METRO

Metro's Natural Areas:
Maintenance strategy needed

April 2012

A Report by the Office of the Auditor

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for Auditing

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METRO

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MEMORANDUM

April 19, 2012

To: Tom Hughes, Council President
Shirley Craddick, Councilor, District 1
Carlotta Collette, Councilor, District 2
Carl Hosticka, Councilor, District 3
Kathryn Harrington, Councilor, District 4
Rex Burkholder, Councilor, District 5
Barbara Roberts, Councilor, District 6

From: Suzanne Flynn, Metro Auditor

Re: Audit of Natural Areas Maintenance

The attached report covers our audit of Metro's program to maintain natural areas. This audit was included in our FY 2011-2012 Audit Schedule.

We conducted this audit to determine the strength of Metro's program to maintain the land it has acquired in the last 15 years. We studied three new nature parks in depth and also reviewed the overall strength of the program. Based upon our findings, we recommend that now is the time to make adjustments and strengthen the program. Metro needs to have a strategy and be able to prioritize its activities based upon its available resources.

We have discussed our findings and recommendations with Martha Bennett, COO; Scott Robinson, Deputy COO; Jim Desmond, Director, Sustainability Center; Paul Slyman, Director, Parks and Environmental Services and Kathleen Brennan-Hunter, Manager, Natural Areas Program. My office will schedule a formal follow-up to this audit within 1-2 years. We would like to acknowledge and thank management and staff in the Departments who assisted us in completing this audit.

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Summary

Over the last 15 years, Metro raised $363 million for land acquisition and park development, and it currently owns over 15,000 acres of land. Investments were based on a regional plan to create a system of natural areas and parks. According to that plan, a source of funding would be secured to maintain the land and Metro would work with local jurisdictions to maintain it either in a natural unimproved state (i.e. natural area) or as publicly accessible land (i.e. park). While Metro has been successful in making significant land purchases, it has not been as successful in securing stable funding for maintenance or transferring operational responsibility to local jurisdictions.

The purpose of this audit was to determine the strengths and weaknesses of the different approaches Metro had taken in land management. We studied three new nature parks in depth and also reviewed the overall strength of the program. We found areas where Metro's land management system could be improved. The current program has evolved over time as Metro's experience grew. Metro is close to reaching the goals it established for land acquisition and now is a good time to reevaluate how it will maintain the land.

More clarity is needed to strategically plan what maintenance will be done, who will do it and how it will be funded. Metro has started to create some plans to guide the maintenance of its properties. These plans are not yet complete enough to guide the decisions that must be made to match resources to actions. Metro does not have a single overarching strategy. Metro needs a land management system that includes rigorous planning, clear standards, documentation and performance measures.

Metro employees in the two departments responsible for land management and maintenance have differing skills and expertise. Lacking clarity, employees relied on their own initiative and prior experience. This created confusion about roles and responsibilities and resulted in inconsistent maintenance between sites.

We reviewed expenditures and plans for three groups of properties that were converted to nature parks. Metro used a different strategy to maintain each park. There were clear differences in the time and cost to reach Metro's goals for each park. Without strong systems to monitor these strategies, Metro may not be able to learn from its experience.

Maintenance needs and associated costs are increasing. This is due in part to the increasing acreage obtained by Metro. However, Metro improvements and maintenance efforts also affected costs. Priorities changed over time, but clear standards were not developed for maintenance work. As a result, it was difficult to assess the effectiveness of maintenance and determine if Metro was making best use of available resources.

The audit recommends that Metro develop a system to prioritize areas for maintenance based upon available funding. It should also improve the organization of land management responsibilities.

Background

In 1992, the Metro Council approved the Metropolitan Greenspaces Master Plan to acquire and protect a regional system of "natural areas, open space, trails and greenways for wildlife and people." The plan laid out the vision, goals and organizational framework to develop the system. Almost 20 years later, Metro has acquired about 15,000 acres of land through transfers from other governments and two bond measures that generated $363 million.

Maintaining assets is an important and sometimes overlooked part of ensuring effective and efficient government programs. When governments invest in acquiring or building new things, such as roads, parks, computer systems and facilities, it is important to plan and budget for maintenance in order to get the most value from these assets. At Metro, maintenance is defined as "a minor alteration, ordinary repair or effort necessary in order to preserve or repair an asset due to normal wear and tear."

Metro's land includes both developed and undeveloped properties. Developed properties include parks, cemeteries, boat ramps and trails. Undeveloped lands are typically called natural areas and were purchased to protect plant and animal habitat. Although Metro's developed facilities such as Blue Lake Regional Park and Lone Fir Cemetery are generally more widely known than its natural areas, the natural areas account for the majority (72%) of Metro's land holdings.

Over the years, Metro has used a variety of terms to describe its land holdings. To simplify the variety of names we will use "parks" to refer to publicly accessible land and "natural areas" to refer to land that is not formally open to the public. We will also use the term "land management" to describe all the work that is performed after a property is purchased. This includes stabilization, maintenance, restoration and operations.

Metro faces two challenges in maintaining its assets. One is managing maintenance work in an efficient and effective way, and the other is funding the work. Currently, Metro manages about 90% of the land it owns. The other 10% is managed by other governments in the region through intergovernmental agreements. In at least two cases, Metro paid other governments to manage Metro's land.

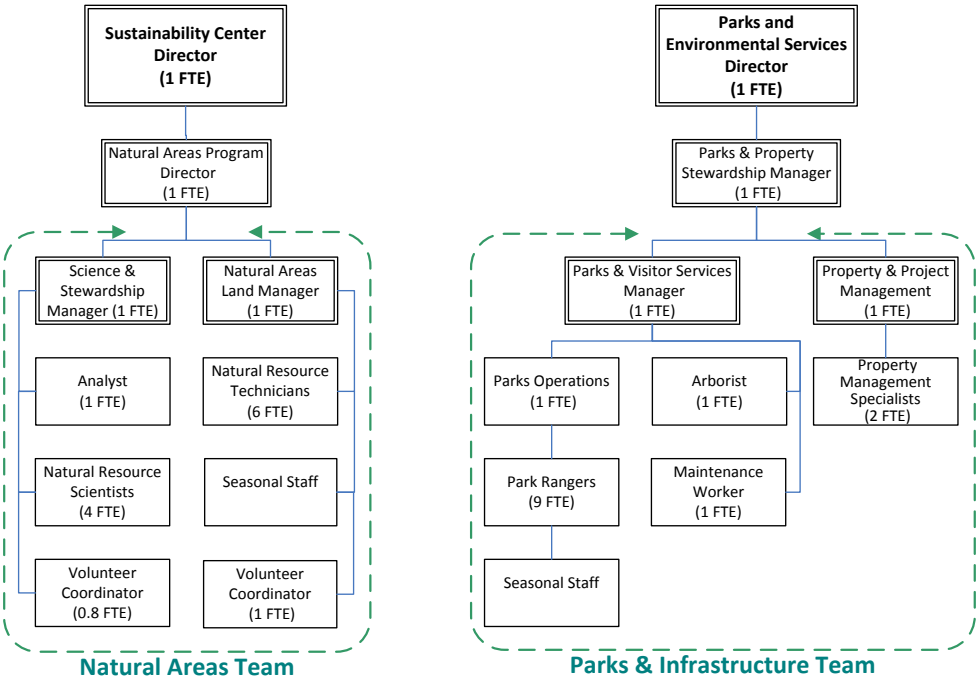
Maintenance needs vary between natural areas and parks. Natural areas typically have very few, if any, structures that need to be maintained. Employees maintain plants and prevent unauthorized use of the land. Their work includes removing weeds, marking property boundaries and dealing with illegal trash dumping and camping.

In contrast, parks usually have built assets such as restrooms, trails and signage that have to be maintained. Employees repair and clean facilities that are used by the public. They also deal with safety hazards such as dead trees that may pose a risk to park users.

Land management responsibilities, which include maintenance, are shared by two departments and four divisions at Metro. The Sustainability Center employs the natural resource scientists and technicians that focus on natural area management. Within the Sustainability Center, land management is done by two units, Science and Stewardship and Natural Areas Land Management. Although the two units have separate managers, they operate as one team for land management purposes. The team is comprised of two managers, four scientists, six technicians, seasonal employees, two volunteer coordinators and one analyst.

The Parks and Environmental Services department employs park rangers and property managers who primarily maintain parks. Within the department, work is divided between two units: Parks Visitor Services and Property and Project Management. In total, there are three managers, nine park rangers, a ranger supervisor, seasonal employees, an arborist, a maintenance worker and two property management specialists.

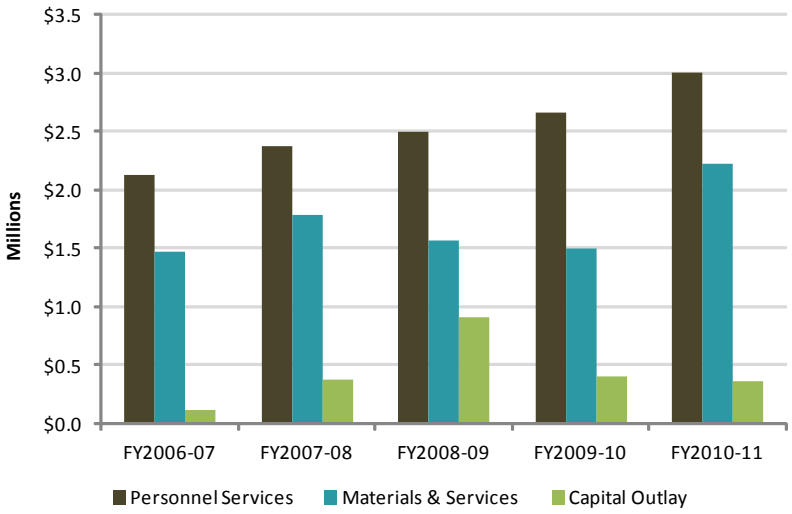
Exhibit 1
Organizational chart for land management



Source: Metro Auditor's Office analysis of organizational charts

Expenditures for land management increased over the last five years, from $3.7 million in FY2006-07 to $5.6 million in FY2010-11. Part of this increase was the result of land management costs from new areas that were acquired when the Natural Areas Bond Measure was approved by voters in 2006. Passage of the bond increased expenditures for employees and contracted services.

Exhibit 2
Expenditures for natural areas and parks management*



Source: Metro Auditor's Office analysis of expenditure data in accounting system.

* *Inflation adjusted expenditures for the following departments: Parks and Natural Areas Management, Columbia District, Willamette District, Natural Resources Stewardship and Stabilization. Expenditures for Glendoveer golf course, Oregon Zoo and Pioneer Cemeteries were excluded because they have unique management issues that are not directly comparable to natural areas and park management. These expenditures also exclude most capital costs for park construction.*

Personnel services, which include employee salaries and benefits, accounted for just over 50% of expenditures in the last five years. Materials and services, which include contracted services and other materials purchased from vendors was the second largest category of expenditures (37%), followed by capital outlays, which include construction costs, vehicles and equipment.

Spending on personnel services and materials and services increased in FY2010-11. Two new positions were added recently that account for some of the changes in personnel service expenditures. Additional work tied to property acquisitions in FY 2008-09 and FY 2009-10 increased materials and services expenditures and capital outlay. Metro received grants for some restoration projects that increased expenditures over the last four years.

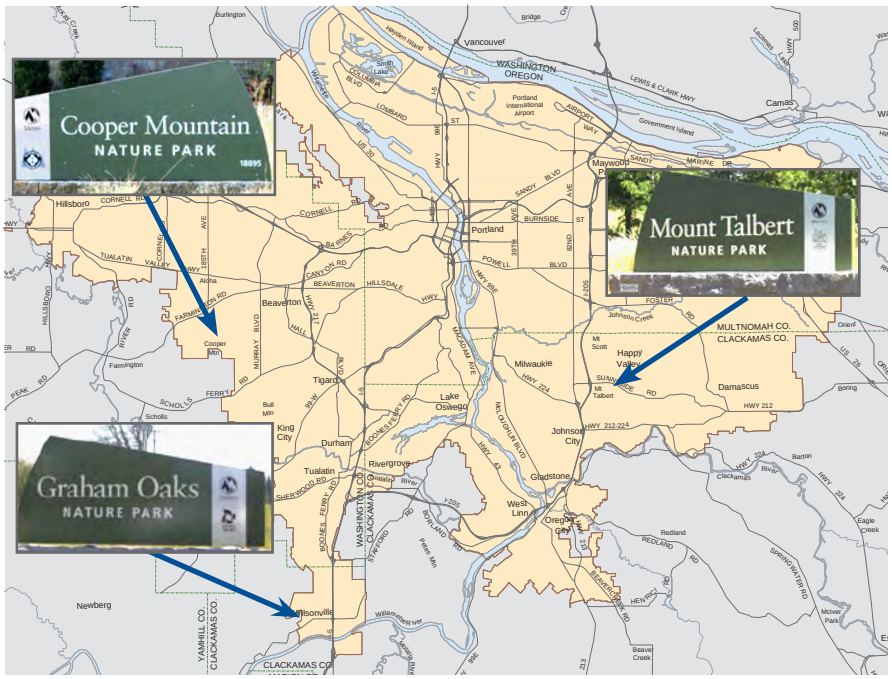
Funding for land management comes from a variety of sources, including bond funds, interest earnings, taxes, grants, fees for admission and revenue from rental properties and agricultural leases. Some funding sources have restrictions on how they can be used. For example, bond funds and related interest earnings cannot be used for maintenance or operations.

Nature Parks

Much of the analysis and other information in this report focused on how Metro maintained its three nature parks. We chose nature parks because they combine elements of a traditional park, such as restrooms, picnic and parking areas with the natural elements commonly found at many of Metro's natural areas. In 2001, the Metro Council convened an advisory group to prioritize areas for future park development and in 2006, the Metro Council committed funds to build them. Three nature parks were built as a result: Mount Talbert, Cooper Mountain and Graham Oaks.

Mount Talbert was the first of the three parks to open to the public in 2007. Made up of 215 acres of douglas fir forest, the park is located on a lava dome in Happy Valley. Cooper Mountain, which is located just outside Beaverton, opened in 2009. This park is comparable in size to Mount Talbert at 232 acres and contains a mixture of oak woodland and douglas fir forest. Graham Oaks was the most recent park to open in 2010. It is the largest of the three parks at 246 acres. The park contains a mixture of oak savanna and douglas fir forest and is located just outside Wilsonville. The three parks were similar in size and had similar improvements for public access (restrooms, trailheads, picnic facilities and parking lots). Other improvements were unique to a park. For example, an education building was constructed at Cooper Mountain and a paved regional trail was built at Graham Oaks.

Exhibit 3
Location of nature parks

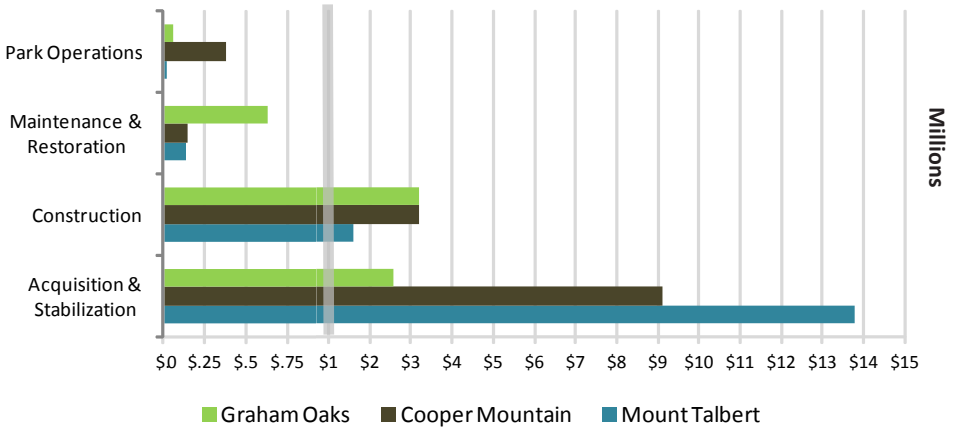


Source: Metro Auditor's Office

Metro had a different approach for management of each park. At Mount Talbert, North Clackamas Parks and Recreation District (North Clackamas) maintained the park with some technical assistance from Metro. At Cooper Mountain, Tualatin Hills Parks and Recreation District (Tualatin Hills) maintained the park, with funding and technical assistance from Metro. At Graham Oaks, Metro managed the park itself.

The cost to develop the parks from purchasing land through park construction and operations varied. Of the three parks, the cost of land at Mount Talbert was the most expensive, but it was the least expensive to construct, maintain, and operate. Conversely, land costs for Graham Oaks were low. The cost to construct Graham Oaks and Cooper Mountain was nearly the same, and both were more expensive than Mount Talbert. Expenditures at Cooper Mountain for land, maintenance and restoration, and construction fell in the middle of the three parks, but it was the most expensive to operate.

Exhibit 4
Park development expenditures
FY 1996-97 to FY 2010-11*



Source: Metro Auditor's Office analysis of expenditure data in accounting system.

* *Inflation adjusted. Includes unaudited expenditures reported to Auditor's Office from North Clackamas Parks and Recreation District. For the most part, expenditures for Metro staff time (personnel services) are not included.*

Scope and methodology

The purpose of this audit was to determine the relative strengths and weaknesses of different approaches for land management. Metro's strategy evolved over the life of the Natural Areas Program, which made it difficult to compare work between properties that were purchased at different times. We selected three management systems to analyze in depth how work was organized and how much it cost. The three approaches we reviewed were:

- **Metro owned, partner maintained with technical assistance from Metro.** Mount Talbert Nature Park is an example of this approach. Metro owns the park and North Clackamas maintains it.
- **Metro owned, partner maintained with funding and technical assistance from Metro**. Cooper Mountain Nature Park is an example of this approach. Metro owns the park and pays Tualatin Hills to maintain it.
- **Metro owned, Metro maintained**. Graham Oaks Nature Park is an example of this approach. Metro owns the park and maintains it.

These parks provided examples of the various types of work that might be needed on any given property. The 17 properties that became these three parks went through several phases, which provided a longer history and more detail about land management needs and associated costs.

We reviewed audit reports performed by this and other offices to understand the types of analysis performed in the past. We reviewed compliance with Metro Council resolutions, bond measures and bond covenants that govern Metro and the Natural Areas Program.

To understand department and program finances, we reviewed budgets and performance measure summaries. We analyzed data from the accounting system to determine the cost of property, constructing and operating the three nature parks, as well as the cost to operate the two departments.

The Program uses a wide array of tools to manage its work. We reviewed closing memos, stabilization plans and target area planning reports for properties purchased with 1995 and 2006 bond funds. We examined the agreements Metro uses to coordinate work with other governments.

To understand how the program works, we interviewed managers, scientists, technicians, park rangers, budget and accounting employees, and property management employees who work with these properties on a daily basis. We also interviewed and met with representatives from the City of Portland, North Clackamas Parks and Recreation District and Tualatin Hills Parks and Recreation District.

Over the course of 15 visits, auditors spent more than 100 hours touring properties in 17 of Metro's 27 target areas. We visited Metro's three nature parks, newly acquired properties, land leased for agriculture use and rental houses purchased with bond funds. We visited these sites with the scientists and technicians who plan and maintain the areas and made separate visits on our own.

As part of our audit work, we tested internal controls in five areas: (1) rental properties and agricultural leases; (2) vegetation management and plant material contracting; (3) work time and activitiy tracking; (4) vehicles and equipment; and (5) illegal drug operations on public land. We summarized the findings of our work on this audit objective in a separate letter and information provided to management. We found some controls were in place, but Metro should improve them to lessen the risk of fraud or abuse occurring.

This audit was included in the FY2011-12 audit schedule. We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Results

Since 1994, Metro's land holdings have almost quadrupled. It owns over 15,000 acres of parks and natural areas. Maintaining these properties is important to preserve their value for residents of the region. Metro needs to apply the same rigor that it has applied to its land acquisition program so the value of this land can be maintained into the future. We found that Metro did not have a consistent strategy for land management and a funding source was never stabilized. With maintenance needs and associated costs increasing, Metro will have to prioritize efforts to match available resources. Further, to increase the effectiveness of its efforts, Metro needs to clarify the roles and responsibilities of employees and develop better systems to monitor its efforts.

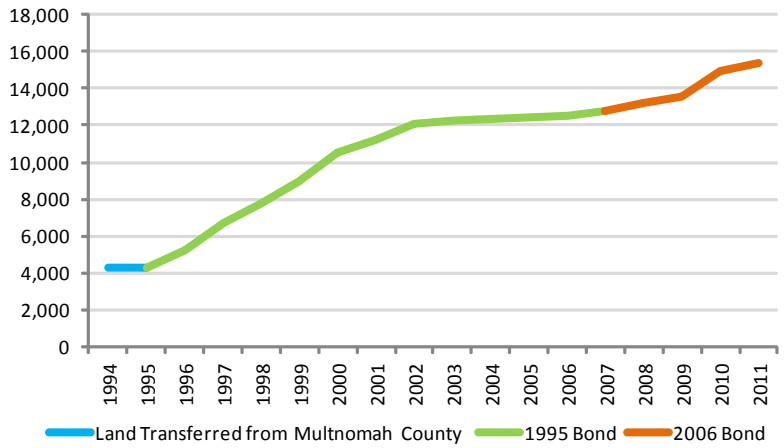
Metro's land management role increased

Over the last 15 years, Metro focused on acquiring land. From the beginning, Metro knew the land would need to be maintained. As land was purchased, the need to maintain it grew. Metro originally thought it would be able to work with local jurisdictions to share land management responsibilities. Partnerships for maintenance were implemented with varying levels of success. Over time, Metro's land management role increased because other jurisdictions were unwilling or unable to maintain the land.

Metro coordinated a regional plan for a natural areas and park system in 1992. According to that plan, Metro's role was primarily to raise funds, arrange for management of the land and provide technical assistance to local jurisdictions for maintenance. Since then, voters approved two bond measures in 1995 and 2006 to fund land acquisition.

The amount of land owned by Metro grew quickly after the regional plan was approved. Metro became a park operator when it acquired about 4,000 acres of land from Multnomah County in 1994. When the first bond measure passed, land holdings increased rapidly, growing by 6,000 acres over a five-year period. Property purchases slowed from 2001 to 2007, only to increase again after the passage of the second bond measure.

Exhibit 5
Total acres under management
CY1994 to CY2011



Source: Metro Auditor's Office analysis

Metro expected to transfer some of the land purchased to local jurisdictions to manage and entered into agreements with other governments in the region. Metro did not have the resources to manage land itself, so until 2003, it paid the City of Portland for management of the land that had not been transferred to other jurisdictions.

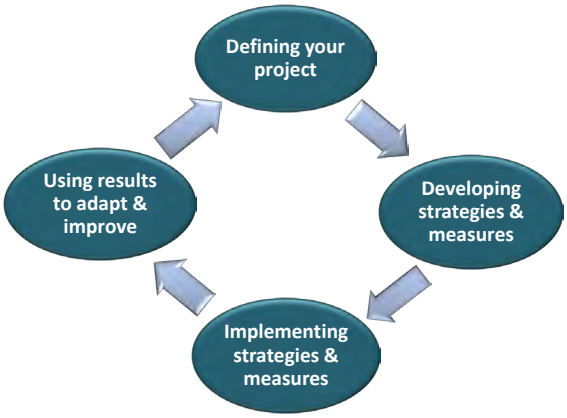
Metro began to develop land management capacity in-house in 2000, when it assigned two park rangers to focus on managing the land. This started a gradual shift to a more active role. Metro continued to develop its in-house expertise and eventually expanded the number of employees working on land management when the 2006 Natural Areas Bond Measure passed. Around that time, Metro committed funding to provide public access at some natural areas. The Metro Council committed to building new parks and identified certain natural areas as the best options for future park development.

The focus on providing public access to natural area lands resulted in the construction of three new nature parks. After the parks were built, Metro reached agreements with North Clackamas to manage Mount Talbert and Tualatin Hills to manage Cooper Mountain. Metro did not find a partner to manage Graham Oaks. The decision to manage the nature park resulted in additional responsibilities.

Better management structure needed

As Metro acquired more land, it needed a plan for how to maintain it. A framework for effective management is based on a series of steps that build on each other. The first step is defining what needs to be done. The second step is creating a strategy and identifying performance measures that will be used later to assess how well the strategy worked. The third step is conducting the work and collecting information for each performance measure. The final step is using performance data to assess how well the strategy worked and then applying what was learned to future work.

Exhibit 6
Management framework for conservation



Source: Conservation Measures Partnership, *Open Standards for the Practice of Conservation*

As Metro acquired land, it needed to implement an overarching strategy for maintenance. Without one, it was unable to fully develop the other steps in the management framework. It undertook some of these steps for some projects, but they were not consistently completed and documented. Maintenance strategies evolved which created confusion about how Metro would manage its natural areas. Initially, Metro planned to do limited maintenance, but later decided to modify the standard to include restoration projects and nature parks. There was no comprehensive approach and performance measures were underdeveloped. As a result, the effectiveness of Metro's work was difficult to assess. The Natural Areas Program struggled to communicate the importance and value of its work.

Ad hoc management may have been sufficient to meet objectives when the amount of land Metro owned was relatively small. Now, the complexity of the system demands more structured management. The Program needs to clarify priorities, establish standards, document work and create consistent management procedures to improve the efficiency and effectiveness of its work.

Elements of land management system could be improved

We found that Metro did not have key elements of a strong management system. Metro's policy for maintaining the assets at parks was clearly defined, but it was not clear for natural areas. A consistent funding source was not identified for maintenance. Tools to estimate maintenance costs were underdeveloped and site specific maintenance plans were incomplete. Lack of understanding about what level of maintenance was required inhibited Metro's ability to strategically plan and allocate resources for maintenance work.

Funding source for maintenance not stablized

The need to identify a funding source for maintenance was considered several times since the Greenspaces Plan was adopted in 1992. Attempts were made to create a stable funding source. To date, Metro has not established a consistent source of funding for maintenance activities.

In 2002, the Metro Council approved an increase in the excise tax to fund the Program. The increase was predicted to raise about $1.2 million annually to pay for maintenance and operations. In 2004, the excise tax was raised again to generate an additional $1.8 million annually. Those funds were directed toward developing four new parks and operating three of them. In 2006, the Metro Council decided to phase out the dedicated funding for these purposes. Shortly thereafter, voters approved Metro's Natural Areas Bond measure that raised $227.4 million for land acquisition and habitat restoration.

These decisions impacted Metro's current budget for maintenance and operations. The 2006 bond measure increased funding for park construction and land restoration, but dedicated funding (excise taxes) for maintenance

declined. At the same time, land management costs increased because Metro built three new parks and continued to purchase more land that had to be maintained.

Declining funding for land management is likely to become more acute in the coming years. Currently, Metro funds these activities through a combination of user fees at some parks (about $600,000 per year), rental income from houses and agricultural leases (about $450,000 per year), and the remaining fund balance from a previous set aside of tax revenue (expected to be fully expended in the next two years).

Cost of maintenance not clear

The Program had limited information about what maintenance was done in the past and how much it cost. We found expenditures in the accounting system were not always coded to specific properties. It was difficult to determine how much time and resources were spent at a given site.

Determining the cost of restoration and ongoing maintenance work was a challenge because it depended on the type of habitat and the amount of restoration needed. To help plan and budget, the Program developed a cost estimation methodology called the Stewardship Classification Tool. The tool allocated costs into seven habitat types and five stages of restoration, one of which was long-term maintenance. Estimated restoration costs vary by the habitat type and relative quality of the site. For example, reforesting an agriculture field was estimated to be more expensive than restoring an existing forest. The tool was used to predict the total cost to restore and maintain Metro's land.

We found the tool had limitations. Employee costs were not included and cost estimates were not developed for all habitat types and capital improvements. As a result, it was difficult to understand how much time it would take and how much it would cost to restore the land.

Maintenance plans needed for each site

Site level planning is critical to effective maintenance. The Program needs these plans to budget and ensure that maintenance needs are clearly identified. These plans could also help ensure consistent management approaches over time and between employees, and facilitate analysis of the effectiveness of the Program's efforts.

Metro had plans for land acquisition, stabilization and park development but not ongoing maintenance. In preparation for the two bond measures, Metro focused on planning and prioritizing areas around the region for purchase. These plans contained information about the ecological features to protect, but they are not specific enough to guide maintenance of the sites.

Another type of plan, stabilization plans, guided the initial work needed to secure the property and prevent it from deteriorating until long-term

maintenance plans could be developed. The importance of stabilization plans increased during the second bond measure because they were used to document the state of the land and define the desired future habitat type. This information was intended to be used to establish long-term restoration goals.

We determined that stabilization plans provided a starting point for restoration and long-term maintenance, but they had a number of drawbacks. They were not done for every property, making it difficult to know the full extent of maintenance needs at a site. For example, of the 17 properties that became the three nature parks, only eight of the properties had stabilization plans. There was less stabilization planning during the first bond measure, but this has since improved for the land purchased with the second bond measure beginning in 2006. We also learned that after the stabilization period, the long-term management team did not consistently use them as a starting point for their maintenance work. As a result, maintenance was not always tied to the work done previously.

Beginning in 2009, the Program started creating plans for maintenance. One set of plans described the habitat types and key features at each site. A second set of plans were intended to be detailed work plans to guide implementation of the goals outlined in the first set of plans. A draft of one implementation plan was being developed during the audit, but it was not complete. We found these plans had the potential to assist land managers in guiding long-term maintenance of restored areas, but they were not sufficient to guide all maintenance needs.

Without a plan, maintenance was inconsistent

Because planning for land management was not rigorous, maintenance work was not as efficient and effective as it could be. As Metro's land holdings increased, it needed formal policies and procedures to ensure the Program was making best use of available resources.

Employees filled the void with their own initiative and experience, which increased the risk that different approaches would be taken. Some employees had education or expertise working on specific types of habitats. For example, one person had experience working on stream restoration while another specialized in prairie restoration. Similarly, some employees had experience working at parks as rangers, while others were more specialized in the plant and animal management work typically done at natural areas. As a result, employees sometimes worked at cross purposes.

Reaching agreement about priorities for each site and planning how to meet them is important. During the audit, we learned of examples that demonstrate how challenging it is to work in an environment with conflicting perspectives about maintenance techniques and priorities for land management. Examples of the impact of different perspectives for land management came from Mount Talbert and Cooper Mountain. At Mount Talbert, Metro built the main trailhead, including a parking lot, picnic shelter and restroom, in the

wildlife corridor connecting the park to neighboring natural areas. At Cooper Mountain, trailhead improvements were built on a wetland. The result was that Metro had to mitigate the lost wetland by creating one in another part of the park.

Another point of divergence centered on the methods used to manage land. The Program's use of herbicides and cutting down trees was controversial to some, but seen as necessary by others. Three examples highlight the potential divergence. One example occurred when an employee planned a restoration project that included cutting down trees that had been planted during an earlier restoration project. A second example came from a restoration project that involved removing trees, which was questioned by neighbors and resulted in a delay of several years in completing the project. In the final example, Metro and a partner had different perspectives on the use of herbicides. This resulted in different management techniques on the same 19 acre site. While it may seem like the possible range of land maintenance options is small, there are many different perspectives about what should take priority and what techniques should be used. This is why site specific plans are so important.

Roles and responsibilities unclear

Roles and responsibilities were unclear within Metro and between Metro and its partners. Metro employees had overlapping responsibilities and partners did not have a single point of contact at Metro. As a result, no single organizational unit and manager had authority and accountability for a given site.

For example, the Parks and Environmental Services department was responsible for managing the partnership agreements with North Clackamas and Tualatin Hills. However, Metro employees, who actually work at those two parks, were part of the Sustainability Center, a different department. This resulted in confusion. North Clackamas and Tualatin Hills were unsure who at Metro they should work with.

At Graham Oaks, roles and responsibilities were undocumented between Parks and Environmental Services and Sustainability Center employees. During our site visits, we learned that Parks and Environmental Services maintained the public use facilities and the Sustainability Center focused on maintenance of the natural resources at the park. Each department budgeted and planned its work separately. As a result, there was no unified maintenance plan and budget for the park. This increased the risk that work would be uncoordinated.

We found a lack of clarity about roles and responsibilities between the Metro scientists and technicians that manage land. In general, scientists were expected to create site plans, apply for grant funding and manage restoration projects. Technicians were expected to work mostly in the field maintaining natural areas and helping implement restoration projects. Employees in both positions preferred to work in the field. As a result, employees were more likely to involve themselves in work that was not in the office, which

meant less time to complete planning projects. While overlapping roles and responsibilities can be appropriate, planning duties need to be clearly assigned.

At times, some scientists served in more of a technician role while in other cases, some technicians served in more of a scientist role. For example, at Mount Talbert, the technician planned and coordinated maintenance work with North Clackamas and the scientist assigned to that park had a limited role. At Cooper Mountain, both the scientist and the technician assigned to the park were active in planning and implementing maintenance and restoration work with Tualatin Hills. At Graham Oaks, the technician and a park ranger from the Parks and Environmental Services department conducted maintenance work and there was less involvement from the scientist assigned to that park.

The technicians and scientists had different managers and budgets, which created challenges for allocating resources. Restoration projects that scientists pursued took time and other resources that would otherwise be available for maintenance work. When scientists started a restoration project, a technician was assigned to help with implementation. The technician was also responsible for long-term maintenance after it was finished. Each restoration project increased the technician's workload not only during the project itself, but for many years after to maintain it.

When grants for restoration projects were submitted for funding, there was no comprehensive analysis of the staff and other resources that would be needed to maintain them. These restoration projects resulted in the technicians and scientists using a larger share of their time and budget at a few sites. Since the technicians and scientists each answered to their own managers and had separate budgets, extra coordination was needed to ensure that projects did not overwhelm Metro's resources for maintenance.

As role evolved, costs increased

Maintenance needs and costs increased as Metro took a larger role in land management. Three broad drivers were responsible. First, the amount of land Metro owned grew and it ended up managing the vast majority of it. Second, the decision to restore land and build parks required more maintenance. Finally, who was responsible for maintenance impacted costs.

Metro's standard for maintenance changed over time. When the Program first started buying land, a newly acquired property was improved, briefly maintained, and left alone. This was called land banking. As the Program acquired more property, projects to restore land became a priority.

Restoration projects were large-scale property improvements to improve the ecological function of a site. These projects typically involved removing weeds, replanting native shrubs, and repairing things such as stream banks. Metro's focus on restoration resulted in a standard of maintenance higher than land banking and increased costs.

In addition, Metro's decision to develop new parks created higher maintenance and operations costs. For example, the three nature parks Metro built included traditional park assets like trails, restrooms and picnic areas, as well as large land restoration projects that converted agricultural fields into other habitat types.

We found that transferring management responsibilities to a partner did not always reduce costs. The partnership agreements Metro created required employees' time to coordinate. This took resources away from Metro's other maintenance work. Each of the three parks that we studied was managed differently. Metro took complete responsibility for managing Graham Oaks and spent about $60,000 in FY2010-11 for park operations. In comparison, Metro shared management at Cooper Mountain and paid Tualatin Hills $136,000 in FY2010-11 for their work, which included an education program. Metro employees worked closely with Tualatin Hills to provide technical assistance for natural area maintenance and incurred additional costs. In contrast, North Clackamas was solely responsible for maintenance and operations of Mt. Talbert. North Clackamas reported that it spent a total of about $53,000 in FY2010-11 to manage the park.

Trends in land management indicate that Metro's standard may not be financially sustainable. Metro will have to decide what maintenance standard to apply. If it decides to restore the entire portfolio of land, it will require a large commitment of resources over several decades. In addition, restored land will need to be maintained thereafter. Other land managers in the region have had to deal with similar constraints. They focus on maintaining what they have rather than restoring every property.

Lack of clarity hinders evaluation

We were unable to conclude whether Metro should retain control over its new parks or partner with other jurisdictions. There were clear differences in the time and cost to reach Metro's goals for each park, but to make a determination about which was best would require more clarity about Metro's role, strategy and standard for land maintenance. However, we did draw general conclusions about the decision points that influence maintenance needs and costs.

During the audit, we learned that North Clackamas did not have the resources to maintain the park to Metro's standard. Metro stated that they may take over management of Mt. Talbert from North Clackamas in the future. In contrast, the agreement with Tualatin Hills appeared to be working as expected, although it is not clear if they will be able to maintain the site at the same level after Metro stops paying for the work.

Partnerships for land management required effort to be effective because Metro continued to retain ownership. If a partnership breaks down, Metro becomes the manager of last resort. Regardless of who manages the property, Metro's reputation will be tied to public perceptions about how it's maintained.

To be successful, partnerships may require larger investments and more time to set up. If done successfully, Metro may benefit from reduced costs in the long-term. Conversely, Metro can reduce the time it takes to meet its goals by managing land by itself. However, it will have to commit resources on an annual basis for decades to come. To realize the potential cost savings from partnerships, Metro needs to understand the capacity of its partners and provide better guidance and technical assistance.

Recommendations

To protect and maintain the value of land purchases, Metro should take the following actions to strengthen its land management program:

1. Develop a system to prioritize areas for maintenance based on available funding.
    a. Develop site specific plans for land to be maintained.
    b. Define the maintenance standard for each site plan.
    c. Ensure that plans include all maintenance activities regardless of who performs them.
    d. Periodically review prioritization and plans.

2. Improve the organization of land management responsibilities.
    a. Clarify roles and responsibilities.
    b. Develop systems to better track expenditures and estimate future costs.
    c. Develop, collect, and monitor performance measures to improve maintenance strategies.
    d. Improve management of partnership agreements.
        i. Develop a toolkit that includes how standards will be implemented.
        ii. Define what technical assistance will be provided.

Management Response

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Metro | *Memo*

Date: April 12, 2012

To: Suzanne Flynn, Metro Auditor

From: Martha Bennett, Chief Operating Officer
Scott Robinson, Deputy Chief Operating Officer
Jim Desmond, Sustainability Center Director
Paul Slyman, Parks & Environmental Services Director

Cc: Kathleen Brennan-Hunter, Natural Areas Program Director

Subject: Management response to Natural Areas Maintenance audit

Thank you for the opportunity to respond to your recent audit regarding natural areas maintenance. We appreciate the time and effort you and your staff spent in reviewing the program. Management agrees with your recommendations and is committed to continuous improvement. For the past three years, natural areas program staff have been developing a comprehensive Natural Areas Science and Land Management (NASLM) framework for restoration and maintenance planning, cost projections and tracking and adaptive management. With this framework in place, we are well positioned to respond to this audit.

As you know, Metro absorbed land rapidly between 1994 and the present, adding nearly 16,000 acres in that time – over 900 acres a year on average. Acquisition of land was an intentional strategy following passage of the 1995 and 2006 bond measures. It was clear from the time the Metro Council referred the first bond measure to the ballot that acquisition was the imperative and that while long-term maintenance funding needed to be identified and set aside, the Metro Council and the region's voters prioritized land acquisition. Metro staff worked hard to protect and preserve the region's investment, erring on the side of on-the-ground action rather than programmatic planning. Today the need for stable long-term funding and a consistent management approach is clear.

As Metro acquired more land, we actively prioritized our resources to maximize benefits for wildlife habitat and water quality, but did not articulate the approach in a written document. We are currently engaged in an ongoing effort, linked to the NASLM framework mentioned above, to document this prioritization. One complexity which may be worth noting is that this approach needs to be flexible, because in any given year, weather events, new weed infestations, or opportunities to leverage external funding may drive investment decisions.

The NASLM framework development started with the Stewardship Classification tool. This tool is a geographic information system-based approach, which allows us to track habitat status of sites across the region. It includes a classification and current status of the habitat on a given acre, as well as the cost of active management of each area. The tool was an important step forward to being able to have a regional view of Metro's portfolio and to project costs for restoration and maintenance.

We also developed templates for a series of planning documents which inform and direct on-the -ground actions and investments and are currently drafting the various plans for each site and completing the appropriate templates. We put the early effort into the higher level plans, since the regional-scale conservation and access priorities inform management and restoration choices. To determine the future habitat targets for a given site, the NASLM team first looks at the regional and state context. They consider how the site fits into the watershed, other restoration efforts in the area and threats to the conservation target. For example, when salmon are a conservation target, NASLM planning must consider water quality, shade and other site conditions that contribute to the habitat quality. They must also consider what is happening up and down stream, and how these factors together impact the salmon lifecycle. This is a nested planning approach, though until recently we did not have a graphic depiction of this approach so that it would be clear to everyone. Attached here is a graphic which illustrates the natural areas management and restoration planning approach for the program.

Our goal is to be good stewards, and we have committed hundreds of hours in staff time formulating site plans and maintenance and restoration strategies. A recently completed site conservation and maintenance plan, one for a fairly complex property with a great deal of public interest, took approximately 200 hours of staff time. The public engagement and thorough approach was critical for the site, but the time commitment did require tradeoffs.

While we agree with and are already implementing audit recommendation 1 to develop stronger systems around natural area maintenance, including site-specific plans for each natural area, it should be understood that such detailed planning takes a significant amount of staff time and comes at the cost of addressing some day-to-day needs on the ground.

Over the past year, the Natural Area Program developed a new properties database. Implementation of the database is another part of our effort to move natural areas restoration and management into a comprehensive system. In the upcoming year, we plan to move forward with the next phase of the database, which covers site and property operations and maintenance. This will provide additional tools for tracking management actions at the regional scale.

The specific recommendations included in the audit align with the strategic direction briefly described above and, as we continue to implement the framework, we will implement the recommendations. Once again, we appreciate the time and effort you and your team put into assessing the program.

Metro's natural areas management and restoration framework

This framework guides Metro's science and land management teams. It is the working approach to conservation planning for the NASLM team. While this graphic is simplified to emphasize relationship, there are feedback loops between elements.

[illegible] 4/12/2012

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