BEFORE THE METRO COUNCIL

AUTHORIZING THE CHIEF OPERATING OFFICER TO ENTER INTO AN INTERGOVERNMENTAL AGREEMENT WITH THE TUALATIN HILLS PARK AND RECREATION DISTRICT FOR JOINT MANAGEMENT OF COOPER MOUNTAIN NATURE PARK	)))))))	RESOLUTION NO. 09-4047 Introduced by Chief Operating Officer Michael J. Jordan, with the concurrence of Council President David Bragdon

WHEREAS, Metro acquired more than 230 acres of property located in Washington County, Oregon, known as the Cooper Mountain Natural Area as part of the 1995 Open Spaces Bond Measure; and

WHEREAS, Metro worked with Tualatin Hills Park and Recreation District to develop the Cooper Mountain Master Plan and Management Recommendations (the "Master Plan");

WHEREAS, on December 1, 2005, the Metro Council adopted Resolution No. 05-3643, "For the Purpose of Approving the Cooper Mountain Master Plan and Management Recommendations;" and

WHEREAS, the Washington County Board of Commissioners approved the Master Plan in April 2006;

WHEREAS, the Master Plan established a mission to "balance protection and restoration of the unique natural resources of the Cooper Mountain Natural Area with the public's enjoyment of nature-based recreation";

WHEREAS, using funding from the 2006 Metro Natural Areas Bond Measure, Metro will soon complete construction of extensive public improvements to open the Nature Park for public use and enjoyment;

WHEREAS, in order to efficiently and cost-effectively deliver high-quality service to the public from a local parks provider and to expand environmental education and natural area access for citizens, Metro and THPRD have negotiated the intergovernmental agreement attached as Exhibit A (the "IGA");

WHEREAS, the IGA provides for joint management of the Nature Park consistent with the approved Master Plan, with the primary goal being protection of the Nature Park's natural resources, enhancement and protection of wildlife habitat, and providing public recreation and education consistent with the foregoing; and

WHEREAS, the THPRD Board approved the IGA at its March 2, 2009 meeting; now therefore

BE IT RESOLVED that the Metro Council hereby authorizes the Chief Operating Officer to execute an intergovernmental agreement with the Tualatin Hills Park and Recreation District, substantially in the form attached hereto as Exhibit A, for joint management of Cooper Mountain Nature Park.

ADOPTED by the Metro Council this 7TH day of MAY, 2009.

David Bragdon, Council President

Approved as to Form:

Daniel B. Cooper, Metro Attorney

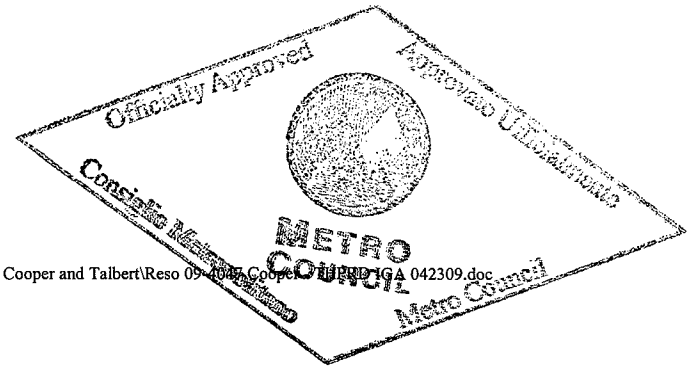

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Exhibit A
Form of Intergovernmental Agreement

INTERGOVERNMENTAL AGREEMENT

This Intergovernmental Agreement ("Agreement") is by and between Metro, an Oregon municipal corporation, located at 600 Northeast Grand Avenue, Portland, Oregon, 97232-2736 ("Metro"), and the Tualatin Hills Park & Recreation District, a park and recreation district organized under ORS chapter 266, located at 15707 SW Walker Road, Beaverton, Oregon 97006 ("THPRD"). This Agreement shall be effective on the last date of signature of a party below (the "Effective Date").

RECITALS

WHEREAS, pursuant to the 1995 Metro Open Spaces Bond Measure, approved by the voters on May 16, 1995, Metro has acquired more than 230 acres of real property located in Washington County, Oregon, commonly known as the Cooper Mountain Natural Area (the "Natural Area" or "Nature Park"), and more specifically identified on the map attached hereto as Exhibit A;

WHEREAS, on December 1, 2005, Metro approved the Cooper Mountain Master Plan and Management Recommendations by its adoption of Resolution No. 05-3643 (the "Master Plan");

WHEREAS, in April 2006 the Washington County Board of Commissioners approved the Cooper Mountain Master Plan and Management Recommendations;

WHEREAS, the Master Plan established a mission to "balance protection and restoration of the unique natural resources of the Cooper Mountain Natural Area with the public's enjoyment of nature-based recreation";

WHEREAS, using funding from the 2006 Metro Natural Areas Bond Measure, Metro has completed, or will soon complete, construction of extensive public improvements to open the Nature Park for public use and enjoyment;

WHEREAS, Metro and THPRD wish to jointly manage the Nature Park consistent with the approved Master Plan, with the primary goal being protection of the Nature Park's natural resources, enhancement and protection of wildlife habitat, and providing public recreation and education consistent with the foregoing; and

WHEREAS, Metro and THPRD therefore desire to enter into this Agreement to set forth the responsibilities and obligations of the parties with respect to the allowable uses, improvements, management, maintenance, restoration, and operation of the Nature Park;

Now, therefore, the parties agree as follows:

AGREEMENT

1. **Metro's Compensation for THPRD Management Expenses.** Metro shall compensate THPRD for expenses THPRD incurs to manage the Nature Park pursuant to this Agreement for the first five years of this Agreement. Such compensation shall be invoiced to Metro at the rates and staffing levels described in Exhibit B attached hereto. Beginning in year two of this agreement, Metro agrees to increase the annual compensation to THPRD by an inflation rate of 3% per year for labor and materials and services. Following receipt of an invoice from THPRD, Metro shall provide THPRD with such compensation on an annual basis, not later than the end of each Metro fiscal year. Metro and THPRD agree to meet annually, no later than November 30 of each year to review levels of service and budget sufficiency to determine if either needs to be adjusted. Metro shall be responsible for establishing this meeting date with THPRD on an annual basis. Beginning on the fifth anniversary of this Agreement and in all years thereafter, THPRD shall be responsible for all operational expenses it incurs to manage the Nature Park pursuant to this Agreement. It is hoped that the area surrounding the Nature Park is annexed into the Park District, which would provide operational funds for the Nature Park. Both Metro and THPRD support this concept.

2. **Capital Improvements and Renewal and Replacement.** Metro has completed, or will complete not later than June 15, 2009, construction of capital improvements in the Natural Area as provided in the Master Plan, including the "Nature House" classroom building, two trailhead restrooms, a paved parking area, a children's discovery garden, two picnic areas, demonstration gardens, a maintenance building and facilities, signage (including interpretive, directional, traffic, regulatory, and trail signs), walking trails, on-site storm water treatment facilities (bioswales), artwork, an irrigation system, and automated entrance gates (the "Park Facilities"). Metro will provide THPRD with full copies of all "as-built" drawings for of the Capital Improvements on the Nature Park. Metro will also provide and coordinate appropriate training for THPRD staff regarding the construction and proper maintenance of the Park Facilities. Metro will remain responsible for the workmanship and material warranties for all Park Facilities for a period of one year from the date the Park Facility was completed and accepted by Metro. Any additional capital improvements deemed necessary at the site will be mutually agreed upon by Metro and THPRD and, upon completion of their construction, shall be considered part of the Park Facilities. As the land owner, Metro retains ownership of the Park Facilities. Metro will budget renewal and replacement funds for the Park Facilities in accordance with Metro's renewal and replacement policy and schedule attached as Exhibit C. As renewal and replacement projects are due, Metro and THPRD will come to an agreement as to who will manage the project at Metro's expense.

3. **THPRD's Access, Management, Maintenance, Operation, and Security.**

   3.1. Metro grants to THPRD, and to THPRD's agents and contractors, the right to enter the Nature Park for the purpose of performing all activities, including enforcement of THPRD's code and policies related to parks, reasonably necessary for the management, maintenance, operation, and security of the Nature Park and for the fulfillment of THPRD's duties and responsibilities under this Agreement. The public shall be

permitted to access the Nature Park only as provided in the Master Plan or as specified by special permit.

3.2. THPRD shall be responsible for the daily and ongoing management, maintenance, security, and operation of the Nature Park at all times, in accordance with the terms of this Agreement. The Nature Park shall be managed, maintained, operated, and protected in accordance with the Master Plan and its intended use as a natural area, with the primary goals being protection of natural resources, enhancement and protection of wildlife habitat, and public recreation consistent with the foregoing. THPRD's management, maintenance, operations, and security of the Nature Park shall be qualitatively comparable to THPRD's management, maintenance, operations, and security provided at other facilities that THPRD owns or manages. Metro shall periodically visit and inspect the Nature Park to ensure that THPRD's management is in accordance with this Agreement. THPRD's responsibilities shall include:

3.2.1. Daily management, maintenance and repair, security, and operation of the facilities, projects, and improvements made by Metro pursuant to Section 2 of this Agreement;

3.2.2. Staffing and funding the operation, maintenance, and security of the Nature Park with THPRD's own financial and staffing resources, except as otherwise provided in Sections 1 and 2 of this Agreement;

3.2.3. Enforcement of rules and regulations applicable to use of the Nature Park consistent with the Master Plan, including restrictions on dogs, bicycles, fires, camping, equestrian use, motorized vehicles, firearms, hunting, smoking, intrusive noise, and plant collecting, and all other applicable code provisions, laws, and rules applicable to parks managed by THPRD. THPRD shall not change any park rule, authorize uses that had been prohibited, or prohibit uses that had been authorized, without Metro's written consent prior to implementing any such change in the Nature Park, except for temporary changes necessary due to a public safety emergency;

3.2.4. Responding to and resolving public inquiries and nuisance complaints and mitigating threats to the resources of the Nature Park in a timely manner. THPRD shall notify Metro of any such inquiry or complaint regarding a significant natural resource-related issue, including, without limitation, land slides, dying trees, and fires. If Metro is issued a nuisance notice for the Nature Park by a governmental body with authority to issue such notice, Metro shall forward such notice to THPRD and THPRD shall abate the nuisance as required in the notice. If THPRD does not abate the nuisance, then Metro may, at its sole option, abate the nuisance and provide THPRD with an invoice for the cost of such work, which THPRD shall be liable to pay to Metro, and shall pay to Metro within thirty (30) days of receiving such invoice;

3.2.5. Obtaining any authorizations or permits necessary for management, maintenance, security, and operation of the Nature Park. Any permits granted by THPRD to users of the Natural Area shall comply with the terms and limitations set forth in this Agreement and in the Master Plan. THPRD shall be responsible for contacting and coordinating with other local or state agencies regarding any and all management, maintenance, security, and operational issues that may arise with respect to the Natural Area. THPRD shall consult with Metro not fewer than thirty (30) days prior to THPRD applying for any development permit applicable to the Nature Park. Metro's acceptance of such permitting activity is implied unless otherwise communicated in writing by Metro within twenty (20) days of such consultation.

3.2.6. Coordinating with the Regional Arts & Culture Council ("RACC") before undertaking any maintenance or cleaning of the artwork installed in the Nature Park as part of the capital improvements;

3.2.7. Performing all other responsibilities described in Sections 1 through 6 of this Agreement.

3.3. THPRD shall not make any major modifications or additions to the facilities, projects, and improvements made by Metro pursuant to Section 2 of this Agreement without Metro's written consent. "Major modifications or additions" as referred to in this paragraph include, without limitation, any new structures or parking areas, enlarging a parking area or any structure, and trail additions and realignments other than routine repairs.

3.4. THPRD may use the maintenance building and facilities as a district maintenance facility serving any THPRD facilities, in addition to the Natural Area. Such use may include, without limitation, parking and housing THPRD equipment and vehicles, staff parking, and staff office space.

3.5. All requests for easements, rights of way, and leases on or affecting the Nature Park shall be submitted to Metro and Metro shall process them in accordance with the Metro Easement Policy, Resolution No. 97-2539B, passed by the Metro Council on November 6, 1997, attached hereto as Exhibit D.

4. Natural Area Restoration. All natural area restoration at the Nature Park shall be consistent with the Cooper Mountain Natural Resource Management Plan, attached and incorporated herein as Exhibit E (the "Management Plan"). The current management plan expires in 2010, at which time a new plan will be developed. In the last several years, Metro has completed significant natural area restoration projects in the Nature Park, consistent with the Management Plan, that have involved the removal of non-native and invasive species, prescribed burns, and the planting of native species. Metro and THPRD shall cooperate regarding all natural area restoration activities in the Nature Park, including regarding monitoring and maintenance activities and regarding all plans for new natural area restoration activities in the Nature Park. For a period of five years from the Effective Date, Metro shall

take the lead to coordinate and fund restoration activities on the site, with THPRD's full and active participation and consultation. Over the course of the first term of this Agreement, the parties shall work together to transition the responsibility for leading such restoration activities from Metro to THPRD, with a goal of THPRD taking the lead role, to include funding, in years six through ten, with Metro's full and active participation and consultation. A meeting between Metro and THPRD will be held annually to plan restoration activities for the coming year. This meeting will be scheduled by Metro annually with the meeting date to be established no later than November 30 each year. If this Agreement is renewed as provided in Section 7.,THPRD shall thereafter take the lead to coordinate all restoration activities on the site in accordance with the Management Plan, with Metro's full and active participation and consultation. All restoration activities will be coordinated between Metro and THPRD as it relates to public programming and public access to the Nature Park. This coordination will take place seasonally to ensure the public is protected from any chemical use, prescribed burning, or other restoration activities that may have a negative impact on the public.

5. **Education and Volunteer Programs.** THPRD shall take on the lead role to provide educational programming at the site. Metro shall have the opportunity to consult and give input as to program content. THPRD agrees to allow Metro to offer environmental education programs from time to time. Metro and THPRD will coordinate on volunteer programs at the Nature Park so as to avoid conflicts and maximize citizen participation. Projects may include trail maintenance and repair projects and natural area restoration projects, such as the removal of non-native and invasive plants and the planting of native plants. Metro and THPRD shall provide, schedule, coordinate, and register participants for their own environmental education and volunteer programs at the Nature Park. Metro and THPRD shall retain any fees collected as part of registering participants for their own programs. Metro and THPRD shall cooperate to coordinate scheduling and advertising for all such education and volunteer programs so as to maximize access to the public.

6. **Signage and Acknowledgement.**

6.1. THPRD shall maintain and repair all signage in the Nature Park, including interpretive, directional, traffic, regulatory, and trail signs, substantially to the professional level of appearance, and in the locations, as when installed. All replacement and repair shall be consistent with the original sign design, style, installation, and materials, unless Metro consents to any changes thereto in writing. THPRD shall not relocate any signs without Metro's written consent.

6.2. THPRD shall not install any new permanent signage without Metro's consent regarding content, format, construction, and location.

6.3. THPRD shall recognize and document in any publications, media presentations, or other presentations referencing the Nature Park that are produced by or at the direction of THPRD, that funding for acquisition and construction of facilities at the Natural Area came from the Metro Opens Spaces Bond Measure and the Metro Natural Areas Bond Measure. THPRD's recognition of Metro in written materials shall include Metro's logo

and script of a size equal and comparable to the size of THPRD's logo and script as used in such publications and Metro shall make its graphics available to THPRD upon request for such publications. If THPRD plans and holds any community/media events to publicize the Nature Park, THPRD agrees to provide Metro with written notice of any such event at least three weeks prior to the scheduled event in order to coordinate with and allow for participation by Metro staff and elected officials, and appropriate recognition of the source of funding for acquisition and construction of the Nature Park.

7. **Term; Automatic Renewal.** This Agreement shall continue for a term of ten years, unless modified or terminated as provided herein. This Agreement shall automatically renew for one additional ten-year term unless, not later than ninety (90) days prior to the expiration of the initial term of this Agreement, one of the parties provides the other party with notice that it does not wish to renew this Agreement.

8. **Termination.**

   8.1. Joint Termination for Convenience. Metro and THPRD may, by written agreement signed by both parties, jointly terminate all or part of this Agreement based upon a determination that such action is in the public interest. Termination under this provision shall be effective as provided in such termination agreement.

   8.2. Termination for Cause. Either party may terminate this Agreement in full, or in part, at any time if that party (the "terminating party") has determined, in its sole discretion, that the other party has failed to comply with the conditions of this Agreement and is therefore in default (the "defaulting party"). The terminating party shall promptly notify the defaulting party in writing of that determination and document such default as outlined herein. The defaulting party shall have thirty (30) days to cure the default described by the terminating party. If the defaulting party fails to cure the default within such thirty (30) day period, then this Agreement shall terminate ten (10) days following the expiration of such thirty (30) day period.

9. **Mutual Indemnification.** THPRD shall indemnify and hold Metro and Metro's agents, employees, and elected officials harmless from any and all claims, demands, damages, actions, losses, and expenses, including attorney's fees, arising out of or in any way connected with the performance of this Agreement by THPRD or THPRD's officers, agents, or employees, subject to the limitations and conditions of the Oregon Tort Claims Act, ORS chapter 30, and the Oregon Constitution. Metro shall indemnify and hold THPRD and THPRD's agents, employees, and elected officials harmless from any and all claims, demands, damages, actions, losses, and expenses, including attorney's fees, arising out of or in any way connected with the performance of this Agreement by Metro or Metro's officers, agents, or employees, subject to the limitations and conditions of the Oregon Tort Claims Act, ORS chapter 30, and the Oregon Constitution.

10. **Oregon Constitution and Tax Exempt Bond Covenants.** The source of funds for the acquisition and construction of the Natural Area is from the sale of voter-approved general obligation bonds that are to be repaid using ad valorem property taxes exempt from the

limitations of Article XI, sections 11, 11b, 11c, 11d and 11e of the Oregon Constitution, and that the interest paid by Metro to bond holders is currently exempt from federal and Oregon income taxes. THPRD covenants that it will take no actions that would cause Metro to be unable to maintain the current status of the real property taxes imposed to repay these bonds as exempt from Oregon's constitutional property tax limitations or the income tax exempt status of the bond interest under IRS rules. In the event THPRD breaches this covenant, THPRD shall undertake whatever remedies are necessary to cure the default and to compensate Metro for any loss it may suffer as a result thereof. In such an event, Metro shall work cooperatively with THPRD to address such breach.

11. **Laws of Oregon; Public Contracts.** The laws of the State of Oregon shall govern this Agreement, and the parties agree to submit to the jurisdiction of the courts of the State of Oregon. All applicable provisions of ORS chapters 279A, 279B, and 279C, and all other terms and conditions necessary to be inserted into public contracts in the State of Oregon, are hereby incorporated by this reference as if such provisions were a part of this Agreement.

12. **Assignment.** Neither party may assign any of its rights or responsibilities under this Agreement without prior written consent from the other party, except that a party may delegate or subcontract for performance of any of its responsibilities under this Agreement.

13. **Notices.** All notices or other communications required or permitted under this Agreement shall be in writing, and shall be personally delivered (including by means of professional messenger service) or sent by both (1) electronic mail or fax, and (2) regular mail. Notices shall be deemed delivered on the date personally delivered or the date of such electronic or fax correspondence, unless such delivery is on a weekend day, on a holiday, or after 5:00 p.m. on a Friday, in which case such notice shall be deemed delivered on the next following weekday that is not a holiday.

To Metro:	Director, Metro Parks and Environmental Services 600 N.E. Grand Avenue Portland, OR 97232-2736 Fax: 503-797-1849 Email: teri.dresler@oregonmetro.gov
With Copy To:	Office of Metro Attorney 600 N.E. Grand Avenue Portland, OR 97232-2736 Fax: 503-797-1792 Email: paul.garrahan@oregonmetro.gov
To THPRD:	General Manager Tualatin Hills Park & Recreation District 15707 SW Walker Road Beaverton, OR 97006 Fax: 503-629-6303 Email: dmenke@thprd.org

With Copy To: Superintendent of Natural Resources
Tualatin Hills Park & Recreation District
Natural Resources Department
5500 SW Arctic Dr. #2
Beaverton, OR 97005
Fax: 503-629-6307
Email: bbarbara@thprd.org

14. Severability. If any covenant or provision of this Agreement shall be adjudged void, such adjudication shall not affect the validity, obligation, or performance of any other covenant or provision which in itself is valid, if such remainder would then continue to conform with the terms and requirements of applicable law and the intent of this Agreement.

15. Entire Agreement; Modifications. This Agreement constitutes the entire agreement between the parties and, except as provided in the Master Plan, supersedes any prior oral or written agreements or representations relating to the Nature Park. No waiver, consent, modification, amendment, or other change of terms of this Agreement shall bind either party unless in writing and signed by both parties.

IN WITNESS WHEREOF, the parties hereto have set their hands on the day and year set forth below.

TUALATIN HILLS PARK & RECREATION DISTRICT	**METRO**
By: _____	_____
	Michael Jordan, Chief Operating Officer
Print Name: _____	
Title: _____	
Date: _____	Date: _____

Exhibits:
Exhibit A – Identification of Properties Within the Nature Park
Exhibit B –THPRD Staffing and Compensation Levels
Exhibit C – Metro Renewal and Replacement Policy
Exhibit D – Metro Easement Policy and Metro Resolution No. 97-2539B
Exhibit E – Cooper Mountain Natural Resource Management Plan

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Exhibit A to Metro/THPRD IGA

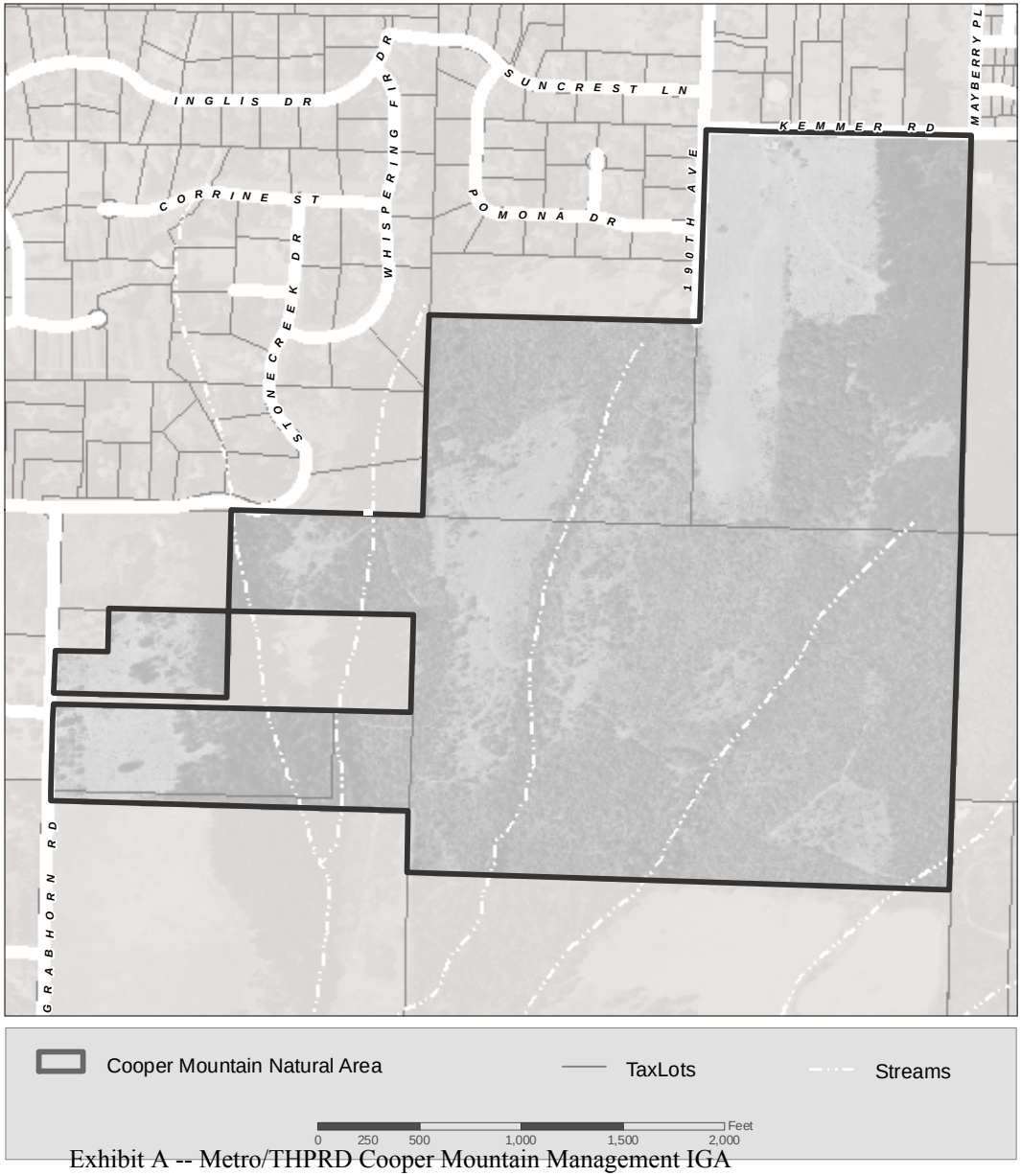

EXHIBIT B

THPRD Staffing and Compensation Levels

Tualatin Hills Park & Recreation District - Cooper Mountain Nature Park - Operation & Maintenance Costs

		Personnel				
		Title	**FTE**	**Wage**	**Notes**	**THPRD in-kind contributions**
Enviro Ed		Program Coordinator	0.5	$ 16,710	Does coordination, scheduling, some teaching.	Interpretive Center Supervisor supervision
		Env. Educator - seasonal	0.25	$ 6,050		
						Volunteer coordination, supplies
Maintenance & Operations		Park Ranger	1	$ 59,230	Includes benefits	Natural Resource Specialist supervision
		Worker - seasonal	0.5	$ 14,276		24 hour Security support
		building maintenance/cleaning		$ 3,960	cleaning, repairs	Maintenance supervision
		mowing/heavy equip support		$ 500		Maintenance supervision
		demand maint support/repair		$ 950		Maintenance supervision
		Personnel	*subtotal*	*$ 101,675*		
		Materials & Services				
		Item	**Qty**	**Cost**	**Notes**	**THPRD in-kind contributions**
Enviro Ed		General operating		$ 3,000	Teaching materials, advertising, outreach, consumables	Use of existing teaching materials as needed.
		Events budget		$ 1,000		Support of PR staff, website
		Mileage		$ 700	Staff would show up here as work place, but may need to go to admin office in own vehicle for supplies, etc.	
Maintenance & Operations		Trail maintenance		$ 2,500	trail surfacing, materials	
		Hazard tree contractors		$ 4,500		THPRD arborist consultation/evaluation time
		Operating supplies		$ 4,500	consumable items (sign repair, trash bags, paper products, cleaning materials, pesticides, plant materials)	
		Utilities				
		water/sewer		$ 625		
		electric		$ 2,000		
		gas		$ 625		
		telecom		$ 1,500		
		garbage/recycle		$ 2,025	$169/month	
		Sonitrol Security		$ 1,728	$144/month	
		Contract services (building related)		$ 800	Vactor, emergencies, electrical…	
		Vehicle rental/maintenance		$ 800	Minimal cost- staff would use existing vehicles when needed or rent special equipment.	
		Staff development		$ 500		
		Materials & Services	*subtotal*	*$ 26,803*		
		THPRD				
		Basic Annual Costs	**Total**	**$ 128,478**		

EXHIBIT C

Metro Renewal and Replacement Policy

Policy (attached)

The sections that specifically deal with renewal and replacement are Page 6, policy 1 and 2 and pages 18-22 Renewal and Replacement.

This provides the information necessary for this IGA. Parks base amount for inclusion to a renewal and replacement listing is much lower than the manual minimum of $10,000. We put on the listing anything of substance that will require replacement with the exclusion of building shells or regular maintenance items to insure adequate future funding to maintain Park assets.

Schedule of Parks Renewal and Replacement Items

Benches	8 years
Signage	10 years
Auto entry gates	15 years
Roof	20 years
Heating systems	20 years
Fencing	20 years
Structures	25 years
Bridges	25 years
Parking lots	25 years
Infrastructure-water lines etc-	30 years

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Capital Asset Management Policies and Instructions

The procedures for the Capital Asset Management Policies (C.A.M.P.) adopted by Council Resolution No. 01-3113 were developed through a cooperative effort of the following members of the C.A.M.P. Team:

Financial Planning, Finance and Administrative Services Department
Casey Short
Karen Feher

Information Technology, Finance and Administrative Services Department
David Biedermann
John Miller

MERC
Bryant Enge
Mark Hunter

Oregon Zoo
Sarah Chisholm
Terry Joeckel
Patty Mueggler

Planning Department
Jenny Kirk

Property Services
Brian Phillips

Regional Parks and Greenspaces Department
Dan Kromer
Jeff Tucker

Solid Waste and Recycling Department
Doug Anderson
Paul Ehinger

Capital Asset Management Policies (C.A.M.P.) and Instructions

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Adopting Resolution

Adopting Resolution No. 01-3113

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF APPROVING METRO CAPITAL ASSET MANAGEMENT) POLICIES	RESOLUTION NO. 01-3113 INTRODUCED BY COUNCILOR BILL ATHERTON

WHEREAS, Metro facilities include capital assets with a total value of over $375 million, and

WHEREAS, the Council Presiding Officer established the System Performance Task Force for the purpose of examining current practices related to the management of Metro's capital assets,

WHEREAS, the task force determined that there is a need to establish a framework of consistent policies to guide the planning and management of Metro's capital assets, and

WHEREAS, the adoption of capital asset management policies will demonstrate Metro's commitment to sound fiscal and financial management, therefore

BE IT RESOLVED,

The Metro Council approves Exhibit A of this resolution, entitled "Capital Asset Management Policies".

ADOPTED by the Metro Council this 18th day of October 2001

David Bragdon, Presiding Officer

APPROVÉ APPROVED METRO COUNCIL CONSEIL MÉTROPOLITAIN METRO

Approved as to Form

Daniel B. Cooper, General Council

C.A.M.P. Policies

Capital Asset Management Policies

Exhibit A

Capital Asset Management Policies

The following policies establish the framework for Metro's overall capital asset planning and management. They provide guidance for current practices and a framework for evaluation of proposals for future projects. These policies also seek to improve Metro's financial stability by providing a consistent approach to fiscal strategy. Adopted financial policies show the credit rating industry and prospective investors (bond buyers) the agency's commitment to sound financial management and fiscal integrity. Adherence to adopted policies ensures the integrity and clarity of the financial planning process and can lead to improvement in bond ratings and lower cost of capital.

1. Metro shall operate and maintain its physical assets in a manner that protects the public investment and ensures achievement of their maximum useful life.

   Ensuring the maximum useful life for public assets is a primary agency responsibility. Establishing clear policies and procedures for monitoring, maintaining, repairing and replacing essential components of facilities is central to good management practices. It is expected that each Metro department will have written policies and procedures that address:

   - *Multi-year planning for renewal and replacement of facilities and their major components;*
   - *Annual maintenance plans.*

2. Metro shall establish a Renewal & Replacement Reserve account for each operating fund responsible for major capital assets.

   Ensuring that the public receives the maximum benefit for their investments in major facilities and equipment requires an ongoing financial commitment. A Renewal & Replacement Reserve should initially be established based on the value of the asset and consideration of known best asset management practices. Periodic condition assessments should identify both upcoming renewal and replacement projects and the need to adjust reserves to support future projects. If resources are not sufficient to fully fund the Reserve without program impacts, the Council will be consider alternatives during the annual budget process. Establishing and funding the Reserve demonstrates Metro's ongoing capacity and commitment to these public investments.

3. Metro shall prepare, adopt and update at least annually a five-year Capital Improvement Plan (CIP). The Plan will identify and set priorities for all major capital assets to be acquired or constructed by Metro. The first year of the adopted CIP shall be included in the Proposed Budget.

   The primary method for Metro departments to fulfill the need for multi-year planning is the Capital Improvement Planning process. The CIP allows a comprehensive look at Metro's capital needs for both new facilities and renewal and replacement of existing ones, and allows the Council to make the necessary decisions to ensure financial resources match forecasted needs.

H:\JOHN\Proposed Capital Asset Management Policy TM4.doc Page 1

Exhibit A

Capital Asset Management Policies

4. Capital improvement projects are defined as facility or equipment purchases or construction which results in a capitalized asset costing more than $50,000 and having a useful (depreciable life) of five years or more. Also included are major maintenance projects of $50,000 or more that have a useful life of at least five years.

   A clear threshold ensures that the major needs are identified and incorporated in financial plans.

5. An assessment of each Metro facility will be conducted at least every five years. The report shall identify repairs needed in the coming five years to ensure the maximum useful life of the asset. This information shall be the basis for capital improvement planning for existing facilities and in determining the adequacy of the existing Renewal & Replacement Reserves.

   A foundation step for capital planning is an understanding of the current conditions of Metro facilities. It is expected that Metro departments have a clear, documented process for assessing facility condition at least every five years. The assessment processes may range from formal, contracted engineering studies to in-house methods such as peer reviews. The assessment should identify renewal and replacement projects that should be done within the following five years. The Renewal & Replacement Reserve account should be evaluated and adjusted to reflect the greater of the average renewal & replacement project needs over the coming five years or 2% of the current facility replacement value.

6. The Capital Improvement Plan will identify adequate funding to support repair and replacement of deteriorating capital assets and avoid a significant unfunded liability from deferred maintenance.

   Using the information provided by facility assessments, Metro departments should use the CIP process to identify the resources necessary to keep facilities in an adequate state of repair. In situations where financial resources force choices between programs and facility repair, the annual budget process should highlight these policy choices for Council action.

7. A five-year forecast of revenues and expenditures will be prepared in conjunction with the capital budgeting process. The forecast will include a discussion of major trends affecting Agency operations, incorporate the operating and capital impact of new projects, and determine available capacity to fully fund the Renewal & Replacement Reserve.

   Incorporation of capital needs into agency five-year forecasts ensures that problem areas are identified early enough that action can be taken to ensure both the maintenance of Metro facilities and integrity of Metro services.

8. To the extent possible, improvement projects and major equipment purchases will be funded on a pay-as-you-go basis from existing or foreseeable revenue sources. Fund Balances above established reserve requirements may be used for one-time expenditures such as capital equipment or financing of capital improvements.

   Preparing a CIP and incorporating it into five-year forecasts enables Metro to plan needed capital spending within foreseeable revenues. This minimizes the more

Capital Asset Management Policies

costly use of debt for capital financing and ensures renewal and replacement of facility components takes place without undue financial hardship to operations.

9. Debt (including capital leases) may only be used to finance capital, including land acquisition, not ongoing operations. Projects that are financed through debt must have a useful service life at least equal to the debt repayment period.

   Because interest costs impact taxpayers and customers, debt financing should be utilized only for the creation or full replacement of major capital assets.

10. When choosing funding sources for capital items, every effort should be made to fund enterprise projects either with revenue bonds or self-liquidating general obligation bonds. For the purpose of funding non-enterprise projects other legally permissible funding sources, such as systems development charges should be considered.

11. Acquisition or construction of new facilities shall be done in accordance with Council adopted facility and/or master plans. Prior to approving the acquisition or construction of a new asset, Council shall be presented with an estimate of the full cost to operate and maintain the facility through its useful life and the plan for meeting these costs. At the time of approval, Council will determine and establish the Renewal & Replacement Reserve policy for the asset to ensure resources are adequate to meet future major maintenance needs.

    New Metro facilities should be planned within the overall business and service objectives of the agency. To ensure that the public gains the maximum utility from the new facility or capital asset, Metro should identify the full cost of building and operating the facility throughout its useful life. Resources generated from its operation or other sources should be identified to meet these needs.

BUDGET COMMITTEE REPORT

CONSIDERATION OF **RESOLUTION NO. 01-3113,** FOR THE PURPOSE OF APPROVING METRO CAPITAL ASSET MANAGEMENT POLICIES

Date: October 18, 2001 Presented by: Councilor Atherton

Committee Recommendation: At its October 10, 2001, meeting, the Budget Committee voted 6-0 to recommend Council adoption of Resolution No. 01-3113. Voting in favor: Councilors Atherton, Bragdon, Burkholder, McLain, Monroe, Park. Voting against: None. Absent: Councilor Hosticka.

Background: John Houser, Metro Council Analyst, presented the staff report. He described the formation of the Systems Performance Task Force in early 2001, and noted that its charge was to evaluate approaches to capital asset management within Metro and return to Council with recommendations for necessary changes or improvements to the existing system.

He stated the Task Force, which began work in July, conducted comprehensive reviews of both departmental and other jurisdictional asset management programs, and determined that practices varied widely both internally and externally. The Task Force determined that the establishment of a set of capital asset management policies applicable agency-wide would be desirable to provide minimum standards and requirements for all Metro departments, and a basis against which Council could evaluate or review programs both agency-wide, and within individual departments.

The proposed policies draw upon existing practice, and also require that capital asset management needs be tied in fiscally with the agency's capital improvement plan. In addition, the policies require that all Metro facilities be assessed every five years, which could result in fiscal impact as potential asset renewal and replacement needs are identified.

Committee Issues/Discussion: There was none.

Key Public Testimony: There was none.

STAFF REPORT

CONSIDERATION OF RESOLUTION NO. 01-3113, FOR THE PURPOSE OF APPROVING METRO CAPITAL ASSET MANAGEMENT POLICIES

Date: October 2, 2001 Presented by: Councilor Atherton

Description

The proposed resolution would establish capital asset management policies. The proposed policies would address issues related to asset maintenance, planning and funding for asset renewal and replacement, the role and content of the Capital Improvement Plan in asset management, and the incorporation of capital needs into the five-year revenue and expenditures forecast.

Existing Law

Metro currently has no Code provisions or written policies related to the management of the agency's capital assets. During the Council's budget review process for the past two years concern has been raised related to the lack of comprehensive agency asset management policies. This discussion has focused the need for policies related to asset maintenance and renewal and replacement of assets. In response to this discussion, the Presiding Officer established a Systems Performance Task Force to review the differing departmental approaches to capital asset management and make recommendations to the Council.

Background and Discussion

The task force began its work in late July. The task force invited representatives from each Metro department to respond to a series of questions and present background information concerning how they manage their capital assets. Task force staff followed up these presentations with meetings with department staffs to gather additional more in-depth information on their asset management programs. The staff also reviewed asset management programs used by other jurisdictions. The task force found that the management systems used by the various Metro departments and by other jurisdictions vary greatly.

As a result of this review, the task force staff submitted a series of draft capital asset management policies. These policies will have three principal effects. First, they provide a general framework for capital asset management. In some cases, they simply place existing practice in writing. For example, one of the policies requires the preparation of a capital improvement plan. In other cases, they establish new policy, such as a requirement that each facility establish Renewal and Replacement Reserves.

Second, they provide minimum standards and requirements related to capital asset management that must be followed by all Metro departments. An example of such a requirement will be that all departments have an annual capital asset maintenance plan.

Third, by establishing these policies, the Council will establish written policies against which it can review the capital asset management programs of individual departments. The policies also

require additional fiscal information be included in the capital improvement plan and the budget that will give the Council a clearer picture of the total capital needs of the agency.

Fiscal Impact

There are several potential fiscal impacts associated with the proposed resolution. The preparation of additional information for the capital improvement plan and proposed budget and the preparation of annual asset maintenance plan may have a small fiscal impact on each department. This effect may vary among the departments depending on the nature of their current asset management programs.

The policies also require that an assessment of all Metro facilities be conducted every five years. Departments would have the flexibility to establish their own written procedures for conducting such assessments. If a department chooses or is required by bond covenants to use an outside vendor, the cost of such an outside review would need to be appropriated through the annual budget process. Departments also could choose a lower cost alternative such as a peer review process.

The assessment process should result in estimates of potential asset renewal and replacement needs for each department. This will give the Council the opportunity to better assess and prioritize the capital and operational needs. Such a prioritization process may result in a shift in the appropriation of funds within individual departments.

EXHIBIT C
Metro Renewal and Replacement Policy

C.A.M.P. Definitions

Definitions for C.A.M.P.

Asset: An item that has a value to the agency and department. Value is expressed as a cost of replacement.

Capital Asset: Land, facilities, major components of facilities, equipment or any other capital asset acquired or constructed by Metro costing $10,000 or more and having a useful life of no less than five years, except for information technology, which must be no less than three years.

Capital Improvement: A project for construction, reconstruction or major renovation, costing in excess of $10,000. These improvements could be divided into three categories: *New*, *Expansion*, and *Replacement*.

- *New* – Projects that construct or acquire a new capital asset.

- *Expansion* – Projects that add capacity to or improve the functional use of existing assets and for which the benefit will be received for a significant time over the life of the asset.

- *Replacement* – Projects that attain or extend the full useful life of existing assets. This can represent either total or partial replacement.

Maintenance: Minor alteration, ordinary repair or effort necessary in order to preserve or repair an asset due to normal wear and tear.

Maintenance is work and effort (project, staff time and/or materials) necessary to repair an asset so that it will reach its designated life span or retain market value if replaced for technological or economical reasons. (This would occur as in the replacement of a "function" for a more cost-effective solution vs. replacement of a physical asset.)

("Maintenance" is contrasted with "renewing" an asset. Renewing is “renewal,” a refurbishment that will extend the life of the asset beyond its current expected life span. Putting oil coating on an asphalt sidewalk is to maintain it; replacing the asphalt is renewing it).

Renewal and Replacement: Construction, reconstruction or major renovation on assets. Renewal and replacement does not include minor alteration, ordinary repair or maintenance necessary in order to preserve or repair an asset.

Renewal and Replacement Reserve: A new or expanded asset requires periodic major maintenance to ensure it meets its full useful life. When a new Metro capital asset is acquired or constructed, a renewal and replacement reserve should be set aside each year unless an alternative more specific approach is provided. This is not intended to create a fund for replacement of

buildings but is intended for the maintenance of the components of new facilities. The entire Renewal and Replacement is to be calculated net of revenue from anticipated grants, donations, contributions, bond funding, etc.

The above categories of capital improvement for the purpose of C.A.M.P. are limited to those improvements that are for Renewal and Replacement.

EXHIBIT C
Metro Renewal and Replacement Policy

Guidelines

Renewal and Replacement Guidelines

The purpose of these guidelines is to establish minimum standards for departments planning for renewal and replacement needs. Each department needs to include these minimum standards in their department's renewal and replacement practices.

Instructions

As a first step in renewal and replacement planning, establish your department's objectives for asset management. The management philosophy and business mission drives the level of maintenance performed (and the attendant cost).

The lowest acceptable level is that maintenance necessary to maintain the facility in light of public safety and building code issues. It would not include efforts to cosmetically upgrade or enhance the facility or to provide more efficient or effective systems, such as lighting or HVAC energy saving devices. The management goal is likely that the facility will be de-commissioned when it is no longer reasonable to repair it.

The intermediate level is that necessary to do business in a manner that meets the effective needs of the business and customers. It includes the maintenance of infrastructure elements, such as HVAC, roofing, roads, paths and the like. It does not include cosmetic or decorative projects to improve the look or attractiveness of the structure.

The highest level is all of the other levels and the associated work to continue (and perhaps increase) the attractiveness of the facility to customers, thus benefiting the revenue for use of the facility.

Initially, a full listing of assets should be made. If accurate records do not exist, a physical inventory should be compiled. The purpose of listing Capital Assets is to facilitate planning for the replacement of the assets or their repair to maintain or extend their useful life. For Metro's Renewal and Replacement planning use this listing should have at the minimum, assets valued at $10,000 or more (it is, however, acceptable to list assets of a lower value if this is essential to your planning efforts). The schedule should have at least five years of renewal and replacement needs on the current report and accommodate out years (years that go beyond the schedule) to have a full understanding of total current, as well as future, renewal and replacement needs of your department. In addition, this listing will enable effective, efficient record keeping as well as facilitate physical examination of those assets. (A sample listing is attached.)

The replacement cost should be established. When first putting an asset into use, that replacement cost will be the cost of the asset. When estimating

replacement cost of assets, find out the cost of acquiring a new asset of equal utility expressed in current dollars.

The remaining life of the asset should be established. If purchase date cannot be established an estimate should be made.

Add each new asset over $10,000 to this schedule when acquired. This step is essential for this planning tool to remain effective.

At planning time, annually review the full listing from the schedule. The purpose of this review is three-fold: (1) It identifies what you should be planning to do in the next few years so that you can budget for those plans. (2) It provides information to make sure that you are adequately planning for future renewal and replacement needs by giving you an opportunity to review your current and required reserve levels. (3) It gives you a basis for understanding present and future funding needs that can be clearly articulated.

At a minimum, the following information on that listing is essential to those planning efforts. Refer to the sample Renewal and Replacement Schedule, shown condensed on page 18 and full-size on page 26 of this manual, to better understand the following explanation of each section of the sample form.

Location of the Asset – This should be specific enough to physically locate the asset. Group assets together by location.

Asset – Give a description of the asset or component of an overall asset (e.g., carpet replacement) that has a separate life and replacement need. For repeat assets make some identification that makes them unique enough to identify. Decide what names will be used for the asset so it will be possible to sort large lists at various locations that may use the same asset and can be purchased in bulk.

Year Installed – This would be the first year put in service or last major renovation creating a new or extended useful life.

Life of the Asset or the Remaining Useful Life of the Asset – Assets that have deferred maintenance or have “lived” longer than anticipated are negative numbers in remaining life.

Year Work Required – This is the year this asset should be reviewed.

FY xxxx-xx – This is the year in which the next action for the asset should be taken. The plan should include all assets, including buildings. Buildings are to be listed in a manner that allows their removal from the renewal and replacement calculation, but also includes them for long-term capital asset planning needs. The listing should have a column for each year needed to represent asset life. Depending on the useful life of included assets, it can be as long as forty years.

In the example, a column is added for years that are not displayed in the plan. This column, when added to the current projects, would total up to give the full expected “replacement value” of assets in future years. The cost of acquiring a new asset of equal utility should be expressed in current-year dollars. If this cost is not available from departmental records, it may be available from the fixed asset or insurance records in the Finance and Administrative Services Department or Property Services.

Deferred – Note which assets are past their useful life. The replacement costs of these assets will show in the current year of the plan.

Condition – Grade the overall condition of each asset using the following letter scale:

- **A** Excellent – No discernible deficiencies; no major repairs are anticipated within the next five years.
- **B** Good – Deficiencies that are not potentially urgent, but which, if deferred longer than 3 to 5 years, will affect the use of the asset or cause significant damage to it.
- **C** Fair – Potentially urgent deficiencies which, if not corrected within two years, will become urgent needs.
- **D** Poor – Urgent needs to be completed within one year, such as correcting a safety problem, eliminating damaging deterioration, complying with environmental or other codes.
- **F** Failure – The asset no longer functions fully or partially, or is no longer in use due to safety concerns. It is more cost effective to demolish or surplus the asset or replace with new than to renew or repair the asset.

Not to Replace – Note here which assets will not be replaced. Do not include these assets in your renewal and replacement calculations. See condensed example below and full-size sample on page 26:

RENEWAL AND REPLACEMENT SCHEDULE

Location of Asset	Asset	Year Installed	Remaining Life	Year Work Required	FY 2003-04	FY 2004-05	FY 2005-06	FY 2006-07	FY 2007-08	FY 2008-09	Out Yrs	Total	Defered	Condition	Not to Replace
Metro Center	HVAC	1995	10	2005			25,000					**25,000**			
Metro Center	Roof	1995	15	2010							75,000	**75,000**			
Metro Center	Carpets	1995	-2	2001	25,000							**25,000**	x		
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TOTAL					**25,000**	**-**	**25,000**	**-**	**-**	**-**	**75,000**	**125,000**			

The following are acceptable methods of calculating Renewal and Replacement numbers:

A new or expanded asset requires periodic major maintenance to ensure it meets its full useful life. There are two acceptable methods of calculating renewal and replacement funding needs: a *Percentage of Total Assets* method and a *Specific Calculation* method.

- *Percentage of Total Assets* – This method calls for taking a specific percentage of total asset value. The asset value used is the cost of the asset or the current estimated value. The recommended industry standard is 1 - 4 percent of that value for annual renewal and replacement costs. When a Metro department acquires or builds a new asset, a renewal and replacement reserve of 2 percent should be set aside each year unless an alternate, specific approach is provided. It is possible the specific percentage used will be more or less than 2 percent, dependent on what is appropriate to the facility to which it is being applied.

- *Specific Calculation Method* – When first putting an asset to use, that replacement cost will be the cost of the asset. Later, when estimating replacement cost of assets, find out the cost of acquiring a new asset of equal utility expressed in current dollars.

  The life of the asset should be established. The annual renewal and replacement cost would be the total replacement value of the asset, minus what is already in reserves, divided by the remaining years. Adjust the amount set aside by potential earnings on the reserve balances.

Other Essential Considerations:

Regardless of which of the two methods of calculation are employed, there are important considerations and steps necessary to have an effective, reasonably funded renewal and replacement-funding program.

- Renewal and replacement reserves are not expected to fund major capital assets such as large buildings.

- Determine if component replacement makes sense compared to overall “asset” replacement. Would it be less expensive to replace the entire asset than the individual components?

- Renewal and replacement reserves are not to fund routine maintenance. Some routine maintenance can be averted in the replacement process.

- At least once annually, perform a facility assessment using department staff. Use this condition assessment to review your renewal and replacement schedule for any possible difference from calculated expected remaining life and actual asset condition.

- At the time of the annual assessment, review the amount in total renewal and replacement reserve and the amount set aside for specific asset replacement for reasonableness.

- At a minimum, calculate renewal and replacement on all assets valued at $10,000 or over. If a department wishes to calculate renewal and replacement on assets valued at less than $10,000, that is acceptable.

- Determine which assets will not be replaced and do not include a reserve for them.

- Determine if changes in function or technology make it more reasonable to replace an asset than renew it.

- Adjust the reserve amount for risk factors associated with unexpected losses.

- Where there is a shortage of funding for renewal and replacement, public and employee safety should be the first consideration. Secondary to that are renewal and replacement of those assets critical to ongoing operations.

Maintenance

Maintenance

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.

Maintenance is work and effort (project, staff time and/or materials) necessary to repair an asset so that it will reach its designated life span or retain market value if replaced for technological or economical reasons. (This would occur as in the replacement of a "function" for a more cost-effective solution vs. replacement of a physical asset.)

("Maintenance" is contrasted with "renewing" an asset. Renewing is “renewal,” a refurbishment that will extend the life of the asset beyond its current expected life span. For example, putting oil coating on an asphalt sidewalk is to maintain it; replacing the asphalt is renewing it).

Facilities maintenance is the normally funded, ongoing program for upkeep of buildings, equipment, roads, grounds, and utilities required to keep a facility in a condition adequate to meet the Department’s mission to provide program and public service. Maintenance in this normal program includes the planned, preventive, and emergency maintenance required to provide a safe, healthful, and secure environment.

Departments defer certain maintenance projects beyond the time of needed or planned completion due to budget restrictions. These projects constitute a deferred maintenance backlog, and the Department should establish a Deferred Maintenance Program to obtain funds to complete these projects. The deferred maintenance backlog should be specific to what is deferred and the estimated dollar amount necessary to complete that maintenance.

Each department is required to have an **Annual Maintenance Plan**. This plan should incorporate sound applications of three basic elements of management – *organization*, *measurement*, and *control*, defined as follows:

- *Organization* – a scheduled plan of maintenance updated annually and monitored at least monthly.

- *Measurement* – an established system to determine progress in meeting the maintenance plan. Depending on the size of the system, this would be measured weekly or monthly (e.g., percentage of projects completed, number detailed, etc.).

- *Control* – a plan to monitor the established system to ensure compliance and take remedial actions as necessary.

Planned Maintenance

Metro policy is to maintain its physical assets in a manner that protects the public investment and ensures achievement of their maximum useful life. To meet this mission, the best available planned management techniques, including electronic data processing, are to be used.

Preventive Maintenance

Preventive maintenance is that portion of the overall maintenance program that provides the periodic inspection, adjustment, minor repair, lubrication, reporting, and data recording necessary to minimize building equipment and utility system breakdown and maximize system and equipment efficiency.

Preventive maintenance uses planned services, inspections, adjustments, and replacements designed to ensure maximum utilization of equipment at minimum cost.

This program anticipates wear, tear, and change and applies a continuous action to ensure peak efficiency and minimum deterioration.

Preventive maintenance includes cleaning, adjustment, lubrication, minor repair, and parts replacement. All of these functions are performed on scheduled frequencies in accordance with written maintenance instructions.

Emergency Maintenance

Emergency maintenance is the repair or replacement of Facility components and equipment requiring immediate attention because the functioning of a critical system is impaired or because health, safety, or security of life is endangered. Emergency maintenance supersedes all other categories of maintenance.

EXHIBIT C
Metro Renewal and Replacement Policy

Sample Schedule

Sample Renewal and Replacement Schedule

RENEWAL AND REPLACEMENT SCHEDULE															
Location of Asset	**Asset**	**Year Installed**	**Remaining Life**	**Year Work Required**	**FY 2003-04**	**FY 2004-05**	**FY 2005-06**	**FY 2006-07**	**FY 2007-08**	**FY 2008-09**	**Out Yrs**	**Total**	**Defered**	**Condition**	**Not to Replace**
Metro Center	HVAC	1995	10	2005			25,000					**25,000**			
Metro Center	Roof	1995	15	2010							75,000	**75,000**			
Metro Center	Carpets	1995	-2	2001	25,000							**25,000**	x		
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TOTAL					**25,000**	**-**	**25,000**	**-**	**-**	**-**	**75,000**	**125,000**			

EXHIBIT D
Metro Easement Policy and Metro Resolution No. 97-2539B

BEFORE THE METRO COUNCIL

IS A COMPLETE AND EXACT COPY OF THE ORIGINAL THEREOF.
Rebecca V. Shoemaker, Assistant
Clerk of the Metro Council

FOR THE PURPOSE OF APPROVING GENERAL POLICIES RELATED TO THE REVIEW OF EASEMENTS, RIGHT OF WAYS, AND LEASES FOR NON-PARK USES THROUGH PROPERTIES MANAGED BY THE REGIONAL PARKS AND GREENSPACES DEPARTMENT.

RESOLUTION NO. 97-2539B

Introduced by
Mike Burton, Executive Officer

WHEREAS, Metro currently owns and manages more than 6,000 acres of regional parks, open spaces, natural areas, and recreational facilities; and

WHEREAS, additional lands are being acquired through the Open Space, Parks, and Streams Bond Measure, approved by voters in May of 1995; and

WHEREAS, the primary management objectives for these properties are to provide opportunities for natural resource dependent recreation, protection of fish, wildlife, and native plant habitat and maintenance and/or enhancement of water quality; and

WHEREAS, Metro will be approached with proposals to utilize regional parks, open spaces, natural areas, and recreational facilities property for utility, transportation, and other non-park purposes; and

WHEREAS, Metro seeks to insure that these uses have no negative impact upon the primary management objectives of Metro Regional Parks and Greenspaces properties; and

WHEREAS, it would be in Metro's best interest to provide for the orderly evaluation and consideration of proposals to utilize portions of Metro Regional Parks and Greenspaces properties for utility, transportation and other non-park uses; NOW THEREFORE,

BE IT RESOLVED, that the Metro Council hereby adopts the policy attached as Exhibit "A" for any and all requests related to formal proposals for the use of Metro Regional Parks and Greenspaces properties for the purposes noted therein.

ADOPTED by the Metro Council this 6th day of November, 1997.

Jon Kvistad, Presiding Officer

ATTEST:

Recording Secretary

Approved as to Form:

Daniel B. Cooper, General Counsel

EXHIBIT D
Metro Easement Policy and Metro Resolution No. 97-2539B

METRO POLICY RELATED TO THE REVIEW OF EASEMENTS, RIGHT OF WAYS, AND LEASES FOR NON-PARK USES

Metro owns and manages, either on its own or in partnership with other government and private entities, several thousand acres of regional parks, open spaces, natural areas and recreational facilities. These facilities are maintained to promote and preserve natural resources and recreational opportunities for the public consistent with the Greenspaces Master Plan adopted by the Metro Council in 1992, the Open Spaces Bond Measure approved by the voters in 1995 and other restrictions limiting the uses of specific properties in existence at the time of its acquisition by the public. Nothing in this policy shall be construed to allow these facilities to be used in any manner which detracts from this primary purpose. This policy is written from the perspective of Metro as the property owner, however, in those cases in which Metro co-owns a property with other entities, all decisions concerning the use of the property in question will be fully coordinated with the other owners. In addition, all new development and all proposed work within Water Quality Resource Areas or other environmentally sensitive work will be conducted in accordance with Metro or local government policies, to include where appropriate, application for permits and completion of environmental reviews. In the event that local government policies are less restrictive than the Metro Model ordinances, Metro will apply the more restrictive Metro policies.

Regarding requests for easements, right of ways, and leases for non-park uses in Metro owned or managed regional parks, natural areas or recreational facilities, it is Metro's policy to:

1) Provide for formal review of all proposed easements, right of ways, and leases for non-park, uses by the Regional Parks and Greenspaces Advisory Committee, the Regional Facilities Committee and the full Council. Notwithstanding satisfaction of the criteria set forth herein, the final determination of whether to approve a proposed easement, right of way, or lease is still subject to the review and approval by the full Metro Council.

2) Prohibit the development of utilities, transportation projects and other non-park uses within corridors or on sites which are located inside of Metro owned or managed regional parks, natural areas, and recreational facilities except as provided herein.

3) Reject proposals for utility easements, transportation right of ways and leases for non-park uses which would result in significant, unavoidable impacts to natural resources, cultural resources, recreational facilities, recreational opportunities or their operation and management.

4) Accommodate utility easements, transportation right of ways or other non-park uses when the Regional Parks and Greenspaces Department (the Department) determines that a proposed easement, right of way or non-park use can be accommodated without significant impact to

EXHIBIT D
Metro Easement Policy and Metro Resolution No. 97-2539B

natural resources, cultural resources, recreational facilities, recreational opportunities or their operation and management; and that the impacts can be minimized and mitigated.

5) Require full mitigation and related maintenance, as determined by the Department, of all unavoidable impacts to natural resources, recreational facilities, recreational opportunities or their operation and management associated with the granting of easements, right of ways, or leases to use Metro owned or managed regional parks, natural areas or recreational facilities for non-park uses.

6) Limit rights conveyed by easements, right of ways, and leases for non-park uses to the minimum necessary to reasonably accomplish the purpose of any proposal.

7) Limit the term of easements, right of ways and leases to the minimum necessary to accomplish the objectives of any proposal.

8) Require "reversion", "non-transferable" and "removal and restoration" clauses in all easements, right of ways and leases.

9) Fully recover all direct costs (including staff time) associated with processing, reviewing, analyzing, negotiating, approving, conveying or assuring compliance with the terms of any easement, right of way, or lease for a non-park use.

10) Receive no less than fair market value compensation for all easements, right of ways, or leases for non-park uses. Compensation may include, at the discretion of the Department, periodic fees or considerations other than monetary.

11) Require full indemnification from the easement, right of way or lease holder for all costs, damages, expenses, fines or losses related to the use of the easement, right of way or lease. Metro may also require appropriate insurance coverage and/or environmental assurances if deemed necessary by the Office of General Counsel.

12) Limit the exceptions to this policy to: grave sales, utilities or transportation projects which are included in approved master/management plans for Metro regional parks, natural areas and recreational facilities; projects designed specifically for the benefit of a Metro regional park, natural area, or recreational facility, or interim use leases as noted in the Open Spaces Implementation Work Plan.

13) Provide for the timely review and analysis of proposals for non-park uses by adhering to the following process:

a) The applicant shall submit a detailed proposal to the Department which includes all relevant information including but not limited to: purpose, size, components, location, existing conditions, proposed project schedule and phasing, and an analysis of other alternatives which avoid the Metro owned or managed regional park, natural area or recreational facility which are considered infeasible by the applicant. Cost alone shall not constitute infeasibility.

EXHIBIT D
Metro Easement Policy and Metro Resolution No. 97-2539B

b) Upon receipt of the detailed proposal, the Department shall determine if additional information or a Master Plan is required prior to further review and analysis of the proposal. For those facilities which have master plans, require that all proposed uses are consistent with the master plan. Where no master plan exists all proposed uses shall be consistent with the Greenspaces Master Plan. Deficiencies shall be conveyed to the applicant for correction.

c) Upon determination that the necessary information is complete, the Department shall review and analyze all available and relevant material and determine if alternative alignments or sites located outside of the Metro owned or managed regional park, natural area, or recreational facility are feasible.

d) If outside alternatives are not feasible, the Department shall determine if the proposal can be accommodated without significant impact to park resources, facilities or their operation and management. Proposals which cannot be accommodated without significant impacts shall be rejected. If the Department determines that a proposal could be accommodated without significant impacts, staff shall initiate negotiations with the applicant to resolve all issues related to exact location, legal requirements, terms of the agreement, mitigation requirements, fair market value, site restoration, cultural resources, and any other issue relevant to a specific proposal or park, natural area or recreational facility. The Department shall endeavor to complete negotiations in a timely and business-like fashion.

e) Upon completion of negotiations, the proposed agreement, in the appropriate format, shall be forwarded for review and approval as noted in item "1" above. In no event shall construction of a project commence prior to formal approval of a proposal.

f) Upon completion of all Metro tasks and responsibilities or at intervals determined by the Department, and regardless of Metro Council action related to a proposed easement, right of way or lease for a non-park use, the applicant shall be invoiced for all expenses or the outstanding balance on expenses incurred by Metro.

g) Permission from Metro for an easement or right of way shall not preclude review under applicable federal, state or local jurisdiction requirement.

EXHIBIT E
Cooper Mountain Natural Resource Management Plan

Table of Contents

EXHIBIT E
Cooper Mountain Natural Resource Management Plan

Purpose

The purpose of the Cooper Mountain Natural Area Strategy is to protect and restore the oak woodland and prairie community on site. A majority of the oak woodland community in the Willamette Valley has been reduced by 80% through agriculture, logging, urban development and lack of fire. In addition, virtually all native prairie is gone with less than one percent remaining, a majority of which is in private ownership (Defenders of Wildlife, 1998), making upland prairies the Willamette Valley's rarest habitat.

Cooper Mountain Natural Area is unique because of the presence of both oak woodlands and an upland prairie, which fosters the Willamette Valley's third largest population of white rock larkspur, a federal species of concern. Metro's management priorities include using aggressive restoration techniques to bring these habitats back to the 1852 pre settlement vegetation cover, protecting the white rock larkspur population, and increasing the structure and diversity of habitat for native wildlife. The management strategy recommends using prescribed burns[1] to restore these communities because both oak woodlands and prairies are fire dependant. Other restoration techniques will include mowing and/or chemical methods to manage invasives, plant native vegetation and provide structure to increase habitat for wildlife. Monitoring will be conducted to measure the success of restoring rare communities and of increasing wildlife habitat.

The management strategy also provides a record of the existing natural features on the site including soils, hydrology, wetlands and natural communities. Detailed resource information is attached in the appendices.

Summary of Management Strategy

Cooper Mountain Natural Area is a 231-acre site located in the southwest corner of Beaverton in Washington County, Oregon. It is made up of Columbia basalt flows that have been folded and uplifted over millions of years, overlain by a thin layer of soil. The site is located at an elevation of 550 to 755 feet on the southwest slopes of Cooper Mountain. This unique exposure, elevation and thin soil layer created a mosaic of oak woodlands, prairies and closed mixed forest. The site is also intersected by five seasonal tributaries of Lindow Creek. The oak woodland and prairie habitats are considered rare in the Willamette Valley, making the Cooper Mountain Natural Area a unique site. These habitats are home to nine plant and wildlife species that have been identified at the state and federal level as "sensitive species" or "species of concern"- species at risk of being listed as threatened or endangered. In addition, the site is home to the Willamette Valley's third largest population of white rock larkspur, a federal species of concern.

[1] A fire set and controlled by humans to achieve some management objective including restoring sites and reducing fuel load

Metro's management goals and recommendations will protect and restore these rare communities and create diversity and structure for a variety of native wildlife. Habitat and wildlife monitoring will ensure that the goals and recommendations of the management strategy are met. Restoration and monitoring goals and objectives are summarized below.

Management Goals

The Cooper Mountain Master Plan was developed from a public involvement process that resulted in eight planning goals for the site. Goal 1 relates to the protection and enhancement of Cooper Mountain's unique natural resource. Site-specific objectives derived from Goal 1 include:

- Prioritize management and monitoring of site according to available financial resources.
- Identify, protect and manage the oak woodland and prairie habitats using appropriate tools and techniques to restore site conditions and reduce invasive species.
- Close informal trails to decrease fragmentation of site for wildlife and plants.
- Increase connectivity of habitats to other similar habitats in the surrounding landscape for movement of wildlife.
- Create complex layers of forest canopies and structures, such as snags and woody debris, to improve wildlife habitat.
- Complete establishment of the closed mixed forest in the north central, central, southwest and southeast portions of the Cooper Mountain Natural Area.

Management Recommendations

Management recommendations are prioritized to create a viable, diverse habitat for native wildlife and plant populations.

1. Oak woodland: Oak woodland is considered a high priority for management because of its rarity in the Willamette Valley. Management of invasive species includes controlled burns and actions that mimic fire such as cutting, mowing and chemical applications. The oak woodland will be expanded on site and managed to increase regeneration and create snags and downed logs.

2. Quarry: Management of the ponded quarry, which is habitat to the northern red-legged frog, a federal species of concern and state vulnerable species, includes increasing cover by planting more trees and adding more structural elements such as woody debris, to provide hiding places.

3. Prairie: The prairie is also considered high priority because of its rarity in the Willamette Valley. Management of the prairie will decrease invasive species by using controlled burns, mowing, grazing, and/or chemical applications. Informal

trails will be decommissioned and a long-term strategy will be developed to discourage them.

4. Closed Mixed Forest: The closed mixed forest at the north central, central, southwest and southeast sections of Cooper Mountain Natural Area is also considered high priority because it has been intensively replanted and requires active management to help the saplings reach the "free to grow stage". Management includes reducing invasive species through physical and chemical treatments and managing the forest to attain "old growth" characteristics by thinning stands to attain vertical and horizontal diversity for insects, birds and mammals.

5. Riparian: The riparian habitat is classified as a medium level priority for management because the streams are seasonal, non-fish bearing and invasive species are minimal. Forest growth and canopy cover closure will reduce the invasive species over time. Efforts will also be made to work with willing landowners to maintain connectivity of Lindow Creek with the Tualatin River through conservation actions, purchase of conservation easements or use of fee simple acquisitions.

6. Closed Mixed Forest: The closed mixed forest at the northeast end of the site is given the lowest priority for management because it has a closed canopy cover and a minimum level of invasive species in the understory. Management actions include creating "old growth" characteristics by thinning the forest, creating snags and down wood and forming a multi-layered forest canopy for insects, birds and mammals.

Monitoring Recommendations

The monitoring plan will 1) document changes to the condition of the priority habitats, 2) record plant and wildlife numbers and 3) measure success towards achieving the management objectives. Management recommendations will change if monitoring indicates that objectives have not been met over time.

1. Oak woodlands: The shrub and herb cover in the oak woodlands will be monitored every other year using ocular estimates to determine if native plant cover is increasing in the understory. Birds will be counted three times a year during the breeding season using the habitat-based point protocol. The western gray squirrel numbers will be monitored on an annual basis during breeding season.

2. Quarry: The breeding success of the red-legged frog will be monitored annually using the timed visual survey.

3. Prairie: The white rock larkspur population will be counted once every two to three years using the nested frequency method to determine if native species are thriving.

4. Mixed Forest Habitat: The increase in native species cover in the north central, east and south of the site will be determined using ocular estimates inside 1-meter square plots every other year, starting in 2005.

Property Report

Location

Cooper Mountain Natural Area is a 231-acre site located in Beaverton, Oregon (Figure 1). It is located in the southeast corner of Township 1S, Range 2W, Section 25 in Washington County.

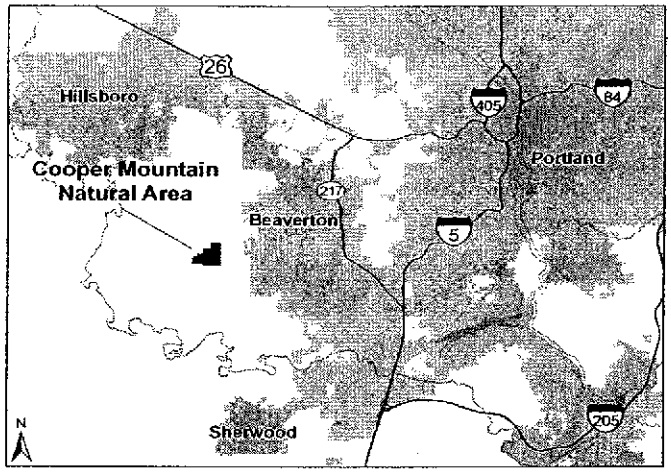

Figure 1: Location of Cooper Mountain Natural Area

Ownership

There are no written records from 1852 to 1930 that describe the Cooper Mountain Natural Area. In 1930, the Army Corps of Engineers developed the first aerials of the site. The photos, dating from 1930 to 2000, and tax lot maps indicate that Cooper Mountain Natural Area was a composite of land parcels with several owners. These parcels were used for different purposes such as farming, grazing, quarrying and timber harvesting (Figure 2). A description of activities undertaken on the tax lots is listed below:

1. Tax lots 3702, 3700 and 3701. The north half of these lots was in agriculture from 1930 to 1990. The south half was forested and logged in the 1990's.

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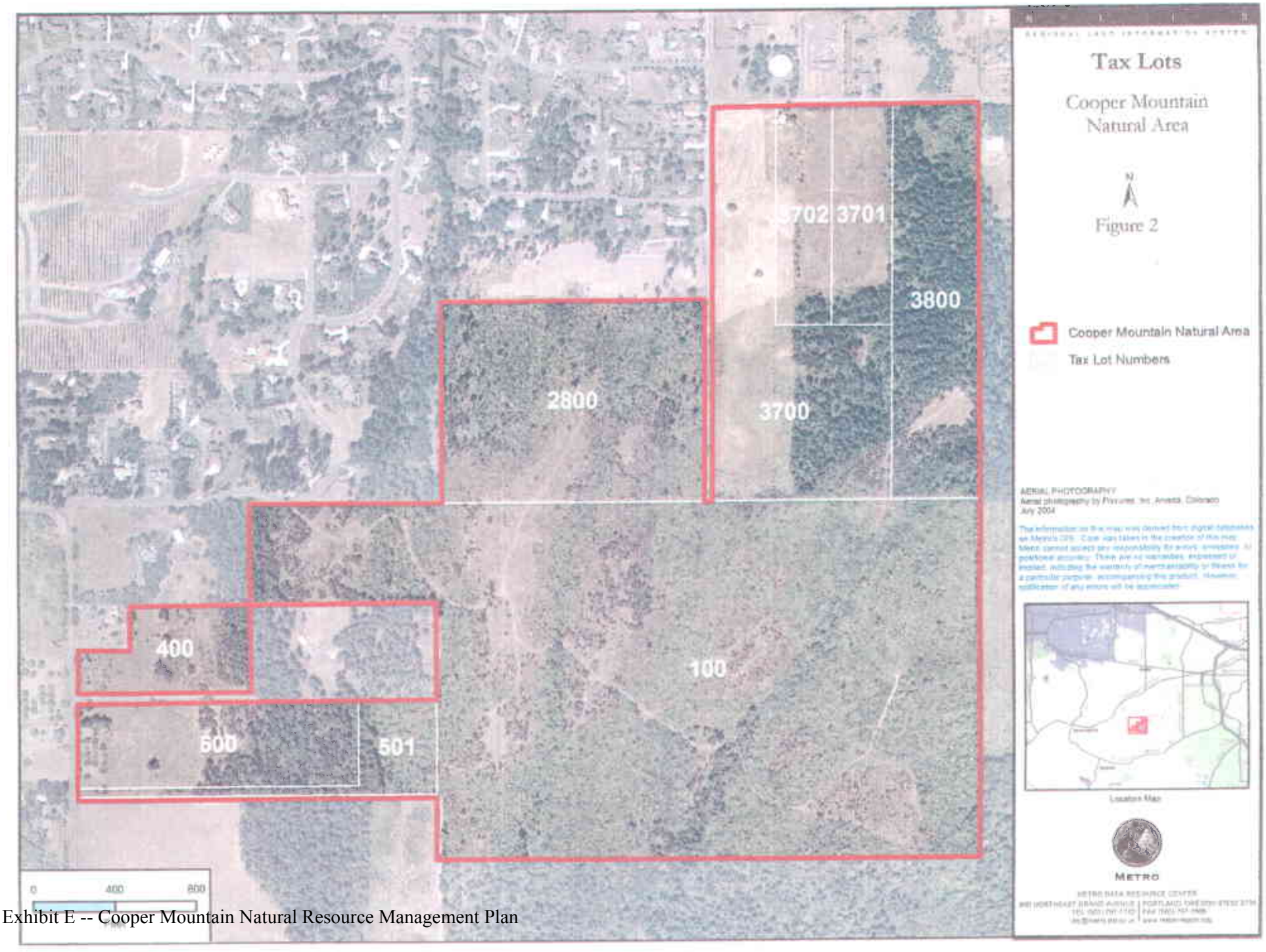

2. Tax lot 3800. The conifer forest was logged and cleared in 1930 and again in 1982. A crescent shaped prairie area located in the south portion of the lot was mapped in the 1852 government land survey and was identified in a 1930 aerial photo. A trail traversing the area from north to south was built prior to 1980.

3. Tax lot 2800 and 0100. The forest on these lots was logged and cleared in 1936. Re-growth took place on both lots between 1936 and 1980, except for the 5-acre prairie that crosses both lots at the western end of the site. The prairie was covered with grasses and shrubs. In 1980, the prairie was crisscrossed with dirt roads used for off-road activities. Logging roads that crossed the site north/south and east/west were also built. Two gravel quarries were opened around this time. One is located on lot 0100 north of the east-west logging road. The other quarry was located north of the same logging road but west of 0100. The lots were logged again in 1994-1995.

Current Land Uses

Metro purchased 231 acres on Cooper Mountain from willing landowners and consolidated the parcels in 1997. Most of the site was clear-cut in 1996. Between 1996 and 2003, Metro removed invasive plants, replanted the clearcuts and conducted prescribed burns (see section on management actions). Historically, neighbors and nearby residents built trails for mountain biking, hiking, exercising dogs and horseback riding. Garbage dumping, and littering also occurred on the site. Currently, Metro is actively restoring habitat and closing informal trails.

Resource Inventory

Major Features

Cooper Mountain Natural Area is located between 550 and 755 feet elevation on the southwest slopes of Cooper Mountain. This unique exposure and elevation, in addition to the thin soils formed over basalt rocks, has resulted in a mosaic of oak woodlands, prairies and closed mixed forest. The site is intersected by five intermittent tributaries that flow south into Lindow Creek which in turn flows into the Tualatin River. The streams are characterized by narrow, steep-sided ravines with broader flat ridges between the stream corridors. This mixed topography contributes to the diversity of plant and animal communities on the site.

Geology

Cooper Mountain's underlying bedrock is comprised of Columbia River basalt flows that have been gently folded and uplifted over millions of years. Fluid lava flows originally covered much of the northern Willamette Valley with a nearly level surface up to 1000 feet thick in places. Subsequent folding, faulting, and uplift resulted in the area's higher hills including the Portland Hills, Bull Mountain, and Cooper Mountain.

Quarrying activities have exposed multiple layers of basalt within the Cooper Mountain Natural Area at several locations. These layers differ for a variety of reasons including, but not limited to, the degree of fracturing, as well as different rates of weathering. The uppermost basalts, which are part of the Grande Ronde sequence of flows, are typically more fractured or cracked than flows at lower elevations. This network permits surface water to percolate through bedrock more quickly in some locations than in others.

Soils derived to a large extent from windblown silts overlying the basalt flows were deposited during the Pleistocene ice ages. The thickness of these deposits varies greatly depending on the prevailing wind direction during those periods.

Historical Context

Pre Settlement

The oldest record of land cover on Cooper Mountain is from the 1852 General Land Office Land Cover records, township and section line survey. Notes from this time are believed to approximate vegetation cover prior to European settlement. Cooper Mountain was a mesic mixed conifer forest with a mostly deciduous understory. Species listed for this mixed conifer forest included Douglas fir, western hemlock, red cedar, grand fir, big leaf maple, yew dogwood, white oak and red alder. To the immediate northwest of the site, the survey lists a Douglas fir forest with no oak; to the northeast of the site, the survey notes a conifer-dominated woodland; and to the immediate southwest of the site (along what is now Grabhorn Road), the survey notes a scattering of thinly timbered Douglas fir-white oak woodland (Figure 3). A small prairie located at the eastern edge of the site can still be found there today.

Historic Land Use

An inquiry to the State Historic Preservation Office archaeologist reveals that there is no known archaeological site on this property. However, native people, such as the Atfalati tribe, may have used the site to burn, gather acorns and hunt for grouse and quail. The Atfalati lived around the Tualatin River Valley and roamed between the Willamette River and the slopes of the Coast range during different seasons and at different elevations. They practiced controlled burning to hunt deer and renew the open area for camas. The 1852 records of vegetation show that the south face of Cooper Mountain overlooking the Tualatin Valley was partially comprised of oak woodlands and open prairie amidst the conifer stands, indicating that Native American burning practices may have extended up the southern slope of the mountain.

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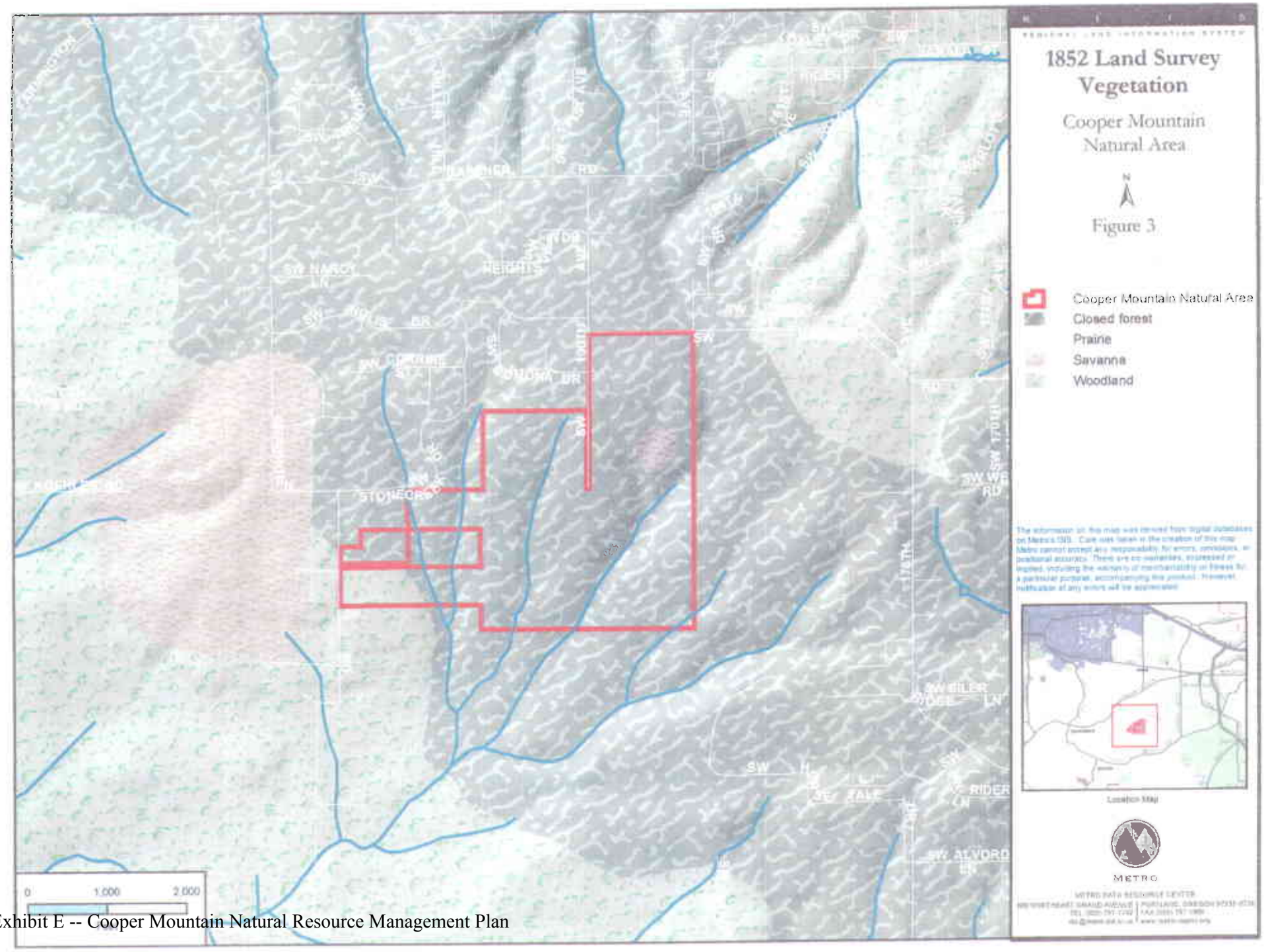

Existing Conditions

Soils

Soil units mapped by the USDA Natural Resources Conservation Service include Cascade, Cornelius-Kinton, and Saum silt loams (Figure 4). The Cascade soil is located primarily in the northeast portions of the site and along drainages in the southeast portions. The Cornelius-Kinton soil is found in discrete units in the eastern portions. Saum soil is prominent in the western half of the site. Both Cascade and Cornelius-Kinton soils possess a shallow fragipan-a weakly cemented, poorly permeable soil horizon which may contribute to a perched water table. A fragipan is least likely to be present in steeper terrain where downslope soil loss is generally too rapid for fragipan development to occur. However, in gently sloping to flat terrain, a fragipan can develop sufficiently to contribute to poor drainage and seasonal ponding. Other areas of Cooper Mountain Natural Area are poorly drained because of shallow bedrock and past land uses. Shallow bed rock is located within and away from Saum-soil areas which form a relatively thin layer over basalt. Past land uses, including road building and logging have also contributed to poor drainage through soil compaction and soil loss from increasing rates of erosion (Pacific Habitat Services, 2004).

Hydrology

Both surface water and ground water flow at Cooper Mountain Natural Area are seasonal. Surface water includes the five well-drained seasonal tributaries of Lindow Creek that flow north to south, collecting and conveying surface water to the Tualatin River. These tributaries are wet during the winter and dry during the summer.

Past land uses may have affected the locations and rates of groundwater seepage over time. Increased pumping of upper elevation wells through the early 1960's likely contributed to lower aquifer levels by the end of that decade. Many of the older upper elevation wells were deepened in the late 1960's to 1970's to access deeper aquifers. Housing development in the area is now served by water mains rather than wells, which likely contributes to the recharge of the higher aquifer horizons (Pacific Habitat Services 2004)

Wetlands

None of the wetlands on Cooper Mountain Natural Area have been officially mapped by the National Wetlands Inventory (NWI). However, a number of water features almost meet criteria for jurisdictional wetlands under state and federal regulations. At least five well-defined seasonal tributaries of Lindow Creek likely meet the criteria for Waters of the State/ U.S., and may be subject to regulation for activities that require soil removal or fill (e.g. bridge construction or culvert placement).

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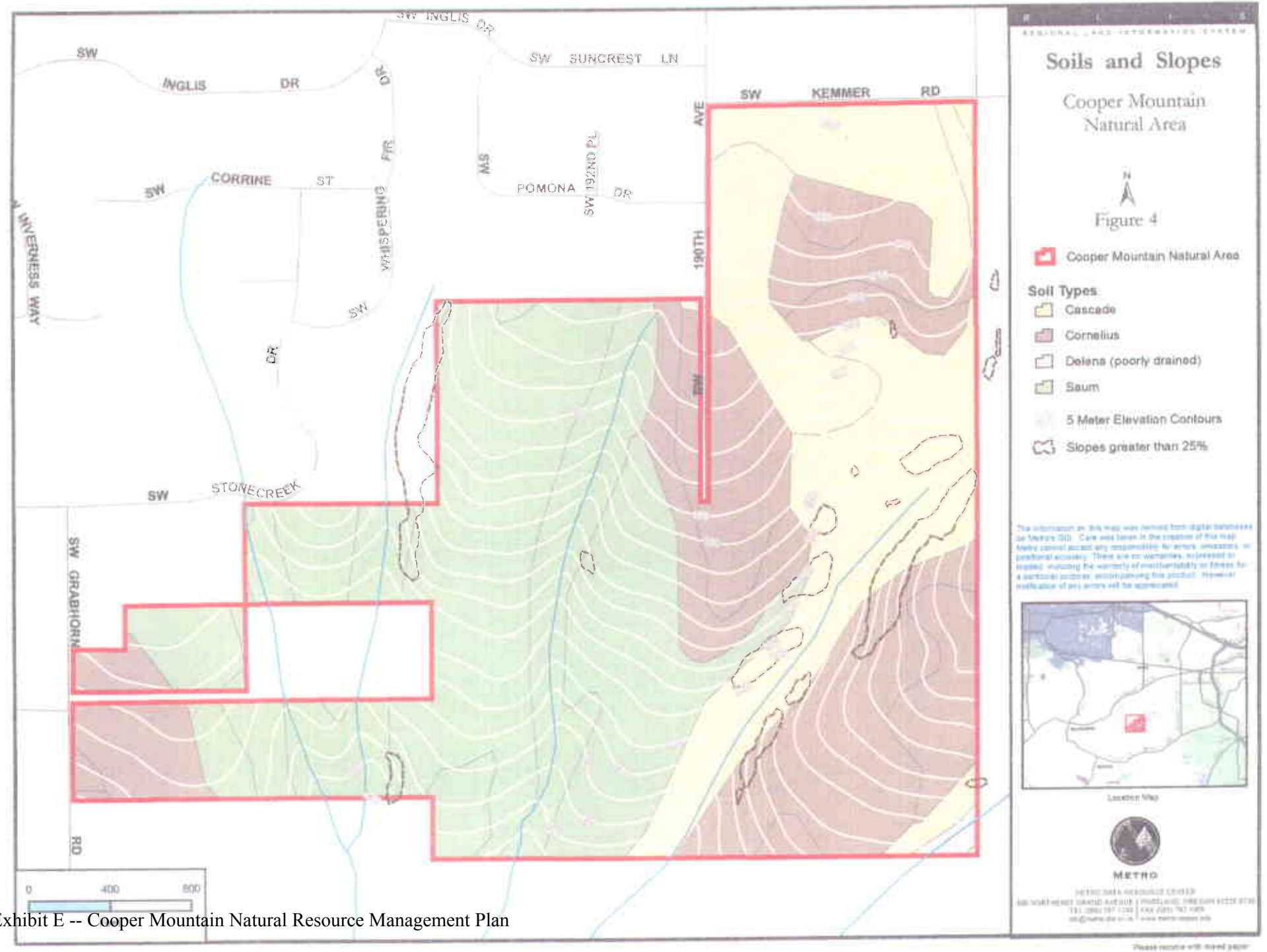

Cooper Mountain Natural Area has numerous seasonally wet features typically associated with groundwater seepage zones or drainage swales. In some instances these wet spots are potential jurisdictional wetlands, especially where all three wetland criteria required by the 1987 Corps of Engineers Wetland Delineation Manual (hydric soils, wetland hydrology, and hydrophytic vegetation) are present.

The jurisdictional status of some seeps is less certain where bedrock is present. In these areas, seepage is close to the surface and the soil cover (if present) is only thick enough to support mosses and other small annual plants. These areas should be assessed on an individual basis and in conjunction with the surrounding landscape to determine whether a larger pattern of connected seeps or swales is present.

Natural Communities

This section includes: a) habitat types and their associated plant communities, b) identification of habitat types and their associated wildlife, and c) identification of threatened, endangered and associated sensitive wildlife and plant species. Landscape connectivity is also discussed because of its importance in protecting wildlife corridors to and from the site.

Habitat Types: In 1997, Metro science staff delineated habitat areas on Cooper Mountain Natural Area in order to group similar plant communities and prioritize actions for management of rare plant communities. The science staff broadly delineated habitat based on 1) historical land survey records that identified pre-settlement vegetation, and 2) on site oak woodland, prairie and other habitat locations. Oak and prairie units were delineated based on presence of oaks and prairie flowers, absence of conifers and thin rocky soils. Riparian areas were easily identified around seasonal drainages. A majority of the site in the north central, central, southwest and southeast portions was clear-cut (Figure 5). Most of these sites were mixed forest based on remnant trees and the presettlement land survey. A small portion of clearcuts in the southwest portion of the site was also designated as future oak woodland habitat. Finally, an existing mixed forest was recorded in the northeast corner of Cooper Mountain Natural Area

Plant Communities: Distinct plant communities were mapped and grouped within the broader oak woodland, prairie, mixed forest and riparian habitat using the National Vegetation Classification System (Anderson et al. 1998, Grossman et al. 1998, Figure 6). This classification system is the standard method used to compare plant communities on a regional scale. A plant community is described by its plant association with a definite floristic flowering composition and uniform habitat that repeats itself across the landscape.

The following section groups dominant plant associations under each habitat unit (Table 1). Each plant association is divided into three vegetative layers: tree canopy, shrub and ground cover where the dominant plant species having a vegetative cover that is greater than 25% of any layer, is described. Species lists are compiled for each association and each plant type is described by both its common and Latin name.

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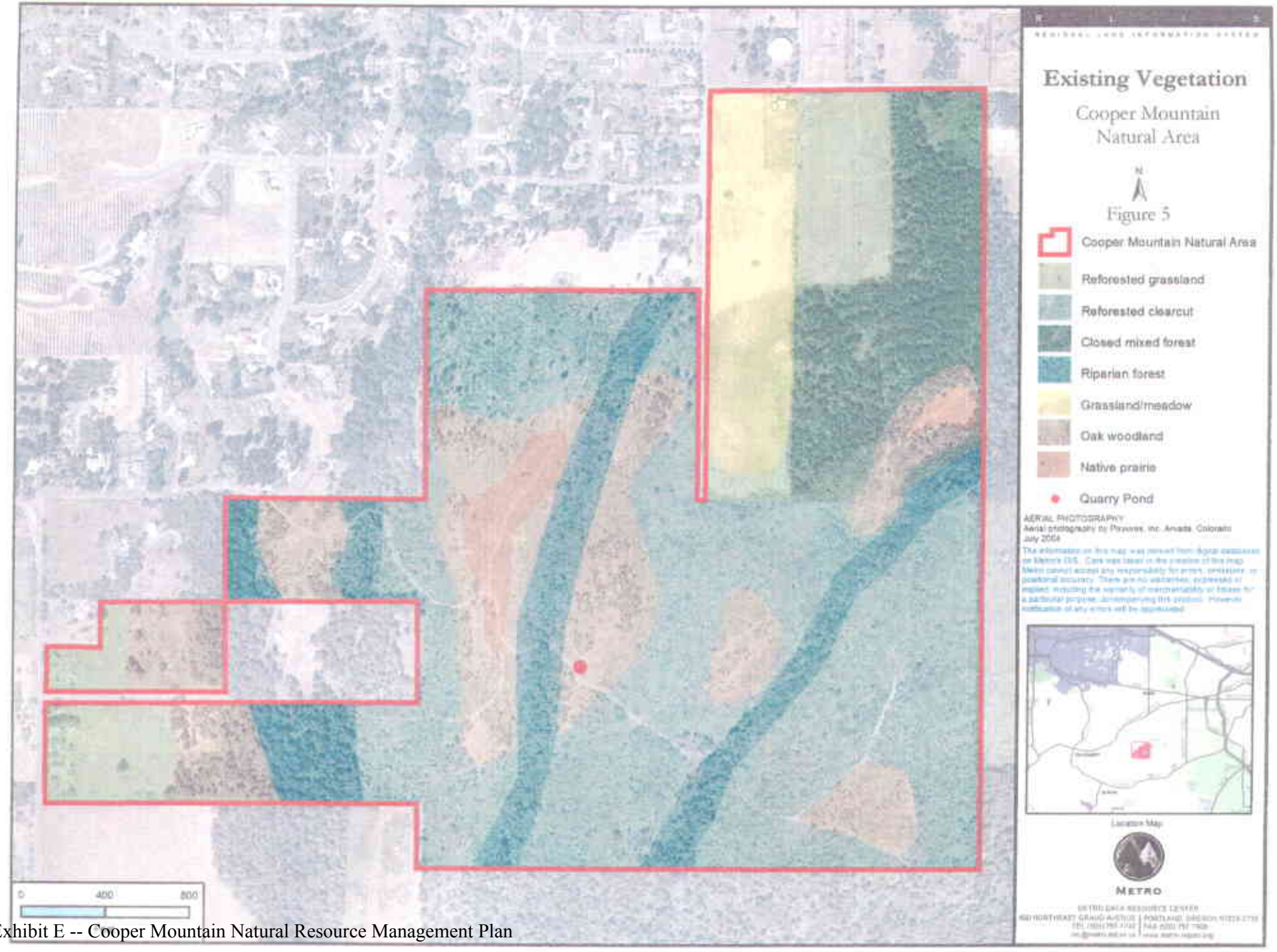

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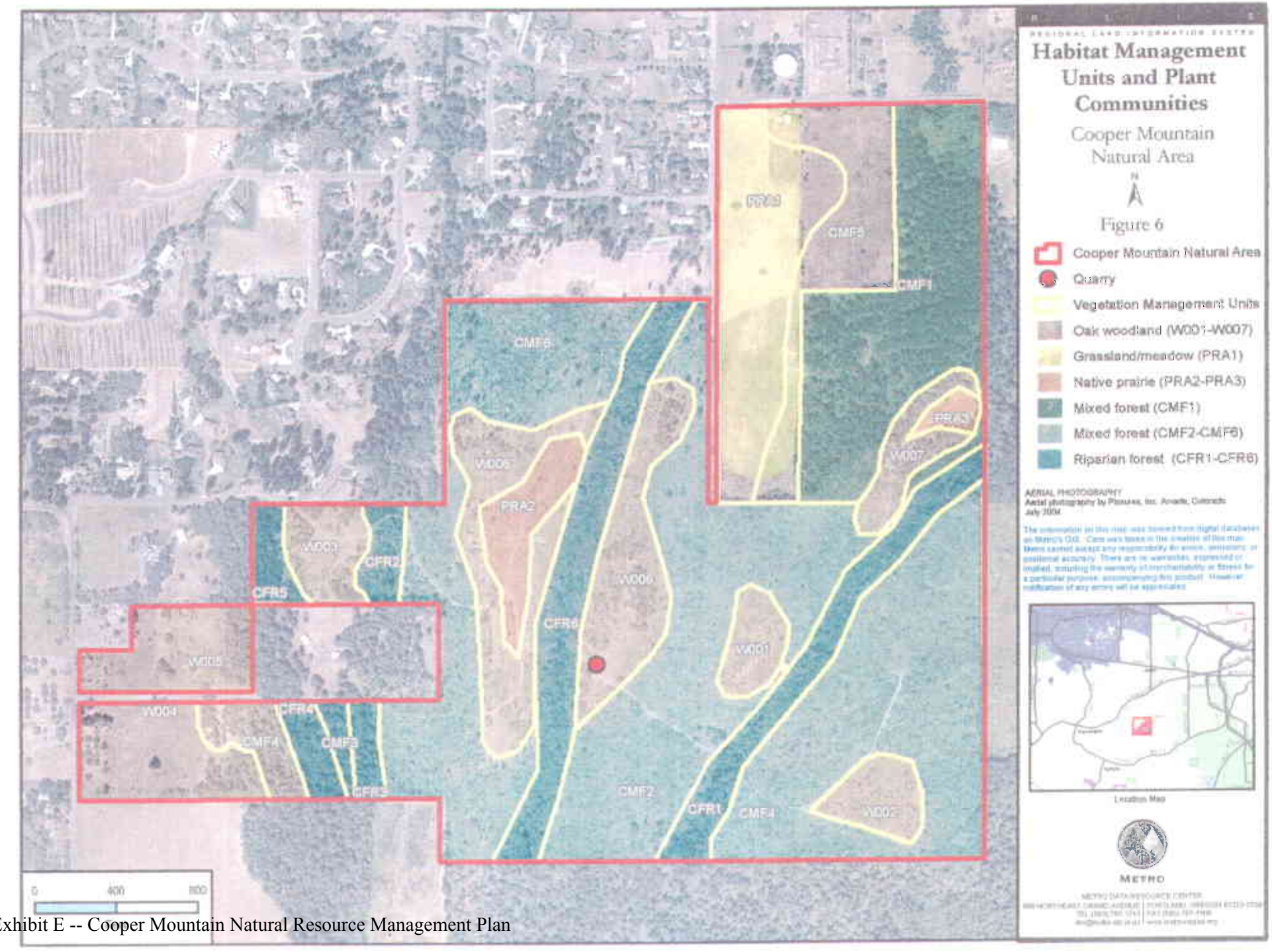

Habitat	Code (National Vegetation Classification System)	Dominant Vegetation
Oak Woodland	W00 includes W001, W002, W003 and portions of W004, W005,W006, W007	Oregon Oak and Pacific madrone, poison oak and snowberry
Upland Prairie	PR includes PRA1, PRA2 and PRA3. PRA1 will be maintained as a meadow	White rock larkspur and meadow checker mallow
Mixed Forest (northeast section)	CMF includes CMF1	Douglas fir, grand fir and western red cedar, salal and swordfern
Mixed Forest (north central, northwest, central, southeast)	CMF includes CMF2, CMF 3, CMF4, CMF5, CMF6	Douglas fir, big leaf maple, swordfern and snowberry
Riparian Areas	CF includes CFR1, CFR2, CFR3, CFR4, CFR5, CFR6,	Black cottonwood, alder, cedar, swordfern and salal

Table 1: Habitat Type and Plant Communities (National Vegetation Classification System, Anderson et al. 1998 and Grossman et al. 1998)

For a comprehensive list of plant species, refer to Table 6 (Appendix A) which lists native and invasive plants from 1997 to 2003 and plants at Cooper Mountain Natural Area since 2003.

Oak Woodland Habitat

Early Seral Woodland Unit (W001)
Dominant species***: Oregon white oak-snowberry-poison oak (Quercus garryana-Symphoricarpos albus-Toxicodendron diversiloba)***

This unit is 3 acres in size. A prescribed burn in 1997 resulted in loss of the existing 15-20' tree canopy, but the vast majority of those trees are resprouting. The site is dominated by second growth Oregon oak, some Pacific madrone (*Arbutus menziesii*) and big leaf maple (*Acer macrophyllum*). Douglas-fir (*Pseudotsuga menziesii*) seedlings were planted densely throughout the site in 1999.

Native dominant shrubs include common snowberry and poison oak. Native grasses and forbs generally comprise less than 50% of the groundcover and include Sitka brome (*Bromus sitchensis*), white rock larkspur (*Delphinium leucophaeum*), broadpetal strawberry (*Fragaria virginiana var. platypetala*), woods strawberry, parsley leaved lovage (*Ligusticum apiifolium*) and sticky cinquefoil (*Potentilla glandulosa*). Non-native species of concern in this area include Scotch broom (*Cytisus scoparia*) which occupies 20-50% of the shrub layer. Bachelor buttons (*Centaurea cyanus*), dovefoot geranium (*Geranium molle*) and a variety of non-native grasses.

Early Seral Woodland Unit (WOO2)
Dominant species: ***Oregon white oak-snowberry (Quercus garryana-Symphoricarpos albus),***

This unit is approximately 3 acres in size. The unit was prescribed burned by Metro in 1997. It has second growth Oregon oak spaced approximately 10-30' apart, or about approximately 50 trees per acre. The 1998 fire burned the site at the grass and shrub level but did not have an impact on the tree canopy. In general, this unit has a predominantly native plant community in the tree and shrub layer, although Scotch broom is present. The shrub layer is almost entirely snowberry but contains small numbers of the following native species: poison oak (*Toxicodendron diversiloba*), Indian plum (*Oemelaria cerasiformis*), serviceberry (*Amelanchier alnifolia*), ocean spray (*Holodiscus discolor*) and tall oregon grape (*Mahonia aquifolium*). The groundcover layer of this zone has a diverse native plant community that is struggling to compete with non-native groundcovers. Native forbs and grasses observed during a late 2003 March field visit include hounds tongue (*Cynoglossum grande*), woods strawberry (*Fragaria vesca*), Oregon fawn lily (*Erythronium oreganum*), checker lily (*Fritillaria affinis var. affinis*), blue-eyed mary (*Collinsia grandiflora*), sticky cinquefoil (*Potentilla glandulosa*), wooly sunshine (*Eriophyllum lanatum*), camas (*Camassia quamash var. maxima*) and California brome (*Bromus californica*). Dominant invasive plants in the herb layer include hairy chickweed (*Stellaria media*), bachelor buttons, dovefoot geranium, dogtail (*Cynosurus echinatus*), and a variety of non-native annual bromes.

Early Seral Woodland Unit (WOO3)
Dominant species: ***Oregon white oak-snowberry-poison oak (Quercus garryana-Symphoricarpos albus-Toxicodendron diversiloba)***

This unit is approximately 4.0 acres in size. The tree canopy consists of Oregon oak distributed in patches throughout the unit. These oaks range from 15-30' in height. Pacific madrone is also distributed randomly throughout this unit. A dense planting of Douglas fir seedlings occurred in 1999 along with some plantings of grand fir, ponderosa pine and Oregon ash. The dominant shrubs in this unit are snowberry and non-native Scotch broom. Other prevalent shrubs include native serviceberry, tall Oregon grape and non-native Himalayan blackberry.

The groundcover layer in this unit includes a combination of native and non-native species. The open areas between oak canopy are dominated largely by non-natives such as dogtail, geranium, bachelor buttons, velvet grass (*Holcus lanatus*) and orchard grass (*Dactylis glomerata*). Native forb communities appear to be much more dominant and diverse in areas that have partial canopy closure. Dominant species found in these areas are woods strawberry, wooly sunshine and western yarrow. Other notable species include white rock larkspur, Western buttercup (*Ranunculus occidentalis*) and needlegrass (*Acnatherum occidentalis*).

Reforestation Unit (W004)
Dominant species*: **Ponderosa Pine***

This unit is about 8 acres in size. Past land uses on W004 included ornamental or orchard trees and pasture. Twelve acres of the site were planted primarily with ponderosa pine but also with Douglas fir, Garry oak and Pacific madrone between 1997 and 2002. Natural shrub regeneration is sparse in the open meadow areas and includes western serviceberry, Oregon grape, common snowberry and poison oak. Invasive plants in the open meadow include european hawthorn, Scotch broom, sweetbriar rose (*Rosa eglanteria*) and Himalayan blackberry. Dominant ground cover species found here are camas, small flowered-woodland star (*Lithophragma parviflora*), grassland saxifrage (*Saxifraga integrifolia*), wooly sunshine and western yarrow.

Reforestation Unit (W005)
Dominant species: ***Oregon white oak-ash-Douglas fir (Quercus garrayana, Fraxinus latifolia and Pseudotsuga menziesii)***

This reforested unit is 6 acres in size. Vegetation along the west end of unit W004 is similar in this unit. This unit was seeded with aggressive pasture grasses much like the upper Kemmer road pasture (PRA1) and reforestation unit W004. It also has a southern aspect and full sun exposure, which make plant establishment extremely difficult. This unit has been planted three times between 2000-2003 with a variety of native trees and shrubs: Oregon oak, ponderosa pine, Douglas-fir, Oregon ash, Pacific madrone, serviceberry and blue elderberry. The unit was planted most recently in January, 2004. The east edge of this unit includes an oak woodland with a well-developed shrub layer that is migrating westward. The primary invasive species in this unit are Himalayan blackberry, English hawthorn and Scotch broom.

Early to Mid-Seral Woodland Unit (WOO6)
Dominant species*: **Douglas fir-Pacific madrone-Oregon white oak-snowberry-poison oak (Pseudotsuga menziesii-Arbutus menziesii-Quercus garryana-Symphoricarpos albus-Toxicodendron diversiloba)***

This unit is approximately 19 acres. Some parts were prescribed burned in 1997 or 2001, while a few parts were burned in both years. In this unit, dominant trees are Oregon oak and Pacific madrone. Oak trees range in age from 30-100 years, with the dominant age class occurring somewhere around 30-40 years. Canopy cover ranges in density from very open prairie conditions to closed woodland. Shrub cover in these areas ranges from sparse to dense and is dominated by poison oak, snowberry, Nootka rose, serviceberry, oceanspray and tall Oregon grape. Several locally rare shrub species found in this unit include: Oval leaved viburnum *(Viburnum ellipticum),* mountain balm (*Ceanothus velutinous),* Oregon tea tree *(Ceanothus sanguineus)* and birch leaf spiraea (Spiraea betufolia*).*

Herbaceous plants consist of rare species such as checker lily, Mariposa lily (*Calochortus tolmiei*), rosy plectritis (*Plectritis congesta*) and several native grasses including Western fescue (*Festuca occidentalis*), California fescue (*Festuca californica*) and oniongrass

(*Melica subulata*). Dominant forbs and groundcovers include yerba buena (*Satureja douglasii*), star-flowered solomon's seal (*Maianthemum stellata)* and Oregon saxifrage (*Saxifraga integrifolia).*

Mid-Seral Woodland Unit (WOO7)
Dominant species*: **Douglas fir-Pacific madrone-Oregon white oak-snowberry-poison oak (Pseudotsuga menziesii- Arbutus menziesii-Quercus garryana-Symphoricarpos albus- Toxicodendron diversilobum)***

This unit is 3-4 acres in size. This unit has a well-developed Oregon oak canopy with trees ranging from 20-50' in height. Both Pacific madrone and Douglas fir occur throughout and range in height from seedlings to mature trees. The north edge of this unit transitions into a closed canopy, second growth Douglas-fir stand. Mid-layer and groundcover strata are dominated by a diverse community of native plants. The shrub layer is dominated by snowberry, ocean spray and poison oak. Other species include Pacific crabapple, serviceberry, tall Oregon grape and salal (*Gaultheria shallon*). Native forbs and grasses observed during a late 2003 March field visit include woods strawberry, Oregon fawn lily, blue-eyed mary, sticky cinquefoil, broadleaf lupine (*Lupinus polyphyllus*), Henderson's sedge (*Carex hendersonii*) and spreading rush (*Juncus patens*). Dominant invasive plants in the herb layer include bachelor buttons, dovefoot geranium, and purple deadnettle (*Lamium purpureum*).

Meadow Habitat

Dry Pasture Unit (PRA 1)
Dominant species*: **Festuca arundinacea***

This unit is 16 acres in size. This site was likely closed canopy conifer forest in the distant past. It was clearcut and transitioned into agricultural use and seeded with non-native pasture grasses. In general, the unit is open pasture with occasional clumps of invasive English hawthorn and Himalayan blackberry.

Prairie Habitat

Upland Dry Prairie Unit (PRA 2 and 3)
Dominant species*: **California oatgrass-Roemer fescue (Danthonia californica-Festuca roemeri)***

Both the prairie units are approximately 7 acres. The upland prairie/grassland units are limited to two distinct areas: one in the center of the site and the other in the northeast corner. These areas have extremely thin soil which limits establishment of woody vegetation. Both prairies have a high diversity of native forbs including locally rare species such as white rock larkspur, meadow checker mallow (*Sidalcea campestris*), several Brodiaea species, several native onion species (*Allium spp.*) and five species of native clover (*Trifolium spp.*). There are approximately 1,625 white rock larkspur

individuals in the central prairie. Other locally uncommon species are small-flowered woodland star (*Lithophragma parviflora*), grassland saxifrage (*Saxifraga integrifolia*), and mariposa lily.

Although native forbs have remained diverse, native bunchgrass species such as junegrass (*Koeleria macrantha*), California oatgrass (*Danthonia californica*) and Roemer's fescue (*Festuca roemeri*) have been displaced by non-native grasses. Because of the thin soils, summer conditions are extremely dry and harsh. Most plants adapted to prairie environments flower and go dormant early in the year. There are many exotic competitors in this environment that gain a competitive edge through various means. Some species such as tall oatgrass (*Arrhenatherum elatius*) and velvet grass (*Holcus lanatus*) come out of dormancy earlier in the year or stay green longer than the natives present in this community type. A variety of aggressive annual grasses such as rattail fescue (*Vulpia myuros*), soft brome (*Bromus hordaceous*) and ripgut (*Bromus diandrus*) germinate in exposed mineral soils between native bunchgrasses and minimize substrate for germinating native seed. Some non-native in the prairies are Queen Anne's lace (*Daucus carota*), hawkweeds (*Crepis spp.*), geranium species, non-native clovers (*Trifolium spp.*), Scotch broom and a variety of non-native annual grasses. A fringe of oak grading into a coniferous dominated forest surrounds the smaller isolated prairie in the northeast corner of the property. Approximately 500 white rock larkspur occur here with very low Scotch broom infestation.

Mixed Forest Habitat

Early Successional Unit (CMF1-northeast section)
Dominant species***: Douglas fir-trailing blackberry (Pseudotsuga menziesii-Rubus ursinus)***

The unit is 26 acres in size. The existing conifer forest consists of a closed canopy Douglas fir forest (*Pseudotsuga menziesii*) in an age class ranging from 30-40 years. Other associated trees include grand fir (*Abies grandis*) and western red cedar (*Thuja plicata*). The mid-story layer is non-existent besides an occasional patch of Himalayan blackberry or English hawthorn. The groundcover and herbaceous layers consist primarily of two dominant species- sword fern (*Polystichum munitum*) and trailing blackberry (*Rubus ursinus*). Other low growing shrubs and forbs present include slender toothworth (*Cardamine nuttallii var. nuttallii*), false lily of the valley (*Maianthemum dilatatum*), self-heal (*Prunella vulgaris ssp. lanceolata*), and stream violet (*Viola glabella*). During a 2003 March survey of the site, much of the ground was either bare or dominated by moss.

Early Successional Forest Unit (CMF2 and 3-southeast and central section)
Dominant species***: Black cottonwood-big leaf maple-trailing blackberry (Populus balsamifera ssp. Trichocarpa-Acer macrophyllum-Rubus armenicus)***

Unit CMF2 is 33 acres in size and unit CMF3 is 1.07 acres in size. This unit is dominated by black cottonwood trees approximately 5-10 years in age, and by big leaf maple that is

resprouting from cut stumps. Other tree species of interest are Douglas fir and Pacific yew (*Taxus brevifolia*). Average canopy height is approximately 15-20 feet. Disturbance on this portion of the site has resulted in a shrub layer dominated by Himalayan blackberry. Remnant native shrubs include vine maple (*Acer circinatum*), Western hazelnut (*Corylus cornuta*), Scouler's willow (*Salix scouleriana*), cascara (*Rhamnus purshiana*), and ocean spray (*Holodiscus discolor*) at mid-canopy height. Low growing native shrubs include thimbleberry (*Rubus parviflorus*), longleaf Oregon grape (*Mahonia nervosa*) and red-flowering currant (*Ribes sanguineum*). Remnant western red cedar in the nearby riparian zone (CFR1) and at the top of the northwest facing slope suggests that this area was at one time a closed forest dominated by cedar, vine maple and longleaf Oregon grape. In addition, the presence of a mature Pacific yew indicates the conifer canopy was closed for a considerable amount of time during the past several hundred years.

Mid-Seral Forest Unit (CMF 4, CMF6-northwest and southeast sections)
Dominant species: ***Douglas fir-Oregon white oak-snowberry (Pseudotsuga menziesi-Quercus garryana-Symphoricarpos albus)***

This unit is 60 acres in size. It has a well-developed Oregon oak canopy with trees ranging from 15-30' in height. Douglas fir also occurs throughout the site ranging in height from seedlings to mature trees. The east edge of this unit transitions into a closed canopy Douglas fir riparian forest. Mid-layer and groundcover strata are dominated by a diverse community of native plants. The dense shrub layer is dominated by snowberry, ocean spray and poison oak. Other species include Western honeysuckle, tall Oregon grape and wood rose (*Rosa gymnocarpa*). In the northwest corner of this unit, the vegetation is more appropriately classified as oak woodland. This area has an open oak canopy with dense native shrub cover. A small part of this 0.5-acre area contains several species, suggesting a plant community more typical of an open prairie.

The groundcover layer in this unit is dominated by a combination of native and invasive species. The open areas between oak canopy are dominated by dogtail, geranium, bachelor buttons, velvet grass (*Holcus lanatus*) and orchard grass (*Dactylis glomerata*). As in other units, native forb communities are much more dominant and diverse in areas with partial canopy closure.

Young Douglas fir/Ponderosa Pine Unit (CMF 5-north central section)
Dominant species: ***Douglas fir–ponderosa pine (Pseudotsuga menziesii-Pinus ponderosa-Festuca arundinacea)***

This site is approximately 12 acres in size. The soils in this portion of Cooper Mountain Natural Area were tilled and replanted at some point with non-native pasture grasses that now dominate the unit. Tall fescue (*Festuca arundinacea*), which provides optimal habitat and cover for mice and voles, is a dominant species In an attempt to build on existing forest in adjacent CMF1, this unit was planted in 2001, 2002 and 2003 with Douglas fir, grand fir, ponderosa pine, madrone, Oregon ash and Garry oak. This planting expanded a planting effort during the 1990s using Douglas fir. Mortality in tall

fescue pastures is typically high due to woody plant herbivory from small mammals as well as root competition from the vigorous grasses. Woody invasive plants in this unit include european hawthorn (*Crataegus monogyna*), Scotch broom and Himalayan blackberry (*Rubus armenicus*).

Riparian Habitat

Early Seral Cottonwood Unit (CFR1)
Dominant species*: **Red alder-Douglas fir (Populus balsamifera ssp. trichocarpa- Alnus rubra-Pseudotsuga menziesii)***

This unit is 9 acres in size. In comparison to the other riparian corridors at Cooper Mountain, this draw topographically reveals a much gentler grade and a very different vegetation community. It is dominated largely by black cottonwood, alder and planted Douglas fir and cedar seedlings. Cottonwood and alder seedlings are 7-10 years old. Douglas fir saplings are 5 years old. Natural cedar seedlings are present throughout the riparian corridor and on the west-facing slope. Disturbance through either fire or past site management activities is indicted by the colonization of invader tree and shrub species. Successional tree species include cottonwood and alder in the understory. Shrub species include Himalayan blackberry, Scotch broom and trailing blackberry.

Mid-Seral Forest Units (CFR2, CFR3, CFR4, CFR5, CFR6)
Dominant species*: **Big leaf maple-Douglas fir (Acer macrophyllum-Pseudotsuga menziesii-Polystichum munitum)***

The size of these units is 21 acres. The remainder of the riparian areas on site is dominated by an open canopy of big leaf maple (*Acer macrophyllum*) and Douglas fir trees approximately 50-100 years in age. The north half of unit CFR2 was harvested along the upland areas of the site; hence the seedlings there are only six years old, approximately.

The shrub layers in these units are dominated by sword fern, snowberry, Indian plum, and longleaf Oregon grape. Other common shrub species include Nootka rose, mock orange *(Philadelphus lewisii)*, tall Oregon grape, poison oak and serviceberry. The herbaceous layer consists of a diverse and rich community of native plants. A few of the dominant species in this strata are fringecup, Yerba buena, star-flowered Solomon's seal, Dewey's sedge (*Carex deweyana*), and stream violet (*Viola glabella*).

Wildlife Communities: The mosaic of habitat types at Cooper Mountain Natural Area facilitates a variety of wildlife species, including deer (*Odocoileus hemionus*), raccoons (*Procyon lotor*), coyotes (*Canis latrans*), and alligator lizards (*Gerrhonotus coeruleus*) (Table 7, Appendix A).

Oak Woodland Communities

Oregon oak savannas and oak woodlands such as those found at Cooper Mountain Natural Area are typically used by more than 200 species of native wildlife in the region (Campbell, 2004) because the open oak canopy stands have a complex plant understory (Larsen and Morgan, 1998).

Oregon white oak woodlands have been identified as critical habitat for neotropical migrant birds (Campbell, 2004). Twenty-six of the 118 species of neotropical birds found in Oregon are associated with this habitat. Of these, 12 species of neotropical birds have been spotted at Cooper Mountain. Along with resident bird species such as the western blue bird *(Sialia mexicana)* they use the site as a stopover to nest, feed or winter over.

The western gray squirrel (*Sciurus griseus*) is found on site and uses the oak woodland for foraging. Acorns produced by the Oregon white oak are an important early winter food for them.

In addition to providing forage for wildlife, oak snags and dead portions of live trees harbor insect populations and provide nesting cavities and perches for birds and mammals. Cavities can develop in dead trees (snags), dead portions of live trees, and sound live trees. A number of natural pressures such as insects, fungi and galls also weaken oaks. Thirty-one species of fungi that affect Oregon white oak simplify the excavation of cavities by decomposing wood and making it accessible. Cavity-dependant species such as downy woodpecker (*Picoides pubescens*) and white-breasted nuthatch (*Sita carolinensis*) have been observed at Cooper Mountain Natural Area. Decomposing oak stems also create habitat for amphibians and reptiles, such as northern alligator lizards (*Gerrhonotus multicarinatus*), and offer den sites for red fox (*Vulpes vulpes*). Both of these species have been sighted at Cooper Mountain Natural Area.

Quarry Habitat

The impounded quarry supports the northern red–legged frog, a federal species of concern. The quarry is located along the border of management unit W006 (oak woodland) on the old logging road that bisects Cooper Mountain Natural Area from west to east. Seasonal fluctuation of water in the quarry results in a filled pond in winter and spring, and an empty pond in summer. The pond supports a small clump of willow trees surrounded by modest clumps of spike rush and other native emergent plants. They in turn provide habitat for egg deposition and rearing for the frogs. Overall, the quarry is poorly vegetated. Additional native emergent vegetation, shrubs and shading would improve the frog's habitat for breeding, rearing and hiding.

Meadow Habitat

Currently, Metro manages the meadow by encouraging grasses and discouraging the establishment of trees and shrubs. This type of management maintains sweeping views of the Tualatin Valley and also provides foraging habitat for deer, birds of prey and the western blue bird, in particular.

Prairie Habitat

Many species of birds, amphibians, reptiles and mammals such as the western meadow lark (*Sturnella neglecta*), vesper sparrows (*Pooecetes gramineus*) and sharp tailed snakes (*Contia tenuis*) are generally associated with this habitat. However, the presence of these species may be limited at Cooper Mountain Natural Area because of the small size of the prairie habitat (less than 8 acres).

Mixed Forest Habitat

The mixed forest in the northeast part of the site consists of 30-40 years old trees with a canopy cover of 70 to 80%. It is largely devoid of a shrub layer and native forbs and grasses. It is structurally simple and has a minimum of large snags and downed logs (less than 2/acre). Birds such as the pileated woodpecker (*Dryocopus pileatus*) and great horned owl (*Bubo virginianus*), and mammals such as deer, western gray squirrels and the non native Douglas squirrels (*Tamaiasciurus douglasii*) have been spotted in this area. A number of deer bedding structures have been found in the mixed conifer forest that surrounds the upper prairie, identifying it as a resting place. Black bear (*Ursus americanus*), black tailed deer, coyote and red fox tracks and scat have also been found on trails in this part of the site (Figure 7). Deer also are known to forage in the open grassy areas of the mixed forest located in the southeast and central sections of Cooper Mountain Natural Area. The olive-sided flycatcher also uses this early successional forest.

Riparian Habitat

The riparian forest at Cooper Mountain Natural Area is home to a number of birds and mammals. The forest, a mix of deciduous and conifer trees ranging from 30 to 80 years of age, is multi-storied and has a native shrub layer mixed with invasive species. The headwaters of Lindow Creek located on site are ecologically distinct from their downstream counterparts. These headwaters have higher structural diversity than the surrounding landscape and are the major source of water for many of the site's mammals and birds. Some sections of the riparian corridors support a large percentage of the madrone forest with up to a 40% canopy closure along the corridor. Metro bird surveys have shown the existence of yellow-breasted chat (*Icteria virens*), Wilson's warbler (*Wilsonia pusilla*) and Olive-sided flycatcher (*Contopus cooperi*) using the riparian area. Wildlife tracking data indicate a thriving community of deer also using this area.

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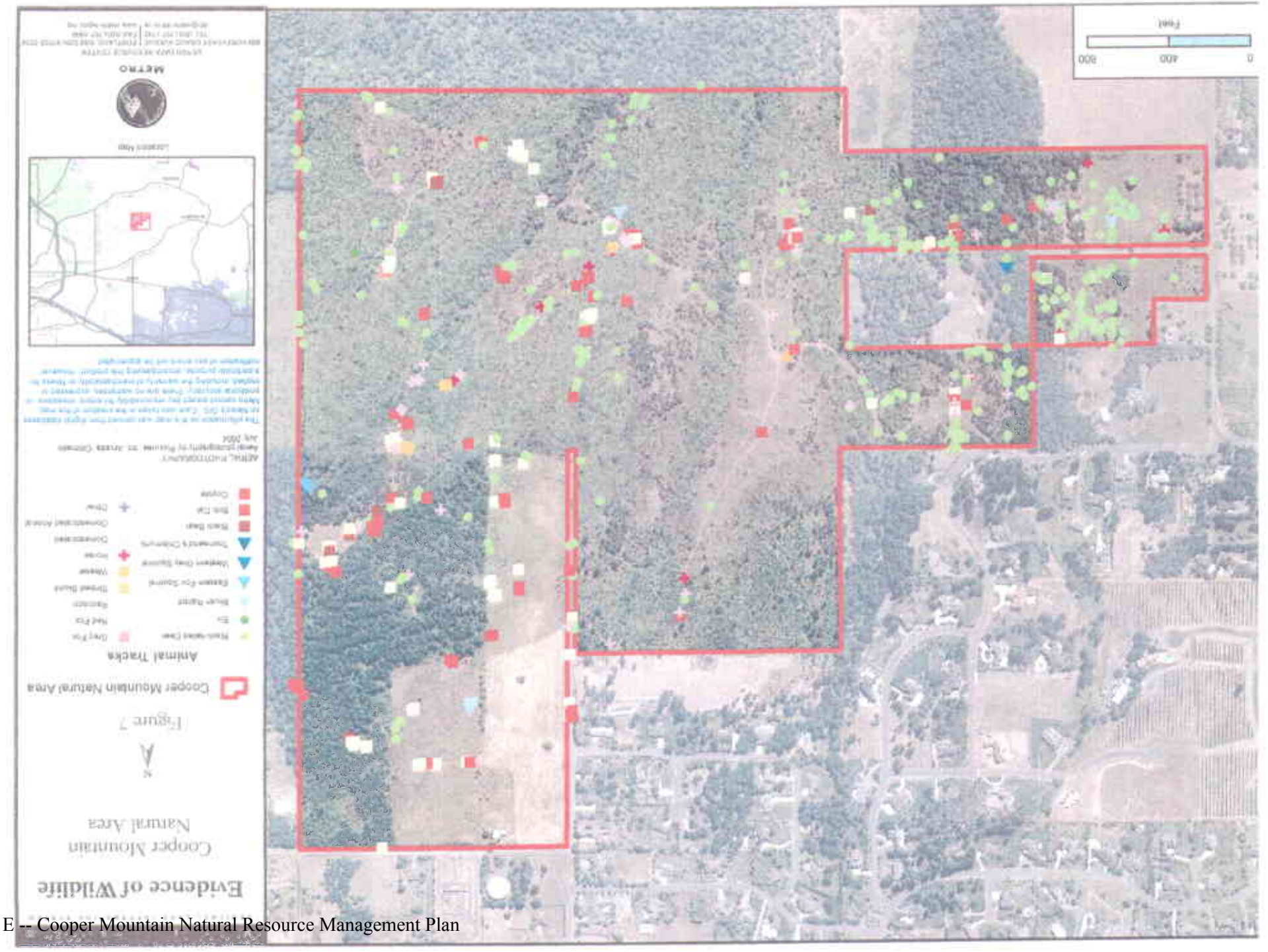

Sensitive, Threatened and Endangered Plant and Wildlife Species: Several species surveys, as well as ongoing botanical, avian and herpetological monitoring, have been conducted at Cooper Mountain Natural Area since 1997 by consultants, Metro staff and Portland's Bureau of Environmental Services. Table 2 (*located on the next page*) lists species detected at Cooper Mountain Natural Area since 1995 that are recognized by a state or federal program as exhibiting some form of rarity or special concern. A short habitat description and the location of each listed species precedes Table 2.

Plants

White rock larkspur, a member of the buttercup family, is found only in a few sites in the northern Willamette Valley in Clackamas, Marion, Multnomah, Washington and Yamhill counties. Its preferred habitats are rocky areas and dried fields. White rock larkspur is a slender perennial growing from a cluster of tubers, that blooms in May and June. Approximately 2,125 individuals occur in both the lower and upper prairies located at Cooper Mountain Natural Area and it is the third largest population in the Willamette Valley.

Meadow checker-mallow: Meadow Sidalcea is found on both prairies at Cooper Mountain Natural Area. The plant can grow over 6-feet tall. The pale-pink flowers are borne on hairy stems and serve as a nectar source for the Fenders's Blue Butterfly. This plant can also be found throughout the Willamette Valley in meadows, fencerows and roadsides, but is declining due to competition from invasive species that flourish in the absence of any disturbance such as burning or mowing.

Wildlife

Northern Goshawk is the largest North American "true raptor" that frequents Cooper Mountain Natural Area to forage and perch in the mixed forest. It maneuvers through dense mature woods, taking prey as small as squirrels and as large as grouse and crows. While most hawks search and dive for their prey over open meadows, goshawks delve through wooded areas and even pursue their prey by foot. Goshawks prefer mixed habitat for both nesting and foraging. Up to 6,000 acres of forest are needed by a pair of nesting goshawks to rear their young. The Northern Goshawk occurs even in fragmented forests, but perhaps less consistently than in large contiguous forest areas

Yellow-breasted chats breed in very dense scrub along streams and at the edges of swamps or ponds. They are sometimes found in overgrown pastures and in upland thickets along the margins of woodlands. They have been sighted near Cooper Mountain's riparian forests.

Olive-sided flycatchers breed mostly in conifer forests, especially around the edges of open areas including bogs, ponds and clearings. They have become less common in recent years because of a loss of habitat on the wintering grounds. They have been sighted in the closed mixed forest (south and central section) near the logging road.

Species	Federal Species of Concern*	ODA Status**		ODFW Status***			ORNHIC Ranking ****
		Listed Endangered	Candidate	Critical	Vulnerable	Undetermined	
Delphinium leucophaeum White rock larkspur	X	X					1
Sidalcea campestris Meadow checker-mallow			X				4
Accipiter gentiles Northern goshawk	X			X			4
Icteria virens Yellow breasted chat	X			X			4
Contopus cooperi Olive-sided flycatcher	X				X		4
Empidonax trallii brewsteri Little willow flycatcher					X		4
Sialia mexicana Western bluebird					X		4
Rana aurora aurora Northern red-legged frog	X				X		4
Sciurus griseus Western gray squirrel						X	4

Table 2. Sensitive Species Documented in Cooper Mountain Natural Area

Table 2: Key

* Federal "Species of Concern" are taxa whose conservation status is of concern to the U.S. Fish and Wildlife Service, but for which further information is still needed. They are not recognized/defined/regulated per the Endangered Species Act. Many were previously known as "Category 2 Candidates".

** At the state level, the Oregon Department of Agriculture (ODA) lists species as "Endangered" under the Oregon Endangered Species Act of 1987 (OESA). A "Candidate" species is listed by the ODA under the OESA.

***At the state level, "sensitive species constitute those naturally-reproducing native animals which may become threatened or endangered...in Oregon." They are categorized by the Oregon Department of Fish and Wildlife (ODFW) as follows:

- Critical: species for which listing as Threatened or Endangered is pending, or those for which listing as Threatened or Endangered may be appropriate if immediate conservation actions are not taken.
- Vulnerable: species for which listing as Threatened or Endangered is not believed to be imminent and can be avoided through continued or expanded use of adequate protective measures and monitoring.
- Peripheral or Naturally Rare: species whose populations are on the edge of their range or which have had low numbers historically in Oregon.
- Undetermined Status: species for which status is unclear; may be susceptible to population decline; scientific study is needed.

****Key to Oregon Natural Heritage Information Center (ORNHIC) rankings:

1 = Critically imperiled because of extreme rarity or because it is somehow especially vulnerable to extinction (5 or fewer occurrences)

2 = Imperiled because of rarity or because other factors demonstrably make it very vulnerable to extinction (6-20 occurrences)

3 = Rare, uncommon or threatened, but not immediately imperiled (21-100 occurrences)

4 = Not rare and apparently secure, but with cause for long-term concern (>100 occurrences)

5 = Demonstrably widespread, abundant and secure

SOURCE: *Rare, Threatened, and Endangered Species of Oregon*, Oregon Natural Heritage Information Center, May 2004

The little willow flycatcher is a neotropical bird that uses Cooper Mountain's riparian areas to nest and feed. It prefers open shrubby areas of willow and alder patches.

Western blue birds are resident birds confined to areas above 600 feet in elevation. They prefer open habitat where abundant food and perches are available. The Prescott Western Bluebird Recovery Project identified Cooper Mountain Natural Area as potentially good habitat for these birds, and installed bluebird nest boxes in the upper meadow. At least one pair has bred successfully.

The northern red-legged frog population is known to breed in a small-excavated quarry located towards the north end of the east-west logging road. Typically, red-legged frogs breed in seasonal pools during February to April when water temperatures reach 7° C, and disperse during the non-breeding period into forested uplands. From a life history perspective, red-legged frogs live and breed in stream habitats and off-channel pools most often characterized as small, shaded standing water. Generally, these breeding pools or ponds must be a meter in depth and provide clean water with ample vegetative cover and narrow-stemmed plant material for egg deposition.

Western gray squirrels have been sighted nesting near oak trees in the closed mixed forest located in the northeast corner of the site. They are shy and dependent upon older mixed forests with a variety of oak and pine or oak and fir trees to provide the squirrel with an interconnected tree canopy for food, cover, nesting sites and travel. Favorite foods are pine nuts, acorns, nuts, berries, fungi, green vegetation and insects.

Landscape Context: Habitat fragmentation is one of the most commonly cited threats to maintaining the viability and diversity of animal population. Fragmentation is the lack of connectivity from one habitat to another similar habitat. Two types of fragmentation occur at Cooper Mountain Natural Area: fragmentation within the site and fragmentation from the site to other natural sites in the surrounding landscape.

On site fragmentation is caused by informal trails that split habitat into smaller parcels. This splitting prevents species with low mobility from migrating from one habitat to another. For example, informal trails limit the ability of the northern red-legged frog to move upland in the summer and return back to the pond to breed.

Cooper Mountain Natural Area is also fragmented from similar habitats in the larger surrounding landscape. The most common way to prevent fragmentation of the site is by linking it through corridors to other natural sites in the landscape. Wildlife species use these corridors to move from one habitat to another to breed, feed or complete their life cycle (Noss, 1987). For example, elk use corridors to move between their summer and winter range. To prevent isolation of Cooper Mountain Natural Area, corridors to the north, west, east and south of the property should be maintained for movement of wildlife.

Currently, natural areas surrounding Cooper Mountain Natural Area are mostly in private ownership but should still be recognized as potential habitat links to and from the site. Stewardship assistance, conservation easements or acquisition from willing sellers are activities Metro can employ to maintain these connections in the future.

Potential connections for wildlife to and from Cooper Mountain Natural Area include (Figure 8):

- A well-used deer crossing at Kemmer Road from the conifer forest to the northeast corner of the site, to a pond located north of the road, through Kemmer Estates to the forested areas on the north slopes of the mountain. Speed bumps or wildlife crossing signs should be installed at Kemmer Road to slow traffic and reduce deer mortality.

- The linkage on the south side of Cooper Mountain Natural Area through Lindow Creek as it drains to the Tualatin River. Acquisition or purchase of conservation easements from willing sellers along Lindow Creek to the Tualatin River will protect this connection. To complete this linkage, a designed wildlife crossing should also be incorporated into any improvements made on Scholls Ferry Road. Metro's deer/elk accident survey (2002) indicates a high deer mortality rate along this roadway.

- Grabhorn Road encircles Cooper Mountain Natural Area from the northwest to the southwest. Safe passage for wildlife across Grabhorn Road to the southwest will lead to Jackson Creek which empties into the lower stem of Lindow Creek, thus providing wildlife with alternative access to the Tualatin River. Speed bumps or wildlife crossing signs on Grabhorn Road to slow traffic are recommended.

- Forests owned by private landowners surround Cooper Mountain Natural Area to the northeast and southeast. Metro should work with willing landowners to maintain habitat for wildlife through these areas.

Management Plan

Site Management and Planning (1996–2003)

After Metro purchased Cooper Mountain, it initiated two activities to begin stabilizing the site in anticipation of returning it to pre-settlement oak woodland and mixed forest-prescribed burns and an extensive planting program. Past activities such as agriculture, timber harvesting, mining, lack of fire, the development of informal trails, and dumping had resulted in damage to native soils, a predominance of Douglas fir, and the introduction of aggressive invasive species throughout the site. Lack of fire is one of the reasons for the disappearance of both these communities in the Willamette Valley and for their degraded condition on site. In order to restore the remnant oak woodlands and prairie habitat on the Cooper Mountain Natural Area, Metro conducted controlled burns in the oak woodlands and prairie units in 1997 and 2001 to suppress invasives and stimulate native forbs and grasses (Figure 9).

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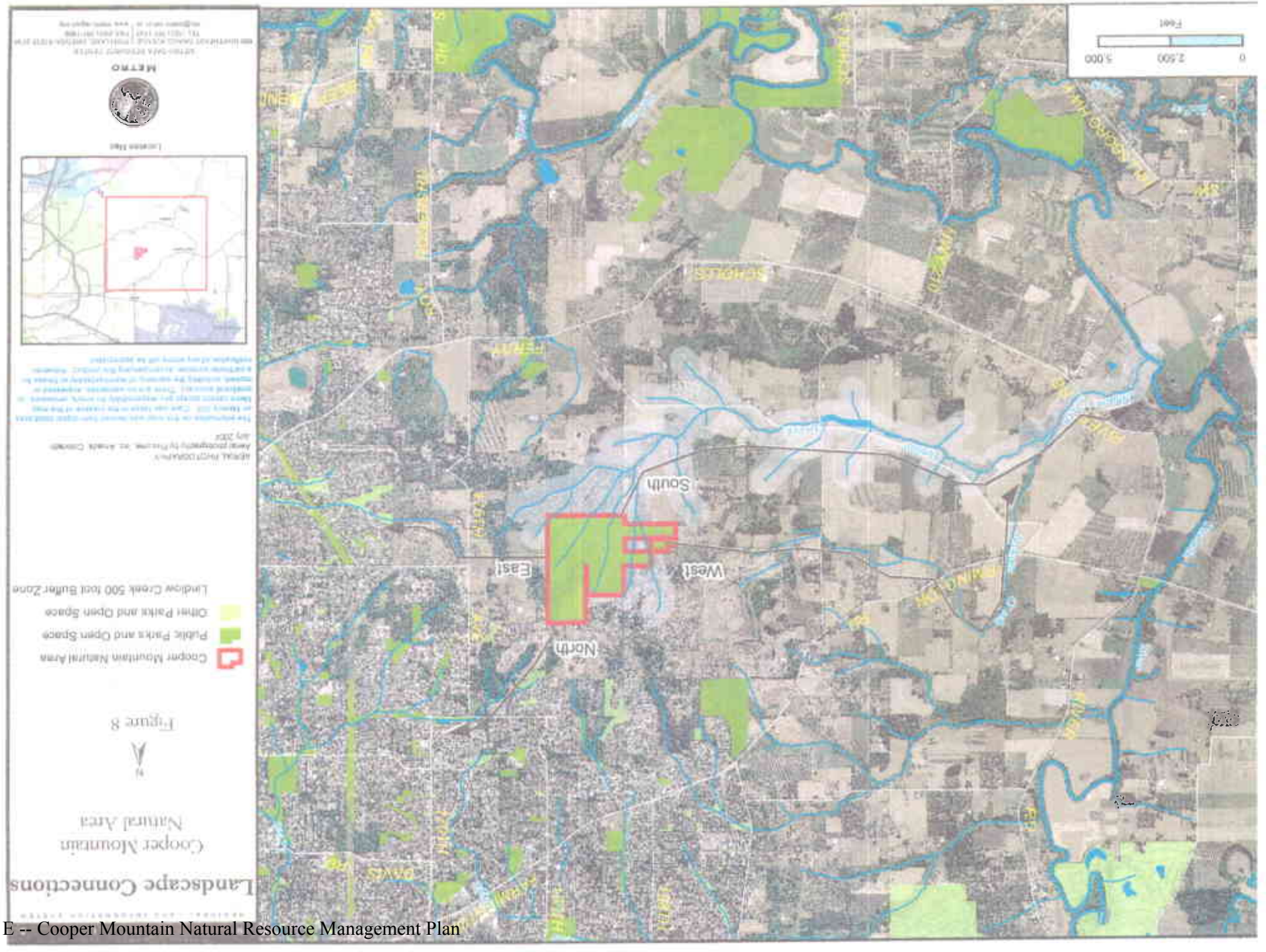

Between 1997 and 2003, Metro also planted over 60,000 native trees in areas that had been logged but through habitat delineation and restoration efforts are now targeted to attain a closed mixed forest state (north central, central, southwest, and southeast portions of the site). Trees were planted in compliance with the Oregon Forest Practices Act (Section 527.665. Notice of reforestation requirements) and included Douglas fir, red alder, grand fir, western red cedar, ponderosa pine, big leaf maple, service berry and white oak, at a density of over 400 + trees/acre at some sites. Table 8 (Appendix A) lists other restoration activities that Metro initiated between 1997 and 2004.

In 2003, a public master planning process resulted in the development of eight management goals for the Cooper Mountain Natural Area. Site-specific resource management objectives were derived largely from Goal 1 and include:

- Prioritize management and monitoring of site according to available financial resources
- Identify, protect and actively manage the oak woodland and prairie habitats using appropriate tools and techniques to restore site conditions and reduce invasive species.
- Close demand trails to decrease fragmentation of site for wildlife and plants.
- Increase connectivity of habitats to other similar habitats in the surrounding landscape for movement of wildlife.
- Manage the site to create complex layers of forest canopies and structures, such as snags and woody debris, to improve wildlife habitat. The more heterogeneous the environment, the more complex the plant and animal communities (Krebs, 1972).
- Complete establishment of the closed mixed forest in the central and south sections of the Cooper Mountain Natural Area.

Current Action Plan

Based on these objectives, Metro actions will focus on managing invasives and creating a viable forest with "old growth" characteristics of oak woodland forest and surrounding mixed forest and riparian habitat in order to provide a diverse habitat for native wildlife and plant populations. Prairies will be managed to reduce woody stems and increase native populations of plants. Metro may use prescribed burns and other methods that mimic its impacts to control invasives and decrease fuel load in the oak woodlands and prairie habitats. Prescribed fire is commonly used by the City of Portland and the Port of Portland to reduce fuel load, manage invasives and prevent fire. While this technique in an urban/wildlife interphase can create concerns for neighboring landowners, it has become common practice in the west to prevent catastrophic fires. Metro, Tualatin Hills Park and Recreation District and Tualatin Valley Fire District will notify neighbors prior to a prescribed burn.

Metro has prioritized their management actions into high, medium and low categories based on habitat significance and amount and kind of restoration effort required (Table 3). The following section describes each category, its management guidelines and the actions needed to achieve the management strategy's objectives.

Priority	Habitat Type
High	Oak woodlands, prairie, closed mixed forest (north central, central, southwest)
Medium	Riparian habitat
Low	Closed mixed forest (northeast section)

Table 3: Habitat Management Priorities for Cooper Mountain Natural Area

High Priority Actions

Oak Woodland Habitat (Units W001-W007)

- Conservation priority habitat for the Willamette Valley (Campbell 2004).
- Enhance the water filled quarry to provide breeding habitat for the northern red-legged frog-a listed federal species of concern.

Management Guidelines: The central oak woodland stand (W006) will be expanded to meet oak unit W007 (northeast) to improve connectivity (Figure 10). The units will be managed to create viable oak habitat for a variety of birds, mammals and reptiles, including the downy woodpecker, western wood peewee, acorn woodpecker, the western gray squirrel and the sharp tailed snake.

Management actions in the oak stand will include planting and thinning oaks where appropriate, protecting existing snags, creating additional snags, reducing invasive cover, and planting native shrub and herb layers. Planting trees and emergent plants and adding structure will protect the northern red-legged frogs from their non-native competitor the bull frog in the quarry pond.

Objective 1. Manage the existing oak woodland to attain dominant native vegetation in the under story.
Action 1: Eliminate Scotch broom and Himalayan blackberry using controlled burns cutting, mowing and chemical applications.

Objective 2: Determine feasibility of connecting oak woodland fragments.
Action 1: Analyze soil, slope and vegetation characteristics
Action 2: Develop and implement a revegetation strategy.

Objective 3: Create snags of at least four per acre (diameter at breast height >15 inches) and downed logs of about six per acre to enhance wildlife use by 2015
Action 1: Inventory all snags and woody debris on site between 2008-2010.
Action 2: Develop a strategy to create both snags and woody debris at specific locations where deficient.

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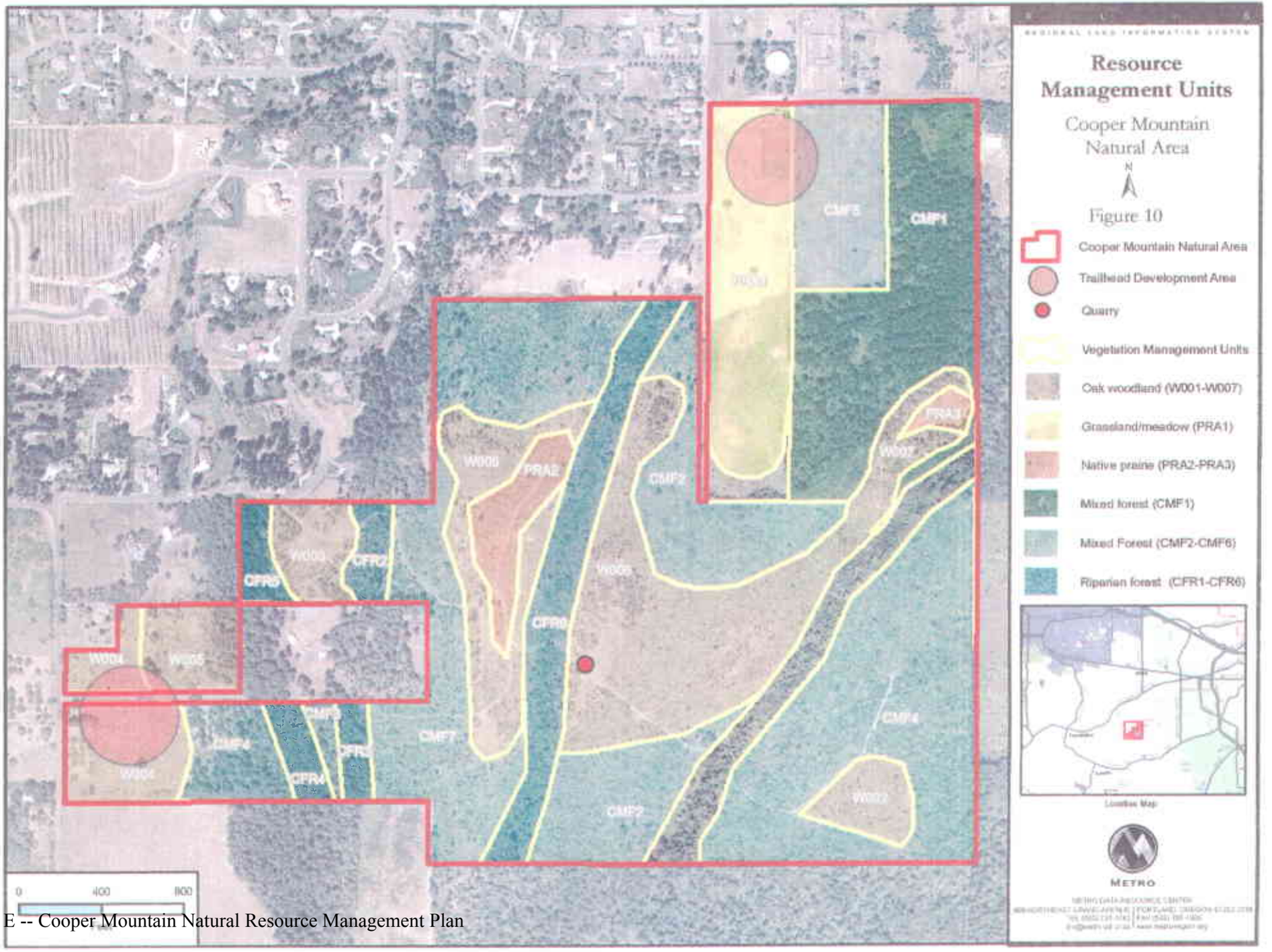

Objective 4: Ensure that the oak woodland is regenerating at about 4 saplings/acre by 2010.
Action 1: Survey regenerating oak to determine number of additional saplings needed to meet objective.

Objective 5: Where appropriate, thin oak trees to create openings and allow the oak trees to expand their diameter by 2010.
Action 1: Survey density of trees and determine appropriate thinning strategy.

Objective 6: Increase canopy cover, emergent and woody structure in the quarry by 2010.
Action 1: Plant shade-bearing trees and emergent vegetation, and add appropriate-sized woody debris to enhance pond structure.

Prairie Habitat (Units PRA 2-3)

- Conservation priority habitat for the Willamette Valley (Campbell 2004).
- Potential to increase the viability of the federally listed white rock larkspur population.

Management Guidelines: Management actions will mimic natural disturbance regimes on a regular basis to sustain native prairie species. Methods such as controlled burns will be used to protect and expand the white rock larkspur population and the meadow checker mallow, and to reduce invasive species. Shrub layer will be restricted to less than 10% of the area to allow native forbs and grasses to dominate the prairie. Most informal trails will be eliminated.

Objective 1: Increase native grasses and forbs in the prairies to a level of dominance by 2010.
Action 1: Control Scotch broom, Himalayan blackberry and tall oat grass using controlled burns, mowing, grazing and/or chemical applications.

Objective 2: Eliminate targeted 'informal' trails by 2007.
Action 1: Decommission trails using structural obstacles (tree trunks, rocks, berms, etc.) and restore paths to match specific habitat characteristics.
Action 2: Develop long-term strategy and public involvement program to discourage the creation of informal trails.

Closed Mixed Forest Habitat (Units CMF2–6, north central, central, and southern sections)

- The closed mixed forest is covered with invasive species and requires an extensive elimination program.
- These units have been intensively replanted and require very active management until the saplings have reached the "free to grow stage."

Management Guidelines: A majority of the mixed conifer deciduous matrix is in the early seral (less than 10 years of age) to mid-seral (greater than 10 years of age) stages. These forests will be managed to attain closed canopy (approximately 40-50 years of age, dependant on species type) and attain characteristics of an old-growth forest by 2085[2].

Reforestation efforts will continue to 2011. Developing old growth characteristics include creating snags and downed logs to increase diversity of habitat for wildlife species such as the western gray squirrel.

Objective 1: Increase native species cover in the under story by 2012.
Action 1: Eliminate invasive plant species such as Scotch broom and Himalayan blackberry by using cutting, mowing and chemical applications.
Action 2: Replant sites with appropriate native under story forbs and shrubs.

Objective 2: Thin forest to create openings after canopy closure is attained around 2035. If necessary, create additional snags (four per acre) and downed logs (five to six per acre).
Action 1. Inventory stems/acre once the forest has attained canopy closure. Determine appropriate basal (diameter at base height) density or amount of area occupied by trees and develop a strategy for thinning trees (e.g. trimming or removal to attain multistoried forest state.
Action 2: Inventory number of snags and downed logs once forest has attained closure to determine optimum number needed.

Objective 3: Connect mixed forest habitat at Cooper Mountain to other similar habitats in the larger, surrounding landscape by 2015.
Action 1: Conduct aerial inventory of habitats within a 1-2 mile radius of the natural area to determine potential landscape connections. Identify land uses and property ownerships.
Action 2. Identify and work with landowners interested in conserving wildlife corridors using education workshops and purchase of conservation easements or fee simple acquisition from willing sellers.

Medium Priority Actions

Riparian Forest Habitat (Units CFR 1–7)

- Streams are seasonal and not fish bearing.
- Invasive species, such as Himalayan blackberry and ivy, cover only portions of the habitat and needs only a minimum level of maintenance.

Management Guidelines: Invasive species will naturally be reduced over time as canopy grows and provides denser shade and bank stability. Efforts should be made to ensure connectivity of habitat for wildlife as they travel from Lindow Creek to the Tualatin River.

[2] It will not be the same as "old growth" although some characteristics will emulate an old growth forest (Oregon Department of Forestry, 2001)

Objective 1: Increase native shrub and grass covers to levels of dominance in the understory by 2015.
Action 1: Use appropriate physical and chemical methods to remove invasive species.

Objective 2: Ensure riparian habitat connections from Cooper Mountain Natural Area (Lindow Creek) to the Tualatin River by 2015.
Action 1: Conduct an aerial inventory to determine habitat types and degree of existing and potential connectivity in the surrounding landscape
Action 2: Identify land uses, property ownerships and obstacles such as roads, culverts, etc., along the riparian corridor.
Action 3: Identify and work with willing landowners receptive to conserving wildlife corridors on their properties using educational workshops, purchase of conservation easements or fee simple acquisition from willing sellers.
Action 5: Work with local jurisdictions, the Oregon Department of Transportation and other agencies to retrofit culverts or to design and construct appropriate wildlife crossings at key sites and intersections between wildlife and vehicles.

Low Priority Actions

Closed Mixed Forest Habitat (Unit CMF1, northeast section)

- 30 to 40 year-old closed forest contains 60 to 70% closed canopy cover.
- Minimum level of invasive species occur in under story.

Management Guidelines: With appropriate silvicultural (e.g. thinning) treatments, this 30 to 40 year old forest will attain some characteristics of an old growth forest by the year 2050. Key structural components to add will include snags, downed wood and the formation of a multi-layered forest canopy composed of both hard woods and conifers. This increase in diversity of structure will further attract a greater number of species such as the pileated woodpecker, western gray squirrel, black bear and other species. Fuel load will be managed to reduce fire hazard to neighbors.

Objective 1: The mixed–conifer forests located in the northeast portion of Cooper Mountain should be thinned based on basal area calculations so attain the characteristics of an old-growth forest by 2050.
Action 1: Map and assess tree basal area and density.
Action 2: Develop thinning treatment plan.

Objective 2: At least 4 snags/acre and down logs of at least 5-6/acre (Johnson and O'Neill, 2001) are present in the mixed conifer by 2010- 2015
Action 1: Create snags and downed logs by girdling, topping, or herbicide injection of targeted standing live trees.

Management Unit	Current Condition	Management Guidelines to Attain Desired Condition	Stress Factors	Management Actions
Oak Woodlands (W001-W007), quarry pond	These sites vary from early seral to mid seral stages. Trees include oak, Pacific madrone, pine, ash. Dominant shrubs include snowberry and Oregon grape.	Site will be managed to increase connectivity among oak units and will be managed to create a viable oak community that is habitat for cavity nesters and foragers. Cover and structure will be added to the quarry pond to protect the red-legged frog from predation.	Invasives include Scotch broom, Himalayan blackberry, annual brome, hairy chickweed, bachelor buttons in the oak woodlands. Presence of non-native bullfrog in the pond.	Implement prescribed burns, mowing or chemical applications to reduce Scotch broom and Himalayan blackberry. Thin trees, creating snags and down logs for wildlife on site. Plant trees and emergent vegetation in the quarry pond.
Prairie (PRA2 and PRA3)	Both are open prairies with native forbs and include the rare population of white rock larkspur.	Management will sustain and increase population of white rock larkspur and other native species. Shrub layer should be restricted to less than 10% to allow for native forbs and grasses to dominate.	Invasives include Scotch broom, Himalayan blackberry and tall oat grass. Informal trails fragment site.	Management will mimic natural disturbances such as prescribed burning, mowing or appropriate use of chemicals to control invasive species. Close informal trails.
Mixed forest (CMF2–CMF6)	Early seral to mid-seral stages. It is a reforested area with numerous saplings of mixed forest trees such as Douglas fir, ponderosa pines etc. Other tree species on site includes Oregon oak, big leaf maple etc.	Will be reforested up to 2011 and then managed to closed canopy conditions to attain characteristics of old growth forest such as creating snags and downed logs for the western gray squirrel and other wildlife that use this site.	Invasives include Scotch broom, Himalayan blackberry, English hawthorne and other invasives.	Use cutting, mowing or appropriate chemicals to control invasive species and increase the native understory. Interplant trees and shrubs. Thin the forest, create snags and down logs to attain "old growth characteristics". Connect to other similar habitats.
Riparian Area (CFR1 –CFR7)	Early to mid seral stage trees on the average. Big-leaf maple, Douglas fir. Shrubs such as nootka rose, Oregon grape and poison oak.	Manage riparian habitat to achieve a healthy functioning system to provide shade, bank stability, nutrients to the stream and a travel corridor for wildlife to the Tualatin River.	Invasive sp include Himalayan blackberry and ivy. Maintain connectivity for wildlife through the riparian corridor.	Treat invasives using appropriate physical and chemical methods. Establish connectivity for wildlife from Lindow Creek to the Tualatin River. Identify property ownerships and obstacles such as culverts along the riparian corridor. Work with willing landowners by using educational workshops, purchase of conservation easements and/or acquisitions. Work with Oregon Department of Transportation to design and retrofit culverts.
Mixed forest CMF1	30-40 year old forest is largely devoid of a shrub layer. Dominant trees include Douglas fir, grand fir, cedars etc.	Through thinning treatments the forest will attain some old growth characteristics for the western gray squirrel, pileated woodpecker, black bear etc.	The site is largely in a stem exclusion mode (density of trees/acre is high) and the shrub layer is non-existent.	Thin the area to reduce density. Efforts will be made to attain a multilayered forest canopy with snags and down woody debris.

Table 4: Current and Desired Condition and Management Recommendations for Habitat Units.

Monitoring Plan

The Cooper Mountain Natural Area Monitoring Plan will document changes (positive or negative) to 1) the state or condition of priority habitats, 2) the number of plant and animal resources, and 3) measure progress toward the accomplishment of the management objectives described in the previous section. Management guidelines and actions will be adjusted where monitoring indicates limited success in meeting resource management goals. The following monitoring efforts will be undertaken in each habitat.

Oak Woodlands Habitat

Objective 1: Determine if native plants are increasing in the under story.
Method: Measure shrub cover and herb layer cover using ocular estimates inside 1-meter square plots.
Frequency of Monitoring: Conduct survey every other year beginning in 2005.

Objective 2: Determine changes in bird breeding population. Identify native birds and monitor their breeding numbers over time.
Method: Use habitat-based point count protocol for terrestrial birds; emphasize species native to Washington and Oregon (see Appendix B).
Frequency of Monitoring: Conduct bird survey in oak woodlands three times a year during the breeding season.

Objective 3: Monitor use of oak-woodlands and mixed forests by western gray squirrels.
Methods: Calculate number of nests per breeding season. Conduct research to determine additional methods.
Frequency of monitoring: Survey gray squirrel populations in oak woodlands yearly during breeding season.

Objective 4: Track breeding success of the northern red-legged frog.
Method: Use timed visual encounter survey (see Appendix B).
Frequency of monitoring: Perform annual egg mass surveys twice during the breeding season. Ideally, perform the first survey in mid- February and the second in mid-March.

Prairie Habitat

Objective 1: Determine increase in native species based on cumulative management actions.
Method: Use nested frequency to evaluate success of native species in 400 permanent points within 8 macro plots.
Frequency of monitoring: Sample sites about once every two or three years.

Objective 2: Determine size of the white rock larkspur population and map its distribution.

Method: Conduct site inventory in likely habitats. Track individuals using nested frequency sampling in the large prairie and smaller northeastern prairie macro plots. Map occurrence of flowering individuals and estimate number in each mapped micropopulation.
Frequency of monitoring: Sample once every 2–3 years.

Mixed Forest Habitat

Objective: Determine increase in native species in the under story.
Method: Measure shrub cover and herb cover using ocular estimates inside 1-meter square plots.
Frequency of monitoring: Conduct survey of native species every other year beginning in 2005.

Riparian Habitat

Objective: Identify wildlife using the site. Document and map seasonal activity patterns.
Method: Use Cyber tracking technology to record animal signs and site use (Cyber tracking records data into handheld computers connected to GPS units and downloads it into a personal computer).
Frequency of monitoring: Conduct wildlife tracking surveys 2 –3 times a year, repeating every 3-5 years.

Budget

This section provides budget estimates for staff (Table 5), equipment and restoration activities as needed to operate and maintain the site through 2010.

Staffing	Responsibilities	Budget- Estimated annual cost
Supervisor/Ranger/ Seasonal employee	Manage day to day operations of the site; assist with habitat restoration.	Park supervisor (0.5 FTE) - $48,54 Ranger (1.0 FTE) - $67,815 Seasonal (0.5 FTE) - $22,383
Scientists	Oversee monitoring and restoration projects.	Existing Metro staff
Total Staff Costs		$138,743/annually

Table 5: Estimated Budget for Staffing Needs.

Equipment: Material and services for maintenance including annual vehicle charges, equipment rental, landscape supplies, etc is estimated at $38,245/annually.

Restoration Activities: Reforestation efforts in the mixed forest will continue until 2011. Costs will depend on availability of native plant material and plant survival. The maximum cost anticipated for implementing reforestation is $62,500/year for 6 years. The cost of a prescribed burn in the oak woodland or the prairie is approximately $600/acre in addition to $300 for writing a burn plan. This cost per acre may vary depending upon number of acres burnt.

After 2010, approximately $176,988/year is estimated for staffing and maintenance at a minimum. The amount could vary depending upon acres to be restored in any given year.

Funding Sources: In 2003, the Metro Council approved raising some fees in order to provide funding for the development and operation of new natural area sites around the region. These funds will be expended at Cooper Mountain Natural Area, Mt. Talbert Natural Area, Graham Oaks Natural Area and Willamette Cove. It is anticipated that this funding will not be adequate to implement all projects at these four sites and that additional funding will be needed. Additional funding will be sought by Metro and partner agencies from a variety of sources, including but not limited to the following:

Land and Water Conservation Fund Grants
(National Park Service funding administered by Oregon Parks and Recreation Department) www.prd.state.or.us/grants_lwcf.php

U.S. Department of Interior Fish and Wildlife Service
North America Wetlands Conservation Act Grants (NAWCA)
www.tgci.com/fedrgtxt/o4-2717.txt

Oregon Parks and Recreation Department Certified Local Government Grant Program
www.prd.state.or.us/grants-localgov.php

Oregon Watershed Enhancement Board Small Grant Program
http://egov.oregon.gov/OWEB/GRANTS/smgrant_main.shtml

Natural Resource Conservation Service Wildlife Habitat Program (WHIP)
www.nrcs.gov/programs/whip

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Table 6: List of Native and Invasive Species at Cooper Mountain Natural Area
Prepared by Loverna Wilson and George Kral, from observations June 1997-July 2000. Updated August, 2004, Portland Watershed Revegetation Program Staff

Scientific Name	**Common Name**
Abies grandis	Grand fir
Acer circinatum	Vine maple
Acer macrophyllum	Big-leaf maple
Achillea millefolium	Yarrow
*Agropyron repens**	Quackgrass
Agrostis	Bentgrass
Agrostis exarata	Spike bentgrass
Agrostis scabra	Winter bentgrass
*Agrostis stolonifera**	Creeping bentgrass
*Agrostis tenuis**	Colonial bengrass
*Aira caryophyllea**	Silver hairgrass
Allium amplectens	Slim-leaf onion
Alnus rubra	Red alder
*Alopecurus pratensis**	Meadow foxtail
Amelanchier alnifolia	Western serviceberry
Anaphalis margaritacea	Pearly-everlasting
*Anthemis cotula**	Mayweed
*Anthoxanthum odoratum**	Sweet vernalgrass
Aquilegia Formosa	Red columbine
Arbutus menziesii	Madrone
*Arctium**	Burdock
Arenaria macrophylla	Bigleaf sandwort
*Arrhenatherum elatius**	Tall oatgrass
Aster oregonensis	Oregon white-topped Aster
*Avena fatua**	Wild oats
Berberis aquifolium	Tall Oregongrape
Berberis nervosa	Cascade Oregongrape
Bidens	Sticktight
Boisduvalia densiflora	Dense spike-primrose
*Borago officinalis**	Borage
Brodiaea congesta	Northern saitas
Brodiaea coronaria	Bluedicks brodiaea
Brodiaea howellii	Howell's brodiaea

Bromus carinatus	California brome
*Bromus mollis**	Soft brome
*Bromus rigidus**	Ripgut brome
*Bromus secalinus**	Ryebrome; chess
Bromus sitchensis	Alaska brome
*Bromus sterilis**	Barron brome
*Bromus tectorum**	Cheat grass
Bromus vulgaris	Columbia brome
Calochortus tolmei	Tolmie's mariposa; cats-ear
Camassia quamash var.[1] *maxima*	Common camas
Cardamine oligosperma	Little western bittercress
Cardamine pulcherrima var. *tenella*	Slender toothwort
Carex deweyana	Dewey's sedge
Carex hendersonii	Henderson's sedge
Carex ovalis	Football sedge
Carex pachystachya	Thick-headed sedge
Carex tumulicola	Foothill sedge
Ceanothus sanguineus	Redstem ceanothus
*Centaurea cyanus**	Bachelor buttons
*Centaurium umbellatum**	Centaury
*Cerastium viscosum**	Sticky chickweed
*Chrysanthemum leucanthemum**	Oxeye daisy
*Chicorum intybus**	Chicory
Circaea alpine	Enchanter's nightshade
*Cirsium arvense**	Canada thistle
Cirsium edule	Hall's thistle
*Cirsium vulgare**	Bull thistle
Clarkia amoena	Farewell-to-spring
Clarkia rhomboidea	Common clarkia
*Clematis vitalba**	Traveler's joy
Collinsia grandiflora	Large-fld blue-eyed Mary
Collinsia parviflora	Small-fld blue-eyed Mary
Collomia grandiflora	Large-flowered collomia
Collomia heterophylla	Varied-leaf collomia
Conyza canadensis	Horseweed
Corylus avellana	Domestic hazelnut
Corylus cornuta	Western hazelnut
Cornus nuttalli	Pacific dogwood

*Crepis capillaries**	Smooth hawksbeard
*Crepis setosa**	Rough hawksbeard
Cryptantha intermedia	Common cryptantha
Cynoglossum grande	Pacific hound's-tongue
*Cynosurus echinatus**	Hedgehog dogtail
*Cytisus scoparius**	Scot's broom
*Dactylis glomerata**	Orchardgrass
Danthonia californica	California oatgrass
*Daucus carota**	Queen Anne's lace
Delphinium leucophaeum	White rock larkspur; pale larkspur
Deschampsia elongata	Slender hairgrass
*Dianthus armeria**	Grass pink
Dicentra formosa	Bleeding heart
*Digitalis purpurea**	Foxglove
*Dipsacus sylvestris**	Teasel; gypsy-combs
Dodecatheon hendersonii	Henderson's shooting star
Disporum hookeri	Hooker fairy-bell
Draba verna	Spring whitlow-grass
Dryopteris arguta	Coastal shield-fern
Echinocloa crus-gallii	Barnyard grass
Eleocharis ovata	Ovoid spikerush
Eleocharis palustris	Creeping spikerush
Elymus glaucus	Blue wild-rye
Epilobium angustifolium	Fireweed
Epilobium paniculatum	Autumn willow-weed
Epilobium watsonii	Watson's willow-weed
Equisetum	Horsetail; scouring rush
*Erigeron annuus**	Annual fleabane
Eriophyllum lanatum	Woolly sunflower
*Erodium cicutarium**	Filaree
Erythronium grandiflorum	Yellow fawn-lily
*Festuca arundinacea**	Tall fescue
*Festuca bromoides**	Barren fescue
Festuca californica	California fescue
*Festuca megalura**	Foxtail fescue
*Festuca myuros**	Rattail fescue
Festuca occidentalis	Western fescue
Festuca rubra	Red fescue

Fragaria vesca	Woods strawberry
Fragaria virginiana v. platypetala	Broadpetal strawberry
Fraxinus latifolia	Oregon ash
Fritillaria lanceolata	Checker lily; mission bells
Galium aparine	Cleavers; bedstraw
*Galium parisiense**	Wall bedstraw
Galium triflorum	Fragrant bedstraw
Gaultheria shallon	Salal
Geranium bicknellii	Bicknells geranium
*Geranium carolinianum**	Carolina geranium
*Geranium columbianum**	Long-stalked geranium
*Geranium dissectum**	Cut-leaf geranium
*Geranium lucidum**	Shiny geranium
*Geranium molle**	Dovefoot geranium
Geranium oreganum	Western geranium
Geum macrophyllum	Large-leaved avens
Gilia capitata	Bluefield gilia
Glyceria elata	Tall mannagrass
Gnaphalium palustre	Lowland cudweed
Gnaphalium purpureum	Purple cudweed
*Hedera helix**	English ivy
*Holcus lanatus**	Velvetgrass
*Holcus mollis**	Creeping velvetgrass
Holodiscus discolor	Creambush ocean-spray
*Hordeum geniculatum**	Mediterranean barley
*Hypericum perforatum**	St. John's wort
*Hypochaeris radicata**	Spotted cats-ear
Illex	Holly
Iris tenax	Oregon iris
Juncus bufonius	Toad rush
*Juncus effuses v effusus**	European soft rush
Juncus effuses v pacificus	Pacific soft rush
Juncus ensifolius	Dagger-leaf rush
Juncus patens	Spreading rush
Juncus tenuis	Slender rush
Koeleria cristata	Junegrass
*Lactuca muralis**	Wall lettuce
*Lactuca serriola**	Prickly lettuce

*Lamium purpureum**	Red dead-nettle
*Lapsana communis**	Nipplewort
Lathyrus holochlorus	Thin-leaved peavine
Lathyrus nevadensis var. *pilosellus*	Nuttall's peavine
*Leontodon nudicaulis**	
*Lepidium campestre**	Field pepperweed
Ligusticum apiifolium	Celery-leaved lovage
Lilium columbianum	Tiger lily
Linanthus bicolor	Bicolored linanthus
*Linum grandiflorum**	Red flax
Lithophragma parviflorum	Small-fld fringecup
*Lolium multiflorum**	Italian ryegrass
*Lolium perenne**	Perennial ryegrass
*Lolium temulentum**	Annual ryegrass
Lomatium utriculatum	Common lomatium
Lonicera ciliosa	Orange honeysuckle
Lonicera hispidula	Hairy honeysuckle
*Lotus corniculatus**	Bird's-foot trefoil
Lotus micranthus	Small-flowered deervetch
Lotus purshianus	Spanish clover
Lupinus bicolor	Two-color lupine
Lupinus micranthus	Field lupine
Lupinus polyphyllus	Bigleaf lupine
Luzula campestris	Field woodrush
Madia gracilis	Common tarweed
Madia sativa	Coast tarweed
*Malva moschata**	Musk mallow
Marah oreganus	Oregon bigroot
*Medicago lupulina**	Black medic
Melica subulata	Alaskan oniongrass
*Melissa officinalis**	Lemon balm
Microsteris gracilis	Pink microsteris
Mimulus guttatus var. *depauperatus*	Yellow mimulus
Monotropa uniflora	Indian-pipe
Montia fontana	Water chickweed
Montia linearis	Narrow-leaved montia
Montia perfoliata	Miner's lettuce
Montia sibirica	Candyflower; springbeauty

*Myosotis discolor**	Yellow & blue forget-me-not
Navarretia intertexta	Needle-leaf navarretia
Navarretia tagetina	Northern navarretia
Nemophila parviflora var. *parviflora*	Small-flowered nemophila
Nemophila pedunculata	Meadow nemophila
Oemleria cerasiformis	Indian plum
Oenanthe sarmentosa	Water parsley
*Oenanthe biennis**	Yellow evening primrose
Orobanche uniflora	Naked broomrape
Osmorhiza chilensis	Sweet-cicely
Oxalis suksdorfii	West. yellow oxalis
*Parentucellia viscosa**	Yellow parentucellia
Phalaris arundinacea	Reed canarygrass
Philadelphus lewisii	Mockorange
Physocarpus capitatus	Pacific ninebark
Pinus ponderosa	Ponderosa pine
*Plantago lanceolata**	English plantain
*Plantago major**	Common plantain
Plectritis congesta	Rosy plectritis
*Poa annua**	Annual bluegrass
*Poa compressa**	Canada bluegrass
*Poa palustris**	Fowl bluegrass
*Poa pratensis**	Kentucky bluegrass
*Poa trivialis**	Roughstalk bluegrass
Polygonum aviculare	Doorweed; prostrate knotweed
Polygonum spergulariaeforme	Fall knotweed; spurry knotweed
Polypodium glycyrrhiza	Licorice-fern
Polystichum munitum	Swordfern
*Populus alba**	White poplar
Populus trichocarpa	Black cottonwood
Potentilla glandulosa	Sticky cinquefoil
Potentilla gracilis	Northwest cinquefoil
Prunella vulgaris	Self-heal; all-heal
Prunus emarginata	Bitter cherry
Pseudotsuga menziesii	Douglas fir
Psoralea physodes	California-tea; scurf-pea
Pteridium aquilinum	Bracken
Pyrola picta	White-vein pyrola

Quercus garryana	Oregon white oak
Ranunculus occidentalis	Western buttercup
Ranunculus uncinatus	Little buttercup
*Raphanus sativus**	Wild radish
Rhamnus purshiana	Cascara
Rhus diversiloba	Poison oak
Ribes sanguineum	Red-flowering currant
*Rosa eglanteria**	Sweetbrier rose; eglantine
Rosa gymnocarpa	Little wild rose
*Rosa multiflora**	multiflora rose
Rosa nutkana	Nookta rose
*Rubus discolor**	Himalayan blackberry
*Rubus laciniatus**	Evergreen blackberry
Rubus leucodermis	Blackcap; black raspberry
Rubus parviflorus	Thimbleberry
Rubus ursinus	Oregon blackberry
*Rumex acetosella**	Sheep sorrel
*Rumex crispus**	Curly dock
*Rumex obtusifolius**	Bitterdock
Salix hookeriana (formerly Salix piperi)	Hooker willow (Piper willow)
Salix lasiandra	Pacific willow
Salix piper	Piper's willow
Salix scouleriana	Scouler's willow
Salix stichensis	sitka willow
Sambucus cerulea	Blue elderberry
Sambucus racemosa	Red elderberry
Sanguisorba occidentalis	Annual burnet
Sanicula bipinnatifida	Purple sanicle
Sanicula crassicaulis	Pacific sanicle
Satureja douglasii	Yerba buena
Saxifraga integrifolia	Swamp saxifrage
*Scleranthus annuus**	Annual knawel
*Senecio jacobaea**	Tansy ragwort
*Senecio sylvatica**	Wood grounsel
*Senecio vulgaris**	Common groundsel
*Sherardia arvensis**	Blue field-madder
Sidalcea campestris	Meadow sidalcea
Silene antirrhina	Sleepy catchfly

Smilacina racemosa	Western Solomon-plume
Smilacina stellata	Starry Solomon-plume
*Solanum dulcamara**	Bittersweet nightshade
Solidago canadensis	Canada goldenrod
*Sonchus asper**	Prickly sow-thistle
*Sonchus oleraceous**	Common sow-thistle
Spiraea betulifolia	Shiny-leaf spiraea
Spiraea douglasii	Douglas spiraea; hardhack
Stachys	Hedgenettle
*Stellaria media**	Chickweed
Stipa lemmonii	Lemmon's needlegrass
Streptoptus roseus	Twisted stalk
Symphoricarpos albus	Common snowberry
Symphoricarpos mollis	creeping snowberry
*Taraxacum officinale**	common dandelion
Taxus brevifolia	Pacific yew
Tellima grandiflora	Fringecup
Thuja plicata	Western red cedar
*Torilis nodosa**	Knotted hedge-parsley
*Tragopogon dubius**	Yellow salsify
Trichostema lanceolata	Vinegar weed
Trientalis latifolia	Western starflower
Trifolium bifidum	Pinole clover
*Trifolium dubium**	Least hop clover
*Trifolium hybridum**	Alsike clover
Trifolium microcephalum	Woolly clover
Trifolium microdon	Thimble clover
Trifolium oliganthum	Few-flowered clover
*Trifolium pratense**	Red clover
*Trifolium Procumbens**	Hop clover
*Trifolium repens**	White clover; Dutch clover
*Trifolium subterraneum**	Subterraneum clover
Trifolium tridentatum	Tomcat clover
Trifolium variegatum	White-tip clover
Trillium ovatum	White trillium
Triodanus perfoliata	Venus' looking-glass
Trisetum canescens	Tall trisetum
Vaccinium parvifolium	Red huckleberry

Vancouveria hexandra	Duckfoot; inside-out-flower
*Verbascum blattaria**	Moth mullein
*Verbascum thapsus**	Flannel mullein
Veronica americana	American speedwell
*Veronica arvensis**	Common speedwell
Viburnum ellipticum	Oval-leaved viburnum
Vicia americana	American vetch
*Vicia cracca**	Cat peas; tinegrass
Vicia gigantean	Giant vetch
*Vicia hirsute**	Tiny vetch
*Vicia sativa**	Common vetch; tare
*Vicia villosa**	Hairy vetch
Viola adunca	Early blue violet
Viola howellii	Howell's violet
Viola glabella	Stream violet
Viola nuttallii var. *praemorsa*	Canary violet ; upland yellow violet

* = Non-native species, introduced after European settlement.
292 records: 193 species; 99 introduced species

Table 6 (continued): Plant List for Cooper Mountain Natural Area
City of Portland Watershed Revegetation Program, August 2004

Exotic Species

Several non-native species were additions to the list and presumably recently introduced to the site. *Clematis vitalba* or Traveler's joy, is a non-native vine propagated and sold in the past by the nursery industry. Although this species is quite common in Portland, locations of invasions on the West side of the Metro area remain sparse. This species is extremely invasive and should be controlled at once to prevent invasion throughout the site. Currently, distribution on site is limited is the area just west of the entrance gate on Stonecreek Drive.

Shiny-leaved geranium or *Geranium lucidum* has also been found on the north end of the large meadow. This species is found throughout the Willamette Valley as an extremely aggressive forb invading Oak Woodlands and displacing native forbs. At Cooper Mountain, it appears to be colonizing mounds of deeper soil along with a variety of invasive perennial grasses.

Several lemon balm or *Melissa officinalis* plants were found in the westernmost riparian draw. This species has a range of tolerance with respect to moisture and also sun exposure. On various sites throughout the city of Portland, Watershed Revegetation Program staff have observed this species naturalizing in upland forest as well as exposed wetland sites.

Domestic hazelnut or *Corylus avellana* has likely been present on Cooper Mountain since nearby hazelnut farms have been in production. In urban and rural areas, *C. avellana* is frequently more common than our native *Corylus cornuta* v. *californica*. There are many named cultivars of *C. avellana*, which do hybridize.

Additional exotic species:

Chicorum intybus	distributed throughout dry, disturbed areas of site
Echinocloa crus-gallii	in quarry pond
Medicago lupulina	dry to moist disturbed areas throughout site
Populus alba	one plant roadside just NW of quarry pond
Rosa multiflora	in second growth conifer woods north of small meadow

Native Forbs

Oak/Prairie Forbs: *Aster chilensis* or Pacific aster was located in several oak woodland edge areas throughout the site. The identification of this species is questionable is it displays character traits of both *A. chilensis* and *A. hallii*. In the Portland area, both of these species are known to intergrade with *A. subspicatus*[1] (Dick Hall, OSU Herbarium, pers comm.). This species occurs at the edges of Oak Woodlands throughout the site. The presence of *A. chilensis* can be described as infrequent but well distributed. Broadpetal strawberry or *Fragaria virginiana v. platypetala* is a common species on the

Oak Woodland and Riparian draw throughout the site. Several Willamette Valley Prairie Ecologists believe there is a strong association between the presence of *F. virginiana v. platypetala* and *Delphinium leucophaeum* (Alverson, Kuykendall, personal communication 2004). Presence of this species throughout the site many indicate potential opportunities for increasing Delphinium populations at Cooper Mountain.

Only two additional oak/prairie-associated forbs were located on site. The first, purple sanicle or *Sanicula bipinnatifida*, is sparsely present in oak woodlands and pine-oak forests from California through southern British Columbia. BC is the north edge of its range and in that region it is considered a candidate for threatened or endangered (or possibly extirpated) status. In the Willamette Valley, it isn't common but hasn't been identified for consideration on state or federal t&e lists. The second prairie-associated forb found was *Trichostema lanceolata* or vinegar weed. This species is not abundant but well distributed throughout the main prairie.

Riparian Forbs: In the western riparian draw, the topography is much more slight than other draws on the site which tend to be quite steep in nature. In the riparian areas of this draw, field surveys revealed several species missing from the list more commonly found in moist conifer forests.

Vanilla leaf	Achyls trifoliata
Bleeding heart	Dicentra formosa
Twisted stalk	Streptoptus roseus

Taxonomic Changes

Scientific names for the Cooper Mountain Plant List were derived from the following sources in order of geographical and historical relevance:

1. *The Oregon Flora Project*[1]
2. *Atlas of Oregon Carex*[1]
3. *Flora of the Pacific Northwest*[1]
4. *The Jepson Manual: Higher Plants of California*[1]

Present nomenclature	***Former nomenclature***
Carex ovalis Gooden.	C. leporina L.
Cirsium edule Nutt.	Cirsium hallii (A. Gray) M.E. Jones
Chrysanthemum leucanthemum L.	Leucanthemum vulgare Lam.
Juncus effusus	L. var effusus Juncus effusus L. var. effusus Juncus effusus L. var. pacificus Fernald & Wiegand
Erigeron annuus	status changed from native to invasive species

Table 7: Wildlife Sighted at Cooper Mountain Natural Area
Breeding bird surveys and animal tracking studies conducted by Metro from 2000 to 2004

Habitat	Common Name	Scientific Name
OAK WOODLAND	American robin	Turdos migratorius
	Bewicks wren	Thryomanes bewickii
	Black bear	Ursus americanus
	Black capped chickadee	Poecile atricapilla
	Brown headed cowbird	Molothrus ater
	Bushtit	Psaltriparus minimus
	California ground squirrel	
	Coyote	Canis latrans
	Deer	Odocoileus hemionus
	Downy woodpecker	Picoides pubescens
	European starling	Sturnus vulgaris
	Evening grosbeak	Coccothraustes vespertinus
	House finch	Carpodacus mexicanus
	House wren	Troglodytes aedon
	Lazuli bunting	Passerina amoena
	Lesser goldfinch	Carduelis psaltria
	Loggerhead shrike	Lanius ludovicianus
	Long tailed weasel	Mustela frenata
	Long toed salamander	Eurycea longicauda
	North American Elk	Cervus Elaphus
	Northern alligator lizard	Gerrhonotus coeruleus
	Northern flicker	Colaptes aurates
	Olive sided flycatcher	Contopus cooperi
	Orange crowned warbler	Vermivora celata
	Pacific slope flycatcher	Empidonax dificilus
	Red Fox	Vulpes vulpes
	Rubber boa	Charina bottae
	Ruby crowned kinglet	Regulus calendula
	Rufous hummingbird	
	Solitary vireo	Vireo solitarius
	Spotted towhee	Pipilo maculatus
	Striped skunk	Mephitis mephitis
	Tree swallow	Tachycineta bicolor
	Turkey vulture	Catharates aura
	Warbling vireo	Vireo gilrus
	Western blue bird	Sialia mexicana
	Western gray squirrel	Sciurus griseus
	Western Scrub jay	Aphelcoma californica
	Western Skink	Eumeces skiltonianus
	Western woodpewee	Contopus sordidulus
	White breasted nuthatch	Sitta carolinensis

	White crowned sparrow	Zonotrichia leucophrys
	Yellow-breasted chat	Icteria virens
PRAIRIE	American goldfinch	Carduelis tristis
	American robin	Turdos migratorius
	Black bear	Ursus americanus
	Brush rabbit	Sylvilagus bachmani
	California quail	Callipepla californica
	Common yellow throat	Geothlypis trichas
	Coyote	Canis latrans
	Dark eyed junco	Junco hyemalis
	Deer	Odocoileus hemionus
	North American Elk	Cervus Elaphus
	Red Fox	Vulpes vulpes
	Red tailed hawk	Buteo jamaicensis
	Western blue bird	Sialia mexicana
	Western woodpewee	Contopus sordidulus
	Yellow-breasted chat	Icteria virens
RIPARIAN	American robin	Turdos migratorius
	Common garter snake	Thamnophis sirtalis
	Coyote	Canis latrans
	Deer	Odocoileus hemionus
	Killdeer	Charadrius vociferus
	North American Elk	Cervus Elaphus
	North western garter snake	Thamnophis ordinoides
	Northern Oriole	Icterus galbula
	Red Fox	Vulpes vulpes
	Song sparrow	Melospiza melodia
	Striped skunk	Mephitis mephitis
	Willow flycatcher	Empidonax traillii brewsteri
	Wilson's warbler	Wilsnia pusitta
	Yellow-breasted chat	Icteria virens
MIXED FOREST	American robin	Turdos migratorius
	Black bear	Ursus americanus
	Black headed grosbeak	Pheuticus melanocephalus
	Black throated gray wabler	Dendroica nigrescens
	Cedar waxwing	Bombycilla cedrorum
	Chipping sparrow	Spizella passerina
	Coyote	Canis latrans
	Deer	Odocoileus hemionus
	Douglas squirrel	Tamiasciurus douglasii
	Downy woodpecker	Picoides pubescens
	Fox sparrow	Passerella iliaca

2002	a) Planted madrone, doug fir, grand fir, service berry, oak and elderberry b) Applied herbicide to scotch broom on prairie and cut scotch broom and tall oat grass	a) 8 acres on southwest of CMF5 b) 26 acres on W006
2003	a) interplanted oak b) hawthorne and scotch broom and tall oat grass	a) Oak Woodland (W004) b) Mixed Forest (CMF7)
2004	a) Applied herbicide Garlon, cut some trees to allow growth in others b) Cut scotch broom in Jan. to March. Sprayed in Jan. (Rodeo- R11) on mounds containing tall oat grass	a) East of Meadow (PRA1) and west end of Mixed Forest (CMF5) b) Oak Woodland (W006) and Prairie (PRA2)

AVIAN MONITORING PROTOCOL

Target Habitats

Emergent wetlands, oak savanna, oak-pine savanna restoration sites, ash forest, conifer reforestation sites, and upland prairie

Method

Conduct avian surveys from fixed count stations. Protocol represents methods recommended by Huff, et al. (2000).

Habitat-Based Point Count Monitoring

- Define target sampling areas (SA) at site, considering the following:
- Habitat type
- Management activities
- Establish Point Count Stations, considering the following criteria:
- At least 5 stations/SA
- Each station should be ≥ 150 m from neighboring stations
- Each station should be ≥ 125 m from the boundary
- Flag locations 50m from point count station at N, E, S, and W compass points to help delineate count boundaries.
- Conduct point counts using following protocol (Record data on provided data sheets):
- *Conditions (Do not conduct counts under the following weather conditions)*:
- Rain
- Cold drizzle (light drizzle okay if birds are active)
- Sleet
- Snow
- Heavy ground fog
- Strong winds (>20mph)
- *Timing of Counts*:
- Conduct ≥ 3 counts/ season beginning in mid-May and finishing by the end of June for breeding counts and be separated by ≥ 7-10 days. Adjustments to dates can be made if weather is unusually cool or warm. At least 3 visits should also be made between October and February for non-breeding populations.
- Try to visit sites at similar dates on subsequent years.
- Conduct all counts during period of peak bird activity (roughly between sunrise and 10:00 AM).
- Visit all points in an array in one day.
- *Site Visitation Procedure*:
- Alternate initial starting station each visit (by starting at stations #1 or #5 on alternating visits to the site).

- Travel as quietly as possible between stations to avoid disturbing birds
- Wait 2 minutes at each station before beginning count to allow bird community to "settle down" (make sure you are quiet, breathing normally).
- Spend 5 minutes at each point, separating birds detected into 0-3 minutes and 3-5 minutes.
- Record detections as either "typical" or "fly-over". A detection is when the bird is first seen or heard in a point count. A typical detection is habitat specific and spatially defined (i.e. in relation to the 50-m radius and surrounding vegetation). A fly-over detection is defined as a bird detection above the highest vegetation (i.e. tree canopy). An associated fly-over detection is one where the bird appears actively involved in the site (habitat type), whereas an independent fly-over is not using the site below
- Record typical detections as either 0-50 meters (within the point count radius) or >50 meters.
- Tally juveniles separately. Record flush detections (birds neither seen nor heard during station counts). These are usually disturbed or flushed as a person enters or leaves a point count site, but are found within the point count radius. Flushes that occur between stations should be recorded in the field notes.
- Be careful of double counts! Once you have detected a bird once and recorded it, you do not want to note it again.
- Record species using 4-digit common name species codes. If you are unsure of this notation, or of the code for a specific species, just write out the species name.

References:

Huff, M. H.; K. A. Bettinger; H. L. Ferguson; M. J. Brown; and B. Altman. A habitat based point-count protocol for terrestrial birds, emphasizing Washington and Oregon. U.S. Department of Agriculture/Forest Service Gen. Tech. Rep. PNW GTR-501.

AMPHIBIAN EGG MASS MONITORING PROTOCOL for Northern red-legged frog (Rana aurora aurora)

Target Species

- Pacific chorus frog (*Pseudacris regilla*)
- Bullfrog (*Rana catesbeiana*)*
- Northwestern salamander (*Ambystoma gracile*)
- Long-toed salamander (*Ambystoma macrodactylum*)

** invasive exotic species*

Method

Sampling Approach: Visual Encounter Surveys

Locate and characterize oviposition sites using visual encounter surveys methods established at Cooper. Egg masses are mapped during time-constrained visual searches of putative oviposition (i.e., lentic) habitat (e.g., shallow wetland sites near forests or suitable upland hibernacula. Wetlands should support thin-stemmed vegetation such as grasses, small forbs and/or rushes or narrow leaf sedges such as *Carex operta*). Surveys should span a minimum of 1 hour at each site if the site is not surveyed in its entirety. If partial survey, the area covered should be marked on a map and coupled to datasheets. Attempts should be made to visit the wetland at least 3 times between Late January and the end of March.

Begin systematic survey of pond/area as follows:

1. Start clock. Begin at one end and walk slowly back and forth to cover - watching every step to prevent stepping on egg masses and walking slowly to avoid stirring sediment.
2. When egg mass is located, notify data recorder- mark time and location. Stop clock.
3. Take measurements and observations in order they occur on data sheet.
4. Mark egg masses with unique ID# by attaching flagging on vegetation (or on a bamboo stake if necessary). For red-legged frogs and long-toed salamanders.
5. Write the number of the egg mass from data sheet on flagging before tying onto vegetation.
6. Characterize conditions and habitat (air and water temperature, water depth, attachment type; see attached datasheet).
7. After entire pond has been surveyed mark down end time and weather on data sheet.

STAFF REPORT

IN CONSIDERATION OF RESOLUTION NO. 09-4047 AUTHORIZING THE CHIEF OPERATING OFFICER TO ENTER INTO AN INTERGOVERNMENTAL AGREEMENT WITH THE TUALATIN HILLS PARK AND RECREATION DISTRICT FOR JOINT MANAGEMENT OF COOPER MOUNTAIN NATURE PARK.

Date: April 20, 2009 Prepared by: Teri Dresler
503-797-1790

BACKGROUND

Metro acquired more than 230 acres of property located in Washington County, Oregon, known as the Cooper Mountain Natural Area as part of the 1995 Open Spaces Bond Measure. Metro staff worked with Tualatin Hills Park and Recreation District to develop a Master Plan that was approved by Metro Council on December 1, 2005 as the Cooper Mountain Master Plan and Management Recommendations. In April 2006 the Washington County Board of Commissioners approved the Cooper Mountain Master Plan and Management Recommendations.

The Master Plan established a mission to "balance protection and restoration of the unique natural resources of Cooper Mountain Natural Area with the public's enjoyment of nature-based recreation". Using funding from the 2006 Metro Natural Areas Bond Measure, Metro will soon complete construction of extensive public improvements to open the Cooper Mountain Nature Park for public use and enjoyment.

Metro and THPRD wish to jointly manage the Nature Park consistent with the approved Master Plan, with the primary goal being protection of the Nature Park's natural resources, enhancement and protection of wildlife habitat, and providing public recreation and education.

Metro and THPRD believe there are numerous benefits to managing this facility as a partnership. The benefits include: efficient delivery of high quality service from the local provider (THPRD), expansion of environmental education and natural area access for patrons, new hiking, wildlife watching, recreation opportunities, and cost savings for taxpayers.

The Intergovernmental Agreement clearly outlines the responsibilities and obligations of the parties with respect to the allowable uses, improvements, management, maintenance, restoration, and operation of the Nature Park. The THPRD Board approved the IGA at their March 2, 2009 meeting.

THPRD will be compensated for services provided according to an annual budget agreed upon by both parties in advance. The term of the IGA is for 10 years with an automatic extension for another 10 years if neither party wishes to terminate the agreement.

ANALYSIS/INFORMATION

1. **Known Opposition**
   None

2. **Legal Antecedents**

1995 Metro Open Spaces Bond Measure approved by the voters on May 16, 1995.
Resolution No. 05-3643, "For the Purpose of Approving the Cooper Mountain Master Plan and Management Recommendations," approved, December 1, 2005.
2006 Metro Natural Areas Bond Measure approved by the voters on November 8, 2006.

3. **Anticipated Effects**

Metro staff has already begun the process of transitioning information about the property, the improvements, and Metro standards and policies. Effective with the opening of the Nature Park, Metro staff will work with THPRD staff to transition the property management activities from Metro to THPRD. THPRD will be immediately responsible for the daily operations of the built facilities, educational programming, overall operations, and property maintenance. Metro staff will coordinate with THPRD on educational offerings and volunteer activities that may be provided by Metro staff.

Metro and THPRD natural resource science staff will work together to develop a new Cooper Mountain Natural Resource Management Plan to replace the current plan that expires in 2010. During the first five years of this agreement, Metro staff will take the lead on natural resource management of the site, involving THPRD staff in this work as often as possible to transfer the skills developed on this site by Metro staff, to THPRD staff.

Metro staff will continue to be involved in the management of the Cooper Mountain Nature Park to the extent necessary and reasonable for as long as needed.

4. **Budget Impacts**

Metro has agreed through this IGA to pay THPRD on a quarterly basis for services provided at the Nature Park. The budget for the first year is agreed to be $128,478. Each year thereafter, based on an annual meeting between Metro and THPRD, and within a 3% inflation factor, an agreed upon amount will be budgeted for services to be provided by THPRD at the Nature Park. Please see Attachment 1 to the Staff Report.

All renewal and replacement projects will be budgeted and paid for by Metro. Any capital improvement investments will be agreed upon in advance by both Metro and THPRD as to the substance of the improvement and how the costs for the improvement will be paid.

RECOMMENDED ACTION

The Chief Operating Officer recommends approval of Resolution 09-4047.

Attachment 1 to Staff Report
Resolution 09-4047
Staffing and Compensation
Tualatin Hills Park & Recreation District - Cooper Mountain Nature Park - Operation & Maintenance Costs

Tualatin Hills Park & Recreation

Description	FTE	Salary Costs
Maintenance & Operations		
Park Ranger	1	$ 59,230
Worker - seasonal	0.5	$ 14,276
building maintenance/cleaning		$ 3,960
mowing/heavy equip support		$ 500
demand maint support/repair		$ 950
Trail maintenance		$ 2,500
Operating supplies		$ 4,500
Utilities		
water/sewer		$ 625
electric		$ 2,000
gas		$ 625
telecom		$ 1,500
garbage/recycle		$ 2,025
Sonitrol Security		$ 1,728
Contract services (building related)		$ 800
Hazard tree contractors		$ 4,500
Vehicle rental/maintenance		$ 800
Staff development		$ 500
Environmental Education		
Program Coordinator	0.5	$ 16,710
Env. Educator - seasonal	0.25	$ 6,050
General operating		$ 3,000
Events budget		$ 1,000
Mileage		$ 700
Total		**$ 128,478**

Metro

Description	FTE	Salary Costs
Maintenance & Operations		
Supervisor	0.5	$ 42,500
Park Ranger	1	$ 64,000
Seasonal Worker	0.5	$ 10,000
Trail Maintenance		$ 2,500
Operating Supplies		$ 11,000
Utilities		
water/sewer		$ 625
electric		$ 2,000
gas		$ 625
telecom		$ 1,500
garbage/recycle		$ 2,025
Misc. suppies, vehicle, fuel		$ 6,000
Contracted services		$ 20,000
Brush cutting, spot weed control		$ 3,000
Staff development		$ 500
Environmental Education		
Total		**$ 166,275**