$50 million in fiscal year 2002.

This review, which was part of my work plan for 2001-02, assessed controls over this key source of revenue. It covers three main areas: capturing revenue (accurately determining revenues to be collected and including them in the accounting records), controls over cash receipts and information systems.

In many respects, Metro's transfer station activities exemplify the best practices recommended for such operations. Metro was the first agency in the country to implement an automated weighing system, and many consider Metro an industry leader. Metro's control over the revenue-generating activity has significantly improved over the last year, with added enhancements to information security and increased attention to cash controls and supervisory reviews.

In collaboration with Metro personnel, we identified opportunities to further ensure the full capture, billing and collection of all revenue generating activity. In the report we detail eight recommendations in two key areas: revenue management – capturing revenues and controlling cash receipts, and information management – minimizing risk in information systems.

We appreciate the cooperation and assistance provided by the Metro staff we worked with during this survey, particularly staff from the Regional Environmental Management Department.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Alexis Dow'. The signature is fluid and cursive, with a long, sweeping tail on the 'w'.

Alexis Dow, CPA  
Metro Auditor

Auditor: The Rasmussen Group LLC

# ***Metro Transfer Station Revenue Controls***

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**October 2002**

Report presented to Alexis Dow, Metro Auditor



October 17, 2002

Ms. Alexis Dow, CPA  
Metro Auditor  
600 Northeast Grand Avenue  
Portland, Oregon 97232

Dear Ms. Dow:

The Rasmussen Group, LLC is pleased to submit this report on the Metro Transfer Stations Revenue Controls Project. This report summarizes the results of the internal control review, which included operational efficiencies, information technology, cash and accounting processes. Our results are based on information provided by Metro staff and interviews with key personnel.

We appreciate the cooperation we received from Metro's staff during our review. There have been many progressive practices developed by the Regional Environmental Management Department at the Transfer Stations, as described in the background section of the report. The continued development of best practices internal controls will enhance the effectiveness of operations and the functions that support it.

We appreciate the opportunity to support Metro on this important project.

Sincerely,

The Rasmussen Group, LLC



Karen Rasmussen  
President

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| Metro Executive Officer Mike Burton                              |   |

## Executive Summary

Each working day, hundreds of commercial waste haulers and private citizens bring waste to Metro's two solid waste transfer stations. This ranges from pickup loads of yard debris to curbside waste from weekly garbage collections. Metro's two transfer stations – Metro Central Station located in North Portland and Metro South Station located in Oregon City – are the intermediary collection points for recycling and waste before final transfer to landfills.

Transfer station activities are very much a business operation for Metro. It involves making quick and accurate determination of amounts due for the types and quantities of waste disposed, collecting and safeguarding onsite cash payments, and providing accurate billing information in the system. In terms of dollars, it is Metro's largest operation, with revenues of over \$50 million in fiscal year 2002. Sound practices and controls are needed to minimize risk. Without them, loss of Metro assets could occur through error, theft or inadequate procedures.

This review, which was part of the Metro Auditor's work plan for 2001-02, was designed to assess controls over this key source of revenue. It covered three main areas: capturing revenue (that is, accurately determining revenues to be collected and including them in the accounting records), and controls over cash receipts and information systems.

In many respects, Metro's transfer station activities exemplify the best practices recommended for such operations. Metro was the first agency in the country to implement an automated weighing system (the WeighMaster system five years ago), and Metro is considered an industry leader by many. Metro's control environment for the revenue-generating activity has significantly improved over the last year, with added enhancements to information security and increased attention to cash controls and supervisory reviews.

During the audit, we performed extensive data analytics testing to detect any unusual fluctuations and to isolate any untypical patterns that might signal inappropriate activity. This work disclosed no significant issues that transfer station personnel had not already resolved.

In collaboration with Metro personnel, we did identify opportunities to further ensure the full capture, billing and collection of all revenue-generating activity. Many of the recommended actions are related to Metro's position as the first transfer agency in the country to implement an automated system – and therefore to face issues that have not been addressed before. The key areas observed for productive change are summarized in the recommendations on the following page. Many of the action plans to implement changes are well underway.

## Summary of Recommendations

Metro can enhance its generally favorable control environment by taking further action on a number of fronts. The following is a summary of these actions, which are presented in more detail in the Matrix of Issues and Recommended Actions section of this report. All recommendations were developed with the involvement of Metro personnel from the departments and divisions responsible for implementing the changes, which have already begun.

### Revenue Management: Capturing Revenues and Controlling Cash Receipts

- **More fully use the capabilities of the automated weighing system.** In particular, Metro can use the system's capabilities to issue more identification tags for frequent transfer station users, manage and control tags issued to occasional users, stop specific vehicles no longer authorized to use transfer stations, more closely monitor vehicle tare weight accuracy, and provide information for various reports that can be used to spot and investigate unusual activity patterns.
- **Develop reports and procedures to improve operations and monitor activities.** Areas that can be addressed include revalidating tare weights for vehicles that frequently use the transfer stations, comparing revenues with waste tonnage removed from the transfer stations, and examining voided, altered or duplicated transactions to ensure no irregularities exist.
- **Change operations to ensure users do not enter and leave without weighing in.** At Metro South, unauthorized vehicles have relatively easy access to the back gate, where they can enter without being weighed.
- **Strengthen cash controls over sales of recycled paint.** Controls over paint sales, which take place at Metro South, would be enhanced by improved inventory practices, greater restrictions on access to keys to the safe and more frequent deposit of cash.
- **Document all practices in written policies and procedures.** Written guidelines and procedures help ensure that appropriate practices are followed.

### Information Management: Minimizing Risk in Information Systems

- **Assure continuity of operations.** A written plan would help address steps to be taken in an emergency or if the automated weighing system's supplier is unable to continue programming and other support. Creating a backup for the information on the automated system would help make the data more secure.
- **Integrate the automated weighing system more fully with Metro's information technology policies.** Controls would be strengthened by ensuring that Metro's strategic plans for information technology, as well as its specific policies, standards and guidelines for information systems, extend to the automated weighing system and other information systems used within the Metro organization.
- **Develop reports to detect unauthorized or inappropriate changes.** Additional reports, together with management reviews, can help monitor such matters as changes to files or to transaction data.

## Project Background

Reviewing internal controls at Metro transfer stations was part of the Metro Auditor's 2001-02 Audit Plan. Given the amount of revenue generated by transfer operations, the Metro Auditor determined that a review should be conducted to ensure that appropriate controls and practices are in place to accurately capture, record and collect revenues.

### Preliminary Work: Assessing Areas of Possible Risk

A preliminary survey was conducted to establish the scope of this review. This survey identified the following potential risks for transfer stations in general:

- **Revenue Capture** – Revenue generated at the transfer stations may not be accurately determined, recorded in the accounting records and billed to customers. This could result in lost revenues through error, theft or improper billing.
- **Cash Controls** – Cash may not be properly collected, safeguarded and recorded. This could result in loss of assets through error, theft or improper collection.
- **Information Systems** – Appropriate controls may not be in place to accurately process and safeguard data. This could result in incorrect information and undetected fraudulent activity.
- **Reputation Risk** – Agency reputation may not be adequately protected. Errors could result in disgruntled customers and adverse publicity.

The preliminary survey included the following activities:

- reviewing industry background information for waste transfer station operations
- interviewing 15 individuals in various departments, including Regional Environmental Management (REM), Accounting, the Auditor's Office, Information Technology and the transfer station scalehouse operations
- tours and walk-through of operating procedures at Metro Central Station and Metro South Station, including cash handling, weighing, traffic flow and waste transfer activities
- analysis of preliminary financial data provided by REM
- reviewing prior audits performed for transfer station activities by both REM and the Metro Auditor
- reviewing transfer stations audit reports for other municipalities
- reviewing existing policies and procedures over the activities.

In conclusion, the survey determined that the major activities needing review at Metro were:

- proper revenue capture (accurately determining revenues to be collected and recorded)
- adequate cash receipts controls
- ensuring the accuracy, completeness and integrity of information systems processing.

Proactively taking steps to mitigate these risks helps protect Metro's reputation with customers and in the community.

## **Review Procedures: Steps to Assess How Metro Is Controlling Risk**

Based on preliminary survey work, the following procedures were established and carried out at Metro Central Station and Metro South Station (including Metro South's recycled paint operation).

### **Revenue Capture**

- Assessed the control environment on site, including procedures over the capture and recording of revenues.
- Assessed the efficiency and effectiveness of the weighing practices on site, including the tare weight estimating practices and the accuracy of recording.
- Evaluated the appropriate capture of revenues and billing in the PeopleSoft system.
- Performed detailed analytic reviews, as appropriate, to test the reasonableness of recorded revenues based on volumes and other relevant factors. This included analysis of revenues from key customers.
- Reviewed the internal analytical procedures in place to review the reasonableness of recorded revenues on a recurring basis.
- Evaluated the internal policies and other procedures in place to ensure that revenues are appropriately captured and recorded.

Extensive data analytic testing was performed using Audit Command Language (ACL) software. The purpose of the analytic testing was to detect unusual fluctuation in data and isolate unusual patterns that might indicate errors or inappropriate activity. These tests were performed using data from the WeighMaster system for the period July 1, 2001 through March 31, 2002. As part of this analysis we:

- Summarized and reviewed voided transactions by account, focusing detail testing on five accounts with the highest voids.

- Identified vehicles with high numbers of voided transactions.
- Identified all vehicles with excessive time at the station (over 2 hours) and performed detail testing of proper resolution.
- Summarized all manual adjustments by technician and station for detailed review; focused testing on those with highest number of adjustments.
- Summarized minimum fees charged, to determine proper assessment.

### **Cash Controls**

- Assessed the control environment for cash collections on-site at the transfer stations.
- Assessed the efficiency and effectiveness of cash collection practices.
- Evaluated internal policies and procedures in place to ensure cash is appropriately collected, safeguarded and recorded.
- Evaluated inventory controls over Metro Paint for effect on cash controls.

### **Information System Controls**

- Reviewed access to and security over WeighMaster system.
- Reviewed controls to ensure that system input from the WeighMaster system equals revenue and billings recorded.
- Reviewed appropriate safeguarding of WeighMaster and PeopleSoft system data.
- Evaluated business continuity planning for the WeighMaster system.
- Reviewed controls over authorization and execution of program changes, including proper segregation of duties between operations and programming.
- Reviewed controls over changes to the master file and transaction data.

## Review Findings

Our various tests and procedures yielded generally positive results: Metro has a set of controls in place to help minimize risk in all three areas we reviewed. However, controls can be further strengthened by taking action on a number of fronts.

Metro has established itself as a leader in transfer station practices, being the first agency in the country to implement an automated weighing system five years ago. Personnel from other transfer stations from across the country come to visit Metro transfer station facilities and observe their practices. Metro also continues to seek further improvements, with such steps as the planned implementation of the new WeighMaster office in November – December 2002.

Further, Metro has taken steps to assess its procedures and improve them. In the last year, for example, both system security and cash controls have improved significantly. Improvements have included establishing:

- strict access definitions
- increased usage of edit reports to detect incomplete or unusual transactions
- strict practices for cash handling, including documented practices for disciplinary action when non-compliance occurs.

We found that all significant issues had been detected and adequately resolved by transfer station personnel.

Finally, Metro has also undertaken equipment changes to make work stations more ergonomically correct and has been proactive in staff education, including cross training within Metro and visits to transfer stations outside of Metro.

Within this generally favorable context, our review did identify a number of additional steps Metro could take to strengthen controls even further. These actions are summarized in the matrix on the following pages. The matrix explains the specific issues identified, the nature of the risks involved and the recommended action plan. The issues have been discussed with the appropriate Metro personnel and the recommended actions were collaboratively developed with Metro management. Many of the actions needed to implement the recommendations are well underway.

## Matrix of Issues and Recommended Actions

| Issue  | Description  | Risk   | Recommended Action   |
|--|--|--|--|
| <b>Revenue Capture</b>   |  |  |  |
| <p><b>Tare Weight System</b></p> <p><i>Some commercial vehicles go long periods of time without verifying the tare weight used to calculate fees.</i></p> <p><i>Complete records of tare weight checks are not maintained.</i></p> | <p>Approximately 80% of commercial vehicles using the transfer stations have standard tare weights in the WeighMaster system. (A tare weight is the weight of the vehicle. This allows the truck to avoid weighing-out when exiting, thereby saving time.) The initial tare weights are established based on five initial weigh-ins. After this, they are tested every three months if the vehicle happens to weigh at the station during the two-day period that the tests occur. If a vehicle is weighed during the test period, and if the recorded weight is significantly higher the system tare weight recorded (over 300 pounds), the weight is adjusted. Underweight tares are not recorded or adjusted.</p> <p>Records are not maintained of the tare weights checked by vehicle. There are vehicles whose tare weights have not been verified for a long time.</p> <p>Without this information, vehicles no longer using the stations cannot be identified, and the accuracy of tare weights recorded cannot be monitored.</p> | <p>Risk of inaccurate billing and revenues resulting from errors in weight calculations.</p> | <ul style="list-style-type: none"> <li>• Maintain records of tare weights checked (both under and over) and the dates in the WeighMaster system for all vehicles with tare weights.</li> <li>• Based on the information obtained above, review the current frequency of tare weight checks for each vehicle.</li> <li>• Establish a minimum frequency of tare weight checking to be required. For example, 90% of vehicles on the tare weight system will be checked at least twice annually.</li> <li>• After establishing the minimum frequency, monitor the frequency and flag vehicles needing weigh-in. Create an audit report which shows the most recent tare weight checks and vehicles which have not had tare weights recorded to identify vehicles not meeting the frequency check standards.</li> <li>• Consider purging truck file for vehicles not visiting the station. For vehicles still using the station that have not met established standard for frequency of weighing, require weighing to meet Metro standards.</li> <li>• Document written procedures for the above processes.</li> </ul> |

| Issue  | Description   | Risk   | Recommended Action  |
|--|---|--|---|
| <p><b>Vehicle Weigh-in, Weigh-out Practices</b></p> <p><i>Keeping the back gate open at Metro South exposes the operation to potential lost revenue.</i></p> | <p>The back gate at Metro South is left open weekdays 7 am to 7 pm and on Saturdays. The back gate is left open for the convenience of certain vehicles not needing to weigh in and out (for example, equipment vehicles, vehicles taking waste to the landfill and Saturday morning latex paint customers). Metro relies on spotters to ensure that vehicles that should weigh in do not inappropriately enter or leave the facility through the back gate without crossing the scale. The gate is weight activated for exit.</p> <p>At Metro South, the back gate is located before the gate entrance to the weigh scale and is easily accessible. By contrast, at Metro Central, the back gate location is more remote and has more restricted access.</p> | <p>Vehicles can enter through the back gate instead of weighing in. This could result in underreported revenues and reduced cash flow from the weight of disposed solid waste not being properly recorded.</p> | <ul style="list-style-type: none"> <li>Subsequent to this audit, the open hours for the back gate were further limited on Saturdays to 7 – 9 am. However, we recommend extending the hours that the back gate is closed.</li> <li>Make arrangements for vehicles that need to enter frequently to have remote controls for entrance.</li> </ul>   |
| <p><b>Automated Tags</b></p> <p><i>More vehicles can use the benefits offered by automated system.</i></p>   | <p>Approximately 15% of commercial vehicles do not have automated tags. High usage vehicles without tags that may benefit from the automated system are not currently identified.</p>   | <p>The efficiencies and system capabilities available through the WeighMaster system are not being maximized.</p>  | <ul style="list-style-type: none"> <li>Identify commercial vehicles frequently visiting the transfer stations that do not have automated tags by creating a query in the WeighMaster system. Once identified, contact the vehicle owners as appropriate to encourage use of automated tags. Consider offering a discount to customers using automated tags.</li> <li>Once established, periodically run the query to identify commercial vehicles without tags, and encourage the use of automated tags.</li> </ul> |

| Issue   | Description   | Risk   | Recommended Action   |
|---|---|--|--|
| <p><b>Automated Tags</b></p> <p><i>Process needed to flag vehicles that are no longer authorized.</i></p>           | <p>The WeighMaster system does not currently have the ability to flag and stop a vehicle from entering the station. The entire account can be blocked, but single vehicles within an account cannot be blocked. With the system upgrade planned for December 2002, the system will be able to flag individual vehicles and prevent entrance to the transfer station through the system.</p> | <p>Vehicles that are no longer authorized to use the facility may continue to use it.</p>  | <ul style="list-style-type: none"> <li>• Once the system is upgraded in December 2002, implement the capability to stop selected tagged vehicles. This will be useful to stop unauthorized vehicles from using the stations.</li> <li>• Document written procedures for the above processes.</li> </ul>  |
| <p><b>Handheld Tags</b></p> <p><i>Stronger procedures can minimize risk of switching tags between vehicles.</i></p> | <p>Many vehicles have been issued handheld tags. Handheld tags are not attached and can be transferred between vehicles. If the vehicle has been assigned a tare weight, this could cause inaccuracies in weight.</p> <p>Records of customers with handheld tags are not currently maintained.</p>  | <p>Handheld tags are not secure, creating potential tag misuse and billing inaccuracies. This may result in lost revenues and reduced cash flow.</p> | <ul style="list-style-type: none"> <li>• Establish a record of handheld tags issued. Consider establishing a unique numbering system for handheld tags that will differentiate them from attached tags. This will simplify tag management and enhance tag control.</li> <li>• Consider reducing the use of handheld tags, for those issued and for future issuance. Customer service should be carefully considered in enacting this process and making changes.</li> <li>• Document written procedures for the handheld tag processes.</li> </ul> |

| Issue  | Description   | Risk  | Recommended Action   |
|--|---|---|--|
| <p><b>Backup</b></p> <p><i>More complete backup needed for accounting clerk.</i></p>   | <p>One accounting clerk in the accounting department is primarily responsible for processing transaction data and truck account file information. In cases of vacation and illness, full backup is not always available to perform her functions. This can create a backlog in updating the truck and account files and processing transactions.</p> <p>A management technician serves as the primary back up and the accounts receivable supervisor serves as a secondary backup. Current staffing levels do not provide 100% coverage for every function when absences occur.</p> | <p>Data and account information may not be recorded timely, resulting in delayed recording of revenues. The risk of poor customer service increases when accounts are not updated timely.</p> | <ul style="list-style-type: none"> <li>Designate a backup individual to perform tasks when the accounting clerk is absent. Provide the designated backup name to the Regional Environmental Management Department in advance of the absence.</li> </ul>  |
| <p><b>Voided Transactions</b></p> <p><i>Continue the new, stronger procedures.</i></p> | <p>The reasons for voided transactions were not always documented during the year. However, changes were recently made to require that all voids be documented in the system.</p>   | <p>Voids present the opportunity to eliminate a valid transaction and not record the cash received. This creates the opportunity for loss of Metro assets.</p>                                | <ul style="list-style-type: none"> <li>Recent changes requiring documentation of all voids, including a supervisory review, should be continued. This review should be reported to the division manager within the Regional Environmental Environment Department, who should be responsible for ensuring that it has been regularly and accurately performed. In addition, the requirements of the review process should be documented.</li> </ul> |

| Issue   | Description  | Risk  | Recommended Action  |
|---|--|---|---|
| <p><b>Analytical Reviews of Revenues</b></p> <p><i>Consider additional checks on revenue accuracy.</i></p>              | <p>Analytical reviews were periodically performed in the past to compare the reasonableness of revenues recorded to waste tonnage removed from the site. This was discontinued a few years ago as the waste types were expanded, and the calculation became more complicated.</p>                                  | <p>Revenues may not be accurately captured and recorded.</p>  | <ul style="list-style-type: none"> <li>Consider resuming analytic reviews of revenues recorded compared to waste removed from the site. This would help provide assurance that revenues are being properly captured and recorded.</li> </ul>  |
| <b>Cash Controls</b>  |  |   |   |
| <p><b>Technicians' Ability to Change Waste Types</b></p> <p><i>Reports would help monitor for unusual patterns.</i></p> | <p>At Metro Central and Metro South, technicians can change waste for both cash and charge sales. For cash sales, this creates the inherent risk that waste type and the rate charged could be changed at checkout.</p>  | <p>Revenues may be adjusted in the system to reflect amounts different from the cash received. All cash received may not be properly deposited and credited to Metro's assets. There is a risk that these activities may go undetected.</p> | <ul style="list-style-type: none"> <li>Create an edit report that lists changes in waste type made by technicians.</li> <li>Perform and document a supervisory review of such changes, to ensure that unusual patterns are investigated. This review should be documented.</li> </ul>       |
| <p><b>Paint Sales</b></p> <p><i>More frequent cash deposits could help minimize loss potential.</i></p>                 | <p>Large amounts of cash can be kept on hand in the deposit vault. (Daily cash received, including checks and charge cards, can be \$4,000 to \$5,000 per day.) Cash was being deposited twice weekly in June 2002 (on Mondays and Fridays). In August 2002, Wednesday was added as an additional deposit day.</p> | <p>This increases the risk of asset loss from excess cash on hand.</p>  | <ul style="list-style-type: none"> <li>Subsequent to the audit, a video camera was installed to record the counting of cash and preparation of the deposit in the office. While these changes are improvements, consideration should also be given to depositing the cash daily.</li> </ul> |

| Issue  | Description   | Risk  | Recommended Action   |
|--|---|---|--|
| <p><b>Paint Sales</b></p> <p><i>Effective paint inventory system would help minimize potential revenue losses.</i></p> | <p>As part of waste transfer operations, Metro accepts and recycles unwanted paint through a sales office. Metro's current manual inventory system for this paint is not fully accurate. Without an accurate system, recorded inventories cannot be compared to the physical inventories. This is necessary to maintain proper inventory control and calculate shrinkage.</p> <p>Pre-numbered receipts are used to track paint sales. The activity of the paint sales counter is viewable in the office upstairs through a camera. When significant paint sales occur on Saturday mornings, there is fewer staff to view the paint sale counter activity.</p> | <p>An ineffective inventory system increases the potential that paint could be sold over the counter without being credited as revenue.</p> | <ul style="list-style-type: none"> <li>• Consider implementing an effective inventory system to enable accurate maintenance of inventory records. Periodically reconcile book to physical inventories and calculate any shrinkage. This would enable the accurate calculation of any shrinkage or loss of inventory.</li> <li>• The procedures used to perform the inventory reconciliation should be documented. A supervisory review of the reconciliation should be performed and documented.</li> <li>• The cost effectiveness and timing of this solution must be considered before implementing a new system.</li> </ul> |
| <p><b>Paint Sales</b></p> <p><i>Access to safe keys should be further restricted.</i></p>                              | <p>Access to the deposit vault upstairs may not be adequately restricted. In June 2002, three individuals knew the location of and had access to the two keys required to open the deposit vault. The two keys were kept together in the unlocked office adjacent to the deposit vault room.</p>  | <p>This increases the risk of asset loss.</p>   | <ul style="list-style-type: none"> <li>• Maintain restricted and limited access to all safe keys. Keep the two keys required to open the safe separate. Do not leave any keys to the safe openly accessible to prevent unauthorized usage.</li> <li>• Subsequent to the audit, Metro paint personnel indicated that the two keys were separated and stored in different locations to decrease the likelihood of unauthorized access.</li> </ul>  |

| Issue  | Description   | Risk  | Recommended Action  |
|--|---|---|---|
| <p><b>Identical Transactions</b></p> <p><i>Identify and review transactions for the same vehicle with the same date and time.</i></p>              | <p>An audit review of vehicle transactions with identical time and dates detected a few instances of errors and duplications. The scalehouse lead technician at Metro South believes these were caused by a WeighMaster server problem that existed last fall and winter. Each activity was assigned a unique transaction number. The errors detected were not significant, and did not occur frequently without correction.</p>  | <p>The potential of inaccurate weights for transactions creates a risk of inaccurate billing and under or over stated revenues. This can also increase the risk of poor customer service.</p>   | <ul style="list-style-type: none"> <li>• Monitor the accuracy of data recorded through a periodic system query of identical vehicles with repeat transactions for same date and time out. Research any items appearing in the query to ensure accurate billings have been made. Notify customers of any erroneous transactions needing correction. This process should be documented and reviewed by a supervisor.</li> </ul>   |
| <b>Information Technology</b>  |   |   |   |
| <p><b>Business Continuity Planning</b></p> <p><i>A written plan would help ensure continuity in emergencies or if personnel changes occur.</i></p> | <p>Metro currently depends on an outside vendor for programming and support of the WeighMaster system. This vendor is primarily dependent on one key individual to run the system.</p> <p>There is no formal business continuity plan in place for Metro IT operations or the WeighMaster system.</p> <p>Metro is current preparing a strategic plan for Information Technology. Organizationally, Metro will be undertaking a business continuity plan once the strategic planning process is complete. This business continuity planning process is expected to begin by October 1, 2002.</p> | <p>The WeighMaster system may not be adequately supported and operational in the event of an unexpected disaster, or loss of WeighMaster personnel. This creates a risk of revenue loss if revenues cannot be timely and accurately billed and increases the risk of poor customer service.</p> | <ul style="list-style-type: none"> <li>• Develop a written plan to address steps to be taken in the event of a system continuity issue. The steps might include: <ol style="list-style-type: none"> <li>1) Address copyright issues or other rights that may exist in the WeighMaster agreement.</li> <li>2) Define the continuity steps that would take place to ensure the effective operation of the system in the event that the WeighMaster company is unable to continue services.</li> </ol> </li> <li>• Document the business continuity planning, including obtaining any needed contract modifications in the event of operations termination.</li> </ul> |

| Issue  | Description   | Risk  | Recommended Action   |
|--|---|---|--|
| <p><b>IT Policies and Guidelines</b></p> <p><i>Effectively communicate and adhere to Metro's data security policies, standards and guidelines throughout the organization.</i></p> | <p>Metro has established data security policies, standards and guidelines for the entire organization. These policies and standards have been periodically distributed and are available on the Metro intranet.</p> <p>During January and February of 2002, REM established significant security parameters for the WeighMaster System, including access definitions and password controls. Some of the password controls used in the WeighMaster system did not comply with Metro password policies.</p> <p>There seem to be inconsistencies within Metro regarding the requirements to comply with Information Technology policies when a system is not used throughout Metro (enterprise-wide system).</p> | <p>The risk exists of potential asset loss and reputation risk in the event of inappropriate practices, such as unauthorized access or modifications.</p> | <ul style="list-style-type: none"> <li>• Ensure that the existing Information Technology policies, standards and requirements are effectively communicated and adhered to throughout the organization. Clarify that the policies, standards and requirements apply to all Metro employees and all Metro information systems (not just enterprise wide systems). This will help ensure that critical processes are uniformly implemented and followed throughout Metro.</li> <li>• Compliance with established standards and guidelines should be monitored and periodically reviewed.</li> </ul> |
| <p><b>Overrides of Fields in Reports</b></p> <p><i>Monitoring the system would help ensure that all overrides are appropriate.</i></p>   | <p>The technicians can override most fields, including rates, as they have access to the WeighMaster Scalehouse Office Reporting module in the scalehouse.</p>  | <p>Inappropriate edits may be made that expose Metro to risk of loss or fraud.</p>  | <ul style="list-style-type: none"> <li>• Consider developing an edit report that details all overrides. Scalehouse management should review the report weekly, to ensure the appropriateness of changes made. Periodically, the transfer station supervisor should review these reports for trends and unusual activity. The review should be documented, and the results communicated to the Division Manager of the Regional Environmental Management Department.</li> </ul>   |

| Issue  | Description  | Risk   | Recommended Action  |
|--|--|--|---|
| <p><b>Information Technology</b></p> <p><i>Updating the IT strategic plan is important.</i></p>                                      | <p>The Information Technology Department is currently updating the Information Technology Strategic Plan. The intent of the plan is to increase the influence and involvement of the Information Technology Department with respect to information technology matters throughout Metro.</p>  | <p>Information technology decision-making may be inconsistent within Metro. Efforts may be duplicated. Information technology expertise available in the Information Technology Department may not be effectively leveraged throughout the organization. Inconsistent and inefficient practices are more likely to occur without a unified, agreed upon strategic direction.</p> | <ul style="list-style-type: none"> <li>Finalize and implement a comprehensive information technology strategic plan for Metro. This plan should emphasize a stronger influence of the information technology department for technology decisions. This would more effectively leverage information system expertise and encourage consistency, efficiency and economy of scale at Metro.</li> </ul> |
| <p><b>WeighMaster Password Controls</b></p> <p><i>WeighMaster password definitions currently do not conform to Metro policy.</i></p> | <p>The purpose of user password controls is to ensure that only authorized personnel have access to operating systems, applications and data.</p> <p>Currently, passwords in the WeighMaster system are changed every six months and a three-character password is required. Generic passwords were used during the year.</p> <p>Metro's Executive Order 76 requires that passwords be at least six characters long and changed at least every 30 days. This standard conforms to recommended information system guidelines.</p> | <p>The ability to access and record data and make changes to master files may not be appropriately restricted. Changing passwords more frequently and avoiding generic passwords reduces the risk of misuse. Misuse increases the risk of Metro asset loss, including revenues.</p>  | <ul style="list-style-type: none"> <li>Establish password controls that conform to Metro policy. This would include changing passwords every 30 days and requiring a password length of at least six characters. Generic passwords should not be used.</li> </ul>   |

| Issue   | Description   | Risk   | Recommended Action   |
|---|---|--|--|
| <p><b>Changes to Truck and Account Files</b></p> <p><i>Stronger controls and reviews would help ensure changes are appropriate.</i></p> | <p>During the year, scalehouse lead technicians were able to change truck and account files. Beginning in January 2002, the system administrator restricted the truck and account file access to the accounting department. This significantly improved controls over changes to these files. However, other actions can strengthen controls even further.</p> <p>Currently, scalehouse personnel request all changes to the truck and account files (for example, adding new vehicles or accounts). These requests for changes are submitted to the Accounting Services Division. These requests for changes are not logged at the scalehouse. The documentation retained by the Accounting Services Division does not always support each scalehouse request.</p> | <p>Metro is exposed to potential inaccuracies of customers being added and deleted and billing prices being inaccurate if all requested changes are made, or if changes are not accurately made. In a worst-case scenario, it exposes Metro to risk of loss through fraud.</p> | <ul style="list-style-type: none"> <li>• Document and maintain the requirement that master file access be restricted from scalehouse personnel. Truck and account file and transaction data access should be segregated and not given to the same individuals whenever possible.</li> <li>• Maintain a log of all requested changes to the master files at the scalehouse. Compare changes requested to changes made periodically to ensure accuracy and completeness.</li> <li>• Perform an independent review within the Regional Environmental Management Department to ensure the changes have been made completely and accurately. Run a query report of all master file changes made weekly or monthly to ensure only appropriate changes have been made.</li> </ul> |
| <p><b>Truck and Account Files</b></p> <p><i>Creating a system backup would better secure data.</i></p>                                  | <p>The truck and account file is currently maintained on the hard drive of one computer in accounting. No backup is maintained. This file includes all the master file information for the WeighMaster accounts and the vehicles.</p> <p>Metro's information system policies require that backup files be maintained to protect Metro in the event of a disaster, accidental file deletion or corruption of data.</p>   | <p>Loss of important account and truck information, exposing Metro to loss of all accounts receivable data and corresponding revenues.</p>   | <ul style="list-style-type: none"> <li>• Consider maintaining the truck and account information of Metro's data warehouse, on the M or T drives. This will more adequately secure the data. It will also facilitate adding other authorized individuals to access the data when the primary responsible individual is out of the office.</li> </ul>  |

| Issue   | Description   | Risk   | Recommended Action  |
|---|---|--|---|
| <p><b>Truck and Account Files</b></p> <p><i>Reports needed for detecting unauthorized or inappropriate changes.</i></p> | <p>Management reports are not currently set up in the WeighMaster system to report changes to the truck and account files. Such management reports of changes, when produced and reviewed, can significantly reduce the risk of unauthorized or inappropriate changes occurring.</p>  | <p>Increased risk that unauthorized or inappropriate changes to the truck and account files may occur, allowing misappropriations to go undetected.</p>                          | <ul style="list-style-type: none"> <li>Design appropriate system audit reports or queries, to help detect unauthorized or inappropriate changes to the master files. Such reports should include items such as customer account additions and deletions, changes in rates and changes in customer addresses. A supervisor should review these reports at least weekly.</li> </ul>   |
| <p><b>Transaction Data Files</b></p> <p><i>Create reports to help detect unauthorized or inappropriate changes.</i></p> | <p>Management reports are not currently set up in the WeighMaster system to report on changes to the transaction data. Such management reports of changes, when produced and reviewed, can significantly reduce the risk of unauthorized or inappropriate changes occurring.</p> <p>The system created 19 duplicate time transactions that were detected through data analysis during the audit. These are not always detected by the system, or at the site.</p> | <p>Increased risk that unauthorized or inappropriate changes may occur.</p> <p>Customers may be inaccurately billed, and revenues may not be accurately recorded and billed.</p> | <ul style="list-style-type: none"> <li>Create system management reports to help detect unauthorized or inappropriate changes to transaction data. Consider including edit reports, such as deleted transactions and manual changes in weights.</li> <li>Create a management report in the WeighMaster system that reports potential duplicate time transactions. This report should indicate identical vehicle numbers and check-in times.</li> </ul> |
| <p><b>Accounting Records</b></p> <p><i>Duties are not fully segregated.</i></p>   | <p>One individual in Accounting has user access to both the transaction data and the truck and accounts file.</p>   | <p>Risk of unauthorized changes to the data and account files.</p>   | <ul style="list-style-type: none"> <li>Perform a supervisory review of changes made to the PeopleSoft data. This can be simplified through the use of edit reports.</li> </ul>  |

## **Response to the Report**

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**METRO**

October 30, 2002

The Honorable Alexis Dow  
Metro Auditor  
600 NE Grand Avenue  
Portland, OR 97232

Dear Honorable Dow:

Thank you for the opportunity to review the report on the Metro Transfer Stations Revenue Controls Project. The report summarizes your office's review of operational efficiencies, information technology, cash and accounting procedures relevant to the transfer stations.

The revenue and information management recommendations contained in this report are sound, and will strengthen the efficiency and effectiveness of our waste transfer operations. We are pleased that the report recognizes the many progressive revenue control practices that have previously been implemented.

I will establish an implementation team made up of representatives from the three departments that are responsible for implementing the recommendations contained in the report. The majority of the recommendations are the responsibility of the Regional Environmental Management Department. The Information Technology Department will take the lead on continuity planning and integration with Metro's IT policies. The Administrative Services Department will be responsible for the recommendations related to accounting procedures. The implementation team will carefully review all of the recommendations and make sure that the implementation process remains on track.

Regarding the implementation timeline, many of the recommendations have already been substantially implemented. I expect that it will be possible to implement the remaining recommendations as described in the report by the end of this fiscal year. We need to review more closely the implications of the recommendation regarding the gate closure at Metro South Station. We will either implement this recommendation as stated or develop other practices that achieve the same objective but perhaps have less of an impact on traffic flow, operations, and customer service at the facility.

Again, thank you for the thorough review of our revenue controls. This review and report will prove to be extremely helpful in assuring that Metro has the proper revenue protections in place for our waste transfer operations.

Best regards,

A handwritten signature in black ink that reads "Mike Burton".

Mike Burton  
Executive Officer

cc: Peter Sandrock, Chief Operating Officer; Terry Petersen, REM Director; Jennifer Sims, ASD Director; David Biedermann, IT Director



METRO

# Metro Auditor Report Evaluation Form

Audit Report:  
Transfer Station Revenue Controls

**Fax... Write... Call...  
Help Us Serve Metro Better**

Our mission at the Office of the Metro Auditor is to assist and advise Metro in achieving honest, efficient management and full accountability to the public. We strive to provide Metro with accurate information, unbiased analysis and objective recommendations on how best to use public resources in support of the region's well-being.

Your feedback helps us do a better job. If you would please take a few minutes to fill out the following information for us, it will help us assess and improve our work.

Please rate the following elements of this report by checking the appropriate box.

|                        | <b>Too Little</b>        | <b>Just Right</b>        | <b>Too Much</b>          |
|------------------------|--------------------------|--------------------------|--------------------------|
| Background Information | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Details                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Length of Report       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Clarity of Writing     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Potential Impact       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Suggestions for our report format: \_\_\_\_\_

Suggestions for future studies: \_\_\_\_\_

Other comments, ideas, thoughts: \_\_\_\_\_

Name (optional): \_\_\_\_\_

**Thanks for taking the time to help us.  
Sincerely, Alexis Dow, CPA, Metro Auditor**