

Metro

Solid Waste and Recycling Department

Emergency Response Plan Adequate; Better Communication Needed

October 2006

A Report by the Office of the Auditor



METRO

PEOPLE PLACES

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Alexis Dow, CPA
Metro Auditor



METRO
AUDITOR
ALEXIS DOW, CPA

October 30, 2006

To the Metro Council and Metro-area citizens:

As part of the Metro Auditor risk assessment and work plan, we examined the Solid Waste and Recycling Department's organizational readiness and preparedness for preparing, mitigating, responding to and recovering from a major emergency situation.

Although the Emergency Management Plan developed by the Solid Waste and Recycling Department addresses possible risks that would be involved in a catastrophic event, additional steps can be taken to make the plan more complete, including:

- Ensure that transfer station and household hazardous waste personnel know the location and operation of shutoffs for electric, water, gas and storm-water valves and pumps.
- Regularly update emergency rosters listing contact information.
- Provide a brief overview of the Solid Waste and Recycling Emergency Management Plan to personnel at Metro transfer stations and household hazardous waste facilities as it relates to each of them.
- Consider alternate means of emergency communication, such as two-way radios or satellite phones, for use between transfer station employees and senior managers at Metro Regional Center.
- Develop a process for continuation of payroll.

The detailed recommendations resulting from this review are described on the following pages. The last section of the report presents the written response of Metro Chief Operating Officer Michael Jordan to each recommendation.

We very much appreciate the assistance provided by Solid Waste and Recycling Department and other personnel involved in the review. We also wish to recognize the many people at Metro who are actively committed to improving the efficiency and effectiveness of Metro operations.

Yours very truly,

A handwritten signature in cursive script that reads "Alexis Dow".

Alexis Dow, CPA
Metro Auditor

Auditor: Robert Snoddy

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Executive Summary

Catastrophic events, such as earthquakes, fires or severe weather disrupt the operations of thousands of organizations each year. An emergency management plan provides an organization with the foundation to survive and recover from the outcome of the event. A commitment to planning today will help support employees, customers, the community and the local economy tomorrow.

This review examines the Solid Waste and Recycling Department's organizational readiness and preparedness for preparing, mitigating, responding to and recovering from a major emergency situation.

The objectives were to determine if the Solid Waste and Recycling Department's Emergency Management Plan provides adequate procedures to:

- Recover from the initial emergency and restore basic operations.
- Ensure the continuity of organizational leadership and effective management of all personnel, functions and facilities.
- Notify employees of new work locations, telephone numbers and critical persons to contact – and of changes in the organization's leadership structure, duties and responsibilities.
- Notify customers of new business locations, telephone numbers and critical persons to contact within the organization.
- Notify vendors and service providers of alternate locations and critical persons to contact.

Additionally, we wanted to ensure that the Emergency Management Plan was documented and communicated to departmental personnel.

The review found that while the Solid Waste and Recycling Department's Emergency Management Plan is relatively thorough, improvements can be made. To address the key findings of our review, we recommend that:

- Transfer station personnel be advised of the location and operation procedures to shut off electric, water, gas and storm-water valves and pumps
- Emergency rosters listing contact information of local emergency managers within the region be updated regularly
- A brief overview of the Solid Waste and Recycling Department's Emergency Management Plan be communicated to all transfer station personnel as it relates to each of them
- Alternate means for emergency communication, such as two-way radios or satellite phones be considered for communication between transfer station personnel and senior managers at Metro Regional Center headquarters
- In the event of a catastrophic emergency, a process for payroll continuation for employees be developed

More detailed recommendations follow.

Summary of Recommendations

1. Develop a diagram of the layout of the transfer stations and household hazardous waste facilities with shut-off locations for electric, water, gas and storm-water valves and pumps. This will provide transfer station personnel with the knowledge of the location of shut-offs and will enable personnel to expedite the process of shutting off utilities and storm-water valves and pumps in the event of an emergency situation.
2. Rosters listing key management personnel and emergency responders should be updated annually or whenever changes occur. This will help ensure that names, titles and contact information are up to date.
3. A brief overview of the Solid Waste and Recycling Emergency Management Plan should be communicated to all staff at Metro transfer stations and household hazardous waste facilities as it relates to each of them. The purpose of communicating this information to personnel is to avoid confusion when an emergency situation arises and also enable personnel to become familiar with the roles, responsibilities and expectations required to recover from the emergency.
4. Two-way radios or satellite phones should be considered for emergency communication between senior managers of the Solid Waste and Recycling Department (at Metro Regional Center) and personnel at the transfer stations. Presently, alternate means of communication are not available if telephones using landlines or cell phones could not be utilized.
5. The Human Resources department should develop a contingency plan for payroll continuation in the event of a catastrophic event. Presently, procedures have not been developed to ensure paychecks will be generated in the event of a catastrophic emergency that renders the Metro Regional Center unusable.

Introduction and Background

How quickly Metro's Solid Waste and Recycling Department can get back to business after a fire, flood or catastrophic event often depends on emergency planning today. The lessons of the 1993 World Trade Center bombing, the 1995 Oklahoma City bombing and the September 11, 2001 terrorist attacks demonstrate the importance of being prepared.¹

According to the Ready Business section of the Department of Homeland Security website, preparedness becomes an even more critical issue when one considers that the number of declared major emergencies nearly doubled in the 1990s compared to the previous decade. Though each situation is unique, any organization can be better prepared if it plans carefully, puts emergency procedures in place, and practices for emergencies of all kinds.

Federal Emergency Management Administration (FEMA) Publication 325 states that each year, local officials from hundreds of communities are faced with the task of removing debris caused by natural disasters. In the past 20 years alone, over 700 major disasters have been declared by the President of the United States to facilitate Federal assistance to communities struck by hurricanes, tornadoes, floods, earthquakes, wild fires and other natural disasters.

FEMA Publication 325 also states that in some cases, debris clearance, removal and disposal actions can be accomplished quickly using community resources augmented by assistance from neighboring communities, state agencies and contractor resources. In many cases, however, the damage and debris are so extensive that a comprehensive debris clearance, removal and disposal management plan is required to efficiently and effectively control the operations.

An emergency management plan provides organizations with strategies to prepare for, mitigate, respond to and recover from a disaster or emergency and outlines post-emergency actions to ensure organizations can resume operations as soon as possible. The plan should detail how to respond to potential emergencies, whether natural or man-made.

Emergency management is a dynamic process; planning, though critical, is not the only component. Training, conducting drills, testing equipment and coordinating activities within the organization are other important functions, according to FEMA Publication 141.

In the event of a disaster, Metro's Solid Waste and Recycling Department is the agency responsible for ensuring that there is a contingency plan in place to provide guidance to community leaders in planning, mobilizing, organizing and controlling a large-scale debris and solid waste clearance, removal and disposal operation.

¹ U.S. Department of Homeland Security, Ready Business.

Metro's Solid Waste and Recycling Department

The Solid Waste and Recycling Department, a division of Metro, is responsible for regional management of solid waste² generated within the tri-county region (Clackamas, Multnomah and Washington counties) and the 25 cities of the Portland metropolitan area. From varied points of origin – single-family homes, offices, shopping malls, parks, construction sites, grocery stores, etc. – an array of materials are generated, collected, processed for recovery or disposal, and then transported to a disposal site.³ According to Metro's Solid Waste and Recycling Department, for calendar year 2004 the region's 1.54 million residents generated more than 2.62 million tons of solid waste, of which 1.39 million tons (53%) were recovered⁴ and 1.23 million tons (47%) were disposed of at landfills.

The Solid Waste and Recycling Department's responsibility in solid waste encompasses an array of facilities, services and programs supported by a \$71.2 million budget (including a contingency fund of \$13.7 million) and includes the following roles:⁵

- Service Provisions – Metro owns two transfer stations (Metro Central in Northwest Portland and Metro South in Oregon City); both are privately operated by Allied Waste, Inc. under contract, with Metro employees operating the scalehouse and collecting fees for disposal of solid waste. These two facilities serve public and private-sector waste haulers and process more than half of the Portland region's solid waste. Both facilities also provide Metro-staffed hazardous waste collection areas for household and certain small business hazardous waste disposal.
- Regulation – The Solid Waste and Recycling Department administers licenses and franchises to private processing and disposal facilities that manage solid waste generated within the region. Technical assistance, inspections and audits of private facilities are also a part of the Solid Waste and Recycling Department's regulatory role.
- Waste Reduction – The region's goal is to achieve a 64% waste reduction rate by the year 2009. To accomplish this goal, Solid Waste and Recycling Department personnel coordinate and support waste reduction and recycling programs, and provide a wide range of educational and informational services.
- Environmental Steward – The Solid Waste and Recycling Department investigates and cleans up illegal dumpsites throughout the region, oversees the sale of methane gas at the St. Johns Landfill (which closed in January 1991), and provides enhancement grants to communities that host solid waste facilities.

² As defined in ORS 459.005, "...all putrescible and non-putrescible wastes, including but not limited to garbage, rubbish, refuse, ashes, waste paper, and cardboard; sewage sludge, septic tank and cesspool pumpings or sludge; commercial, industrial, demolition and construction wastes; discarded or abandoned vehicles or parts thereof; discarded home and industrial appliances; manure, vegetable or animal solid and semisolid wastes, dead animals and others wastes."

³ Metro Regional Environmental Management Department Strategic Plan.

⁴ Material recovery means any process of obtaining from solid waste, by presegregation or otherwise, materials that still have useful physical or chemical properties and can be reused or recycled for some purpose (ORS 459.015).

⁵ Metro Regional Environmental Management Department Strategic Plan.

The primary goals and core objectives supported by the Solid Waste and Recycling Department include:⁶

- Reducing the amount and toxicity of solid waste generated and disposed
- Developing an efficient, economical and environmentally sound solid waste disposal system

Audit scope and objectives

This review examines the Solid Waste and Recycling Department’s organizational readiness and preparedness for preparing, mitigating, responding to and recovering from a major emergency situation.

FEMA Publication 141 defines an emergency as any unplanned event that can cause death(s) or significant injuries to employees, customers or the public; or that can shut down a business, disrupt operations, cause physical or environmental damage, or threaten the facility’s financial standing or public image. Numerous events can be classified as “emergencies,” including:

- Fire
- Hazardous materials incident
- Flood
- Hurricane
- Tornado
- Winter storm
- Earthquake
- Communications failure
- Radiological event
- Civil disturbance
- Explosion
- Terrorist activities

From this point forward, the term “emergency” is being used in this report because “disaster” lends itself to a preconceived notion of a large-scale event, usually a “natural disaster.” What might constitute a nuisance to a large industrial facility could be a “disaster” to a small business.⁷

The objective of this review was to determine if the Solid Waste and Recycling Department Emergency Management Plan meets FEMA Emergency Management Guide for Business and Industry guidelines and provides adequate procedures to:⁸

- **Recover** from the initial emergency and **restore** basic operations.
- **Ensure the continuity** of organizational leadership and effective management of all personnel, functions and facilities.

⁶ Metro Regional Environmental Management Department Strategic Plan.

⁷ FEMA Emergency Management Guide for Business and Industry – A Step-by-Step Approach to Emergency Planning, Response and Recovery for Companies of All Sizes.

⁸ Disaster Recovery & Business Resumption Planning, Dana Turner, Bankers Online.

- **Notify employees** of new work locations, telephone numbers and critical persons to contact – and of changes in the organization’s leadership structure, duties and responsibilities.
- **Notify customers** of new business locations, telephone numbers, and of critical persons to contact within the organization.
- **Notify vendors and service providers** of alternate locations and critical persons to contact.

Additionally, we wanted to ensure that Metro’s Solid Waste and Recycling Department Emergency Management Plan was documented and communicated to departmental personnel.

This review was conducted in accordance with government auditing standards. These standards require that we review internal controls and report significant deficiencies that are relevant to the objectives. The Solid Waste and Recycling Department has many effective controls and procedures in place to ensure that solid waste operations will continue after an emergency event. Any significant internal control deficiencies found during the course of the review are described in the report.

Components of an Emergency Management Plan

Generally, organizations should have both an emergency management plan and a business continuity plan. The emergency management plan should include a hazard analysis and describe the command structure and critical functions such as communications, life safety, alert and warning, resource management, debris management and financial management. The emergency management plan describes how the department will be organized after an emergency event, including performing activities critical to saving lives, stabilizing the situation, protecting property and working with others to support response operations. The business continuity plan includes identification and prioritization of essential functions and critical services, alternate operation locations and facilities, and delegation of and succession of authority.⁹

We reviewed the Metro Solid Waste and Recycling Emergency Management Plan and noted that it contains both an emergency management and business continuity plan. Additionally, the Metro Risk Management Department has prepared the Metro Emergency Operations Plan, which provides a broad framework within which Metro management and staff can alter routine organizational responsibilities and work duties to meet the extraordinary requirements created by an emergency.

Combined, Metro’s Emergency Operations Plan and the Solid Waste and Recycling Department’s Emergency Management Plan provide for a comprehensive action plan which will assist in the rapid response, mitigation and recovery of solid waste operations and debris removal after a crisis situation.

What will likely happen during an emergency?

The key to successful recovery from a catastrophic event is to have a plan in place before the event occurs – a set of simple, effective guidelines and procedures for employees to follow.

Just as a ship without a rudder is at the mercy of the tides, an organization without an emergency management plan is at the mercy of events.

~ Dana Turner

According to Dana Turner, who wrote the article *Disaster Recovery & Business Resumption Planning*, human beings often make inappropriate decisions during emergency situations, with confusion being the universal common denominator. The havoc and destruction caused by a major emergency creates conditions that make confusion inevitable. If the organization has a plan for coping with most emergencies already prepared *and* shared with the staff, the organization stands a better chance of surviving and rapidly recovering from any emergency. Such contingency planning helps an organization respond to a major emergency situation that follows this logic:

- It is not a matter of if, *but when*, a major emergency situation will occur.
- The effects of an emergency will likely exceed the community’s and the organization’s response capabilities.

⁹ Office of Consolidated Emergency Management, Washington County, OR.

- The evolution of events following an emergency will be predictable and cyclic.
- The community and the organization will likely be without outside help, including emergency service agencies, vendors, and service providers, for 11-14 days:
 - Basic emergency and transportation services, such as police, fire and medical assistance, and both public and private forms of transportation may be overwhelmed. Calls for service may not be answered – and priorities will likely involve life threatening or life saving situations only.
 - Food and survival supply deliveries may be interrupted.
 - Water supplies and sanitation may not be fully functional due to broken, cracked, or clogged pipes, resulting in the reduction or elimination of water flow.
 - Electric power could be interrupted. Power lines may be destroyed or overloaded, causing electrical-dependent devices to become unusable.
 - Delivery of products and services by vendors may be delayed. The geographical area affected by the disaster may be closed to outside traffic, or the vendors may be overwhelmed with other clients who have also been affected by the emergency situation.
 - Telecommunication services could be interrupted due to people trying to call into or out of the affected area and overloading telephone-switching stations.
 - Freeways, highways and surface streets may be damaged or gridlocked by people trying to get into or out of the affected area.
- Traditional roles and routine activities within the community may be temporarily suspended, causing the reassignment of personnel to fulfill necessary roles and functions, with temporary powers, duties and responsibilities.
- The organization may not be able to recover or restore all functions at the same time.
- Approximately 65% of the organization's staff will likely be unavailable during the first three days following a major catastrophic event.
- Personnel, including executive and senior management, may be unavailable.

**Emergency
Management and
Business
Continuity Plan
goals**

The goals of an Emergency Management and Business Continuity Plan are to:¹⁰

- Eliminate or reduce the potential for injuries or loss of human life, damage to facilities and loss of assets. This requires a comprehensive assessment of each department within the organization to ensure that appropriate steps have been taken to:
 - Minimize disruption of services to the organization and customers
 - Minimize financial loss
 - Provide for timely resumption of operations
 - Reduce or limit exposure to potential liability claims filed against the organization and its employees.
- Implement the provisions of the Emergency Management and Business Continuity Plan to stabilize the effects of the emergency situation, allowing for appropriate assessment and the beginning of recovery efforts. The goal of this step is to minimize the effects of the emergency, provide for the fastest possible recovery, and expedite getting the solid waste and debris removal functions operating.

¹⁰ Disaster Recovery & Business Resumption Planning, Dana Turner, Bankers Online.

METRO COMPARISON TO FEMA GUIDELINES FOR EMERGENCY MANAGEMENT

According to the Federal Emergency Management Administration (FEMA) Emergency Management Guide for Business and Industry, there are four steps in the process of planning for and recovering from major emergencies:

- Establish a planning team
- Analyze organizational capabilities and hazards
- Develop the plan
- Implement the plan

Step 1 - Establish a planning team

An individual or group should be selected to develop and prepare the department’s emergency management plan.

FEMA Guidelines	Metro Solid Waste and Recycling Department Action
<p>1. An individual or group should be assigned to develop the emergency management plan for the department. Involving a group of people is better because:</p> <ul style="list-style-type: none"> • It encourages participation and gets more people interested in the process. • It increases the amount of time and energy participants are able to provide. • It enhances the visibility and stature of the planning process. • It provides for a broad perspective on the issues. 	<p>A planning group consisting of Solid Waste and Recycling personnel has been established. This group oversees the development and updating of the department’s emergency management plan.</p>

Metro’s Solid Waste and Recycling Department also oversees and acts as the lead agency for the Regional Disaster Debris Management Plan. The Regional Disaster Debris Management Plan is a component of the Regional Emergency Management Plan developed by the Regional Emergency Management Group. The Regional Emergency Management Group is comprised of elected officials and emergency managers from the Metro region’s cities and counties, representatives from Columbia County, Oregon, and Clark County, Washington, as well as Metro staff. The Regional Emergency Management Group was created by intergovernmental agreement in 1994, and as a part of that agreement a Regional Emergency Management Work Plan was created. The Regional Emergency Management Work Plan identifies 21 elements that have regional relevance to emergency managers, including removal of debris after an emergency situation.

The Regional Disaster Debris Management Plan’s purpose is to ensure that the metropolitan region is prepared to deal with the removal and disposition of debris and waste generated in the event of a large-scale catastrophe.

The Regional Disaster Debris Management Plan is based on five principles:

- Manage disaster debris according to the state-mandated hierarchy describing solid waste practices:
 - Reduce
 - Reuse
 - Recycle
 - Recover
 - Landfill
- Ensure debris management efforts are coordinated and cooperative throughout the region.
- Use local resources for collection and disposal.
- Restore normal garbage service as quickly as possible.
- Ensure accurate and organized debris and expense tracking systems.

Step 2 - Analyze organizational capabilities and hazards

This step entails gathering information about current organizational capabilities, possible hazards and emergencies, and then conducting an analysis to determine the organization’s readiness to handle emergencies.¹¹

FEMA Guidelines	Metro Solid Waste and Recycling Department Action
1. Identify potential emergencies or risks that could affect the organization and its operations.	1. In developing the Emergency Preparedness Plan, the Solid Waste and Recycling Department, along with Allied Waste, Inc. (the vendor who performs operations at the transfer stations), have identified potential emergencies and prepared contingency plans for: <ul style="list-style-type: none"> • fire • severe weather (including floods) • earthquakes • equipment failure • hazardous material spill/release • hostile, violent or threatening person on site • utility outages

¹¹ FEMA Emergency Management Guide for Business and Industry – A Step-by-Step Approach to Emergency Planning, Response and Recovery for Companies of All Sizes.

FEMA Guidelines	Metro Solid Waste and Recycling Department Action
<p>2. Identify critical products, services and operations:</p> <ul style="list-style-type: none"> a) Company products and services and the facilities and equipment needed to produce them b) Lifeline services such as electrical power, water, sewer or gas c) Operations, equipment and personnel vital to the continued functioning of the facility. 	<p>2. Critical operational facilities and equipment necessary for the function of the solid waste operation have been identified, including:</p> <ul style="list-style-type: none"> a) Alternate transfer stations, landfill locations and points of contact for personnel at these sites are noted within the Emergency Management Plan. b) Metro transfer stations are equipped with diesel-powered standby generators, which generate electrical power to sustain the operation. In the event of a power failure, the process building is supplied with one-third of the interior lights. Pumps used for removal of storm-water and freeze protection mechanisms remain operational. A supply of fresh drinking water is kept on-site. The office utilized by Allied Waste at the Metro Central facility is the only building on-site with a gas line. c) Operations and equipment vital to the continued functioning of the facility have been identified and are noted within the Emergency Management Plan. Key senior level personnel within the Metro Solid Waste and Recycling Department and Allied Waste operations managers have been identified and contact information is noted within the Emergency Management Plan.

In addition to conforming to the FEMA Guidelines noted above, the Solid Waste and Recycling Department has conducted additional analysis to determine organizational capabilities, as follows:

- A procedure is in place if Metro transfer stations are unusable. The Solid Waste and Recycling Department has developed a contingency plan if Metro Central or South are unable to be used. If one or both of Metro’s transfer stations are incapacitated, Metro’s Solid Waste and Recycling Department has the authority under Metro Code 5.05 to direct haulers to other transfer stations in and out of the region.

- In the event of equipment failure, options have been identified. The waste handling and processing system has been designed with redundant features that provide for continued operation at the same waste throughput or at some reduced rate. Examples of these redundant features are:
 - One compactor has sufficient capacity to process the entire station design capacity of waste throughput if worked continuously. The second and third compactors therefore are not always necessary.
 - Allied Waste will supply onsite a back-up front loader, in the event the primary front loader needs repair. In the unlikely event both the primary and backup front loaders need repair, arrangements will be made with local equipment suppliers to provide a replacement front loader.
- In the event of a power outage, fee collection procedures have been developed. Metro transfer stations have identified and implemented procedures to undertake in the event of a power outage. In addition, personnel have been trained on preparing manual receipts, recording funds associated with these receipts, and safeguarding those funds.
- A procedure for communicating with the public has been developed. Metro's Solid Waste and Recycling Department has developed a plan for disseminating information to the public in the event of a major emergency. This includes posting information on the Metro website, communicating with local media and providing a special hotline telephone number for citizens to contact Metro directly. In most cases, local jurisdictions will handle communications and correspondence with the public in their area.
- A process for keeping solid waste haulers informed is in place. In the event of an incident which results in the temporary closure of either Metro transfer station, Solid Waste and Recycling Department personnel have put into place Hauler Incident Notification Procedures. The procedures direct Solid Waste and Recycling Department staff to contact local haulers and inform them that either one or both of the transfer stations are temporarily closed. Staff provides the haulers with a hotline number, which they can then call to check on the status of the transfer station.
- Metro transfer station capacities have been calculated. A study was prepared in 2000 forecasting the capacity of Metro South, Metro Central and Forest Grove Transfer Stations to store waste on site (see summary below).¹² The analysis evaluates the available floor and storage space that can be used on-site, including all available drop boxes and transfer trailers. Based on this study, the collection and acceptance of waste would result in the Forest Grove Transfer Station reaching its capacity in 1.3 days. Metro South would reach its capacity in 2.7 days and Metro Central would reach capacity in 6.8 days of operation. *Note that storage capacity will vary due to the nature of the emergency event.*

¹² Waste Storage and Handling Capacity Analysis for the Disaster Debris Management Planning Update 2000.

Scenario: Haulers are diverted from other transfer stations and compactors are functional.

Site	Storage Means	Capacity (tons)	Average Daily Waste Delivered	Equivalent Amount in Days
Forest Grove	Tipping Floor/Trailers, etc.	257	204	1.3
Metro South	Pit + Floor Space	3,694	1,245	2.7
Metro Central	Tipping Floor Space	14,810	1,274	6.8
Haulers	Trucks/Trailers/Drop Boxes	3,115		1.1
Total		21,876	2,723	8.0

For calendar year 2005, total combined tonnage at these facilities declined by 32% (from when the study was initially conducted in 2000). As a result of this decline in tonnage, capacity if needed for temporary storage of debris at Metro transfer stations has increased.

- Temporary debris and rubble sites are continually being located. The Solid Waste and Recycling Department and members of the Regional Disaster Debris Management Committee are continually looking for alternate temporary debris storage sites in the event the transfer stations do not have capacity to handle the excess debris. There are certain stipulations for these temporary sites as they should not be located near hospitals, schools or sensitive areas which could be impacted by the temporary storage of debris. According to the Metro Engineering and Environmental Services Manager, if these temporary sites are utilized for the interim storage of debris, he will insure that the site is photographed and proper documentation has been obtained before debris is allowed to be stored on site. The purpose of this is to reduce Metro’s liability by performing a thorough review of the area prior to use.
- Alternate transportation routes to the Columbia Ridge Landfill have been identified. A report was prepared in 2003 addressing alternate transportation routes and dealt with both the temporary closure of I-84 and the closure of all roads leading to the Columbia Ridge Landfill.¹³ In the event of temporary closure of I-84, two alternate routes to this landfill have been identified. If all roads leading to the Columbia Ridge Landfill are impassable, alternate putrescible waste landfills within the area have been identified for use.
- The amount of hazardous material per household that could be generated has been estimated. In a report prepared in 1999, a study was conducted which predicts the amount of household hazardous waste that would be generated following a catastrophic event.¹⁴ Three primary factors were identified in the report, including:

¹³ Contingency Plan for Transporting Waste from Metro Transfer Stations.

¹⁴ Metro Hazardous Waste Program, SOP #34 – Disaster HHW Collection Services.

- The scope of the emergency will influence the number of homes affected.
- The type and severity of the emergency will influence the amount of hazardous waste generated by each home.
- The manner in which wastes will be collected will influence the total volume of hazardous waste that will be handled by Household Hazardous Waste personnel.
- A process for household hazardous waste acceptance has been developed. In emergency situations resulting in a major catastrophe, a process for the acceptance or temporary suspension of collection of hazardous materials submitted by the public has been developed. These options include:
 - Promoting the availability of the permanent household hazardous waste facilities at the transfer stations
 - “Milk runs” to pick up hazardous waste materials left at debris collection sites
 - Providing hazardous waste collection at debris collection sites
 - Door-to-door hazardous waste collection, either by appointment or curbside pickup, of materials throughout an area.
 - Temporarily suspending the acceptance of household hazardous waste from the public until the facility is able to safely accept and process the waste.

Step 3 - Develop the plan In the development process of the emergency management plan, challenges are identified, activities are prioritized, procedures are written, training schedules are developed and a formal plan is prepared.¹⁵

FEMA Guidelines	Metro Solid Waste and Recycling Department Action
1. Emergency response procedures should be developed which spell out how the facility will respond to emergencies.	Most procedures and practices are in place to protect employees, customers and assets. Procedures for incidents such as those requiring evacuation of transfer stations, hazardous materials spills, bomb threats, and explosives handling were on file and are applicable to both transfer station operations.

¹⁵ FEMA Emergency Management Guide for Business and Industry – A Step-by-Step Approach to Emergency Planning, Response and Recovery for Companies of All Sizes.

FEMA Guidelines	Metro Solid Waste and Recycling Department Action
<p>2. The emergency management plan should contain support documents, that could be needed in an emergency situation, including:</p> <p>a) Emergency call lists</p> <p>b) Building and site maps that indicate:</p> <ul style="list-style-type: none"> • Utility shutoffs, including electric, water and gas • Storm drains • Floor plans of each building, including exits, stairways, designated escape routes and restricted areas. 	<p>a) A roster of senior personnel within the Solid Waste and Recycling Department and of management personnel at the transfer stations was on file. Listings of both internal and external contacts were in file; however, one listing of local emergency managers in cities within Oregon was outdated.</p> <p>b) Transfer stations had maps indicating the storm drain locations, floor plans and a designated evacuation and meeting area after an incident. The site maps did not indicate where the shutoffs for electric, water, gas, valves and pumps were located. Procedures for the shut-off of electrical power, pumps and valves for the Metro South Household Hazardous Waste facility were on file; however, we were unable to locate these same procedures for the Metro Central facility.</p>
<p>3. Review the Emergency Action Plan, conduct training and revise.</p>	<p>In April 2003, a statewide earthquake exercise took place. The purpose of the exercise was to test the use of a regional debris coordination center in order to improve coordinated regional planning and communication with solid waste haulers, emergency response agencies and emergency managers and improve coordinated planning.</p>
<p>4. Distribute the final emergency management plan to:</p> <ul style="list-style-type: none"> • The chief executive and senior managers • Key members of the organization's emergency response team • Retain a copy at a central location. 	<p>The Emergency Management Plan specific to the Solid Waste and Recycling Department is available to senior managers within the department. A copy is also retained at the Metro Regional Center.</p>

In addition to steps taken to follow the FEMA guidelines noted above, the Solid Waste and Recycling Department has taken additional steps as noted below:

- Alternate command center locations have been identified. In the event of an emergency which would render the Metro Regional Center unusable, the Oregon Convention Center and the Oregon Zoo have been identified as alternate command centers.

- Means of communication within the transfer station have been established. Allied Waste, Inc. and the Solid Waste and Recycling Department have developed a communication and alarm system capable of initiating the emergency response procedures and of enabling rapid evacuation of affected areas within the transfer station. The internal communication and alarm system consists of two-way short range radios, telephones, alarms and cell phones.

Recommendations

1. Develop a diagram of the layout of the transfer stations and household hazardous waste facilities, indicating electric, water and gas valves and pump shut-off locations. Procedures for shutting off electrical power, pumps and valves for the Metro Central facility should be developed and communicated to the staff. Moreover, a walk-through with personnel at both transfer stations should be performed to provide awareness of the location of the electric, water and gas valves and pumps and knowledge of how to safely shut off these items. In the event of a catastrophic event, transfer station personnel should know the location and procedures involved to shut off utilities for personal safety and to reduce the opportunity for damage to Metro property.
2. Rosters listing key management personnel and emergency responders should be updated whenever changes occur. An updated listing of local emergency managers for cities and counties within the state of Oregon should be obtained from the Office of Consolidated Emergency Management and filed with the Emergency Management Plan. Revision dates should be added to all documents whenever changes or updates are made to the Solid Waste and Recycling Emergency Preparedness Plan. This will assist in ensuring that contact information is current and up to date.

**Step 4 -
Implement the
plan**

Implementation means more than simply exercising the plan during an emergency. It means acting on recommendations made during the analysis and recommendation phases, integrating the plan into the organization’s operations, training employees and evaluating the plan.¹⁶

In an emergency, all personnel should know:
1. What is my role?
2. Where should I go?
~ FEMA Publication 141

FEMA Guidelines	Metro Solid Waste and Recycling Department Action
1. Integrate the Emergency Preparedness Plan into the organization’s operations.	Although Metro’s Solid Waste and Recycling Department personnel have taken a pro-active approach in preparing the emergency management plan, discussion with transfer station personnel revealed that the emergency management plan has not been adequately communicated to them and the roles expected of them during emergency situations have not been defined.

¹⁶ FEMA Emergency Management Guide for Business and Industry – A Step-by-Step Approach to Emergency Planning, Response and Recovery for Companies of All Sizes.

FEMA Guidelines	Metro Solid Waste and Recycling Department Action
<p>2. Evaluate and modify the plan – a formal audit of the plan should be conducted at least annually.</p>	<p>The Emergency Management Plan is continually being improved and updated as new information or improved processes are recognized.</p>
<p>3. Identify internal resources and capabilities – this includes resources and capabilities that could be needed in an emergency, such as:</p> <ul style="list-style-type: none"> a) Personnel – individuals trained in hazardous materials handling or community relations personnel to handle media requests b) Equipment – communications equipment, first aid supplies, emergency supplies (including food and water) c) Facilities – alternate operating centers, media briefing areas and employee evacuation meeting areas d) Backup systems – arrangements with other facilities to provide for payroll continuation, information system support or emergency power 	<p>The emergency management plan addresses internal resources and capabilities as follows:</p> <ul style="list-style-type: none"> a) Within the plan is a roster of Allied Waste employees who are hazardous material qualified. A community relation’s point of contact within the Solid Waste and Recycling Department has been identified. b) Communications equipment, consisting of two-way radios are available with a limited range at the transfer stations. Transfer stations and household hazardous waste sites have first aid supplies available. Water and food sources are available at both transfer stations. c) Alternate transfer stations, landfill sites and command centers have been identified. <p>Procedures and guidelines have been developed to follow when communicating with the media.</p> <p>Employee evacuation meeting sites have been identified and are listed on diagram maps at each facility.</p> <ul style="list-style-type: none"> d) Procedures for payroll continuation are not in place in the event of an emergency that would render the Metro Regional Center unusable. <p>Computer servers at the Solid Waste Transfer Stations could be utilized if the computer system at Metro Regional Center were unusable.</p>
<p>4. Identify external resources that could be needed in an emergency, such as:</p> <ul style="list-style-type: none"> • Emergency management office • Fire department • Emergency medical services (ambulance) • Hospitals • Local and state police 	<p>External resources have been identified; however, the local emergency managers list on file was outdated.</p> <p>Transfer stations have a list of fire department, ambulance, police and hospital numbers posted next to the telephones.</p>

Emergency planning must become part of the corporate culture. Opportunities for building awareness, education, training of personnel and testing of procedures involve all levels of management and make emergency management part of what personnel do on a day-to-day basis.

Recommendations

3. A brief overview of the Solid Waste and Recycling Emergency Preparedness Plan should be communicated to all staff at Metro transfer stations and household hazardous waste facilities as it relates to them. The purpose of communicating this information to personnel is to avoid confusion when an emergency situation arises and also enable personnel to become familiar with their roles and requirements in the event of activation of the Emergency Management Plan. Included in the communication should be the types of emergencies that could affect each facility and management's plans on continuing operations after an emergency situation. An added benefit of discussing the plan with personnel is to receive their input and suggestions on how to improve the plan.
4. Consideration should be given to purchasing wireless communication devices, such as two-way radios or satellite phones, which could be used to communicate between Solid Waste and Recycling Department management (located at Metro Regional Center) and personnel at transfer stations. In the event of a major catastrophe, landline-based and cellular telephones may be unusable, and the use of two-way radios or satellite phones could allow ongoing communication.
5. The Human Resources Department should develop a contingency plan for payroll processing in the event of a catastrophic emergency that would render the Metro Regional Center unusable. Presently, there is not a clearly defined process to ensure that payroll would continue for employees who work during and after an emergency.

Response to the Report

Metropolitan Exposition Recreation Commission

Audit: Emergency Response Plan Adequate; Better Communication Needed
Date: October 2006

AUDIT RESPONSE

Recommendation 1

Develop a diagram of the layout of the transfer stations and the household hazardous waste facilities with locations of electric, water, gas, valves and pump shut-off locations.

Agree

Yes

No (specify reasons for disagreement)

What action will be taken (if any)?

The two transfer station sites will be surveyed and existing site drawings will be reviewed to consolidate the locations of the electric, water and gas valves and pump shut-off locations for placement on a drawing that can be located at each site.

Who will take action?

The review will be completed by our site contractor (BFI) and a SW staff engineer (Bob McMillan).

When will action be accomplished?

April 2007.

Follow-up necessary to correct or prevent reoccurrence.

The site drawing will be reviewed and updated as necessary, as a part of each construction project. In addition, the drawing will become a part of the annual Emergency Response Training for the appropriate site personnel.

Audit: Emergency Response Plan Adequate; Better Communication Needed

Date: October 2006

AUDIT RESPONSE

Recommendation 2

Rosters listing key management personnel and emergency responders should be updated annually or whenever changes occur.

Agree

Yes

No (specify reasons for disagreement)

What action will be taken (if any)?

The Disaster Debris Management Plan will contain the Local Emergency Manager phone list, which is a statewide roster.

Who will take action?

The Waste Reduction Planning section (Scott Klag), will include the roster.

When will action be accomplished?

The statewide roster will be included in the plan by November 2006.

Follow-up necessary to correct or prevent reoccurrence.

The roster is updated periodically on the Oregon Emergency Management web site, which we will download on an annual basis. The web site is:
http://www.oregon.gov/OOHS/OEM/docs/plan_train/locals_list.pdf

Audit: Emergency Response Plan Adequate; Better Communication Needed
Date: October 2006

AUDIT RESPONSE

Recommendation 3

A brief overview of the Solid Waste and Recycling Emergency Management Plan should be communicated to all staff at Metro transfer stations and household hazardous waste facilities as it relates to each of them.

Agree

Yes

No (specify reasons for disagreement)

What action will be taken (if any)?

In response to the suggestion that transfer station staff receive a brief overview of the emergency management plan, we will provide training on a yearly basis that communicates to staff how the transfer stations and HW facilities will be involved in a local emergency.

Who will take action?

The SW Department's Safety Analyst will be responsible for developing and implementing the training.

When will action be accomplished?

Training is approximately 75% complete and will be completed by March 2007.

Follow-up necessary to correct or prevent reoccurrence.

Training is scheduled on a yearly basis.

Audit: Emergency Response Plan Adequate; Better Communication Needed
Date: October 2006

AUDIT RESPONSE

Recommendation 4

Two-way radios or satellite phones should be considered for emergency communication between senior managers of the Solid Waste and Recycling Department (at Metro Regional Center) and personnel at the transfer stations.

Agree

Yes

No (specify reasons for disagreement)

What action will be taken (if any)?

We will procure four global satellite phones plus accessories. The cost will be approximately \$1,000 per phone with annual service fees of approximately \$500 per phone. Two of the phones will be based at the Metro Central and South Transfer Station, one will be installed at Metro Regional Center, and the other phone will be installed in the Transfer Station Operations Supervisor's automobile.

Who will take action?

SW staff will purchase the phones.

When will action be accomplished?

January 2007.

Follow-up necessary to correct or prevent reoccurrence.

Not applicable.

Audit: Emergency Response Plan Adequate; Better Communication Needed

Date: October 2006

AUDIT RESPONSE

Recommendation 5

The Human Resources department should develop a contingency plan for payroll continuation in the event of a catastrophic emergency.

Agree

Yes

No (specify reasons for disagreement)

What action will be taken (if any)?

Contact other local agencies and inquire about their payroll contingency plans. Meet with internal IT staff to determine electronic options. Develop a contingency plan for payroll continuation in the event of a catastrophic emergency.

Who will take action?

Payroll Manager.

When will action be accomplished?

The action will be accomplished by the end of 2007.

Follow-up necessary to correct or prevent reoccurrence.



Metro Auditor Report Evaluation Form

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Name of Audit Report: Emergency Response Plan Adequate; Better Communication Needed, October 2006

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

	Too Little	Just Right	Too Much
Background Information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Length of Report	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clarity of Writing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Suggestions for our report format: _____

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