

Mountain Park Homeowners Association Common Property Master Plan

Prepared For:

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Report of Findings

Mountain Park Common Area Master Plan

A Master Plan for the Mountain Park Common Property will serve as a guide for future improvements and management of the areas jointly owned and managed by the Mountain Park Home Owners Association (MPHOA). The Master Plan will consider a full range of community needs and desires while preserving the natural spaces that define Mountain Park. The Common Property Master Plan includes a preferred design strategy with critical elements identified as Priority Tasks. A Report of Findings containing a Background Narrative, a Planning Goal Statement, recommendations for any new Policies, identification of specific Activities for Assessment and Implementation, Exhibits and an Appendix comprise the Master Plan format. Community input was critical to the developmental success of the Master Plan and a group of resident professionals including architects, engineers, landscape architects and designers from the Mountain Park community served on the Common Property Master Plan Committee providing guidance and input throughout the process.

The Mountain Park Home Owners Association Board of Directors assigned the Common Property Master Plan Committee (CPMP Committee) the task of creating a Master Plan for the more than 185 acres of common area throughout the Mountain Park community. Professionals from Pacific Habitat Services, Inc. (PHS) prepared a preliminary Natural Areas Assessment in 2012¹ identifying the opportunities and constraints facing Mountain Park's common areas. Building on this information, the CPMP Committee developed and prioritized a set of tasks to address each of these opportunities and constraints in turn.

It was the goal of the MPHOA and the CPMP Committee to create a Master Plan that represents the diverse needs of the Mountain Park community and its residents. A web page will be developed to keep the residents of Mountain Park informed about the process and will offer an opportunity to give input. It is critical that we continue to verify the content of existing data and clarify the information that we collect as current and relevant. Additionally, it is important to provide the ability to make educated decisions when prioritizing the features developed in the common property.

The Priority Tasks identified and addressed by the CPMP Committee, in order of importance were...

1. Invasive species management on common property and private property.
2. Managed grass areas including large areas such as parks and strip grass areas such as streetscapes and drainage sites.
3. Monuments and trail signage.
4. Trails and pathway management.
5. Tree resource strategy.
6. Enhancement of riparian areas and other habitat.
7. Playground management.
8. Viewpoint management.

¹ Refer to Appendix A.

Mountain Park Common Area Master Plan

Each of these Priority Tasks was fully developed and measured against the strategic framework already identified by the Mountain Park Homeowners Association Board of Directors. The standards of measure included...

1. The Mission:

To develop a Common Property Master Plan as a guide for making tactical decisions regarding the common property while ensuring continuity and consistency among the various elements of Mountain Park for future decades.

2. The Vision:

To honor the vision of the original developers and long-time residents for a place that is “fitted into the natural landscape, not superimposed on it” and to maintain a theme of “Nature’s Neighborhood” for future generations.

3. The Values:

To keep a natural setting with planned connectivity and to maintain access and usage by Mountain Park residents while optimizing the natural resources and keeping to an aesthetic standard.

A decision matrix was developed for use in prioritizing the activities proposed under several of the tasks and these matrixes are included as Exhibits 1, 2, 3, 7 and 8. Additional recommendations were taken from the PHS and Alta reports identified as references for Exhibits 4, 5 and 6. A validation matrix to assess how to manage encroachment on to common property is also included as Exhibit 9. The CPMP Committee worked with the Mountain Park Landscape Division in developing the specific tasks, timelines and identifying responsibilities for implementing the proposed activities.

Overarching priorities such as how to manage encroachment issues on Mountain Park common property, education and outreach of Mountain Park residents regarding the common properties and fiduciary responsibility for the common properties including all maintenance requirements and proposed capital improvements were also considered and will be included in this Master Plan. Policies addressing each “big picture” priority task will be recommended for development and implementation by the Board with assistance from staff and advice from counsel. These priority tasks will be incorporated in to this Master Plan as they are implemented and put in to effect.

This Master Plan acknowledges the ongoing efforts by the Mountain Park Homeowners Association Board of Directors to develop reasonable policies that govern the common properties and other resources. The requirement to manage both staff resources and financial resources to implement any portion of this Master Plan remains the responsibility of the Board. The CPMP Committee members developed the information contained in this Master Plan in cooperation with the Board and may remain in an advisory role as needed.

Mountain Park Common Area Master Plan

The Management Plan addresses each priority task in order of importance with recommendations of strategies, goals and required policies for implementation of the Common Property Master Plan. The Priority Task Management Plan may be found on pages 1-14 in the Report of Findings.

The Appendices found at the end of this document contains graphics, photographs and other references used in the development of this Common Property Master Plan. The Appendix is listed as A, B, C, D and E.

Management Plan

Priority Task 1

Invasive Plants: A) Common Property and B) Private Property

Background:

Invasive species, specifically plant specimens, are located on both common property and private properties within Mountain Park. There are also situations where invasive plant species outside of Mountain Park may be impacting the properties within Mountain Park. The Mountain Park Homeowners Association (MPHOA) Common Property Master Plan (CPMP) has addressed invasive species issues in an integrated way. However, there are several policy issues (primarily relating to private property) and a planning priority that separate how invasive species are to be dealt with in the Master Plan's implementation.

A) Common Property

Planning Goal Statement(s): The overall goal for efforts to address invasive plants on common property is proposed in four parts:

- 1) To provide for all Mountain Park residents a broad base of education about invasive species and their impact. (Refer to Appendix A for description of invasive plants.)
- 2) To begin immediately to prevent the introduction of any new invasive species within Mountain Park common property.
- 3) To reduce by 90% the impact of invasive species on common property by 2022.
- 4) To implement a long-term management plan to assure sustainable and cost-effective reductions in invasive plant incursions.

The education programs and the policies and procedures to prevent the introduction of any new invasive plant species on Mountain Park common property should begin immediately (summer 2012). The education programs are considered to be core elements on the CPMP and will address all goals described in this report by providing a base of knowledge and communication that will support all activities. In these education programs, and in other aspects of the Master Plan, we will take advantage of partnering relationships with other public and private organizations that are dealing with invasive plant species and other program issues that are part of the Master Plan. Examples of our expected relationships with these other organizations are: education materials, visiting speakers, participation in regional planning groups and in the development of public policy.

Funding to support several elements of the CPMP may be available from outside sources. Identifying these sources has been part of the current master planning process and is proposed to continue through implementation of the plan. The responsibility for leading the efforts to both identify potential outside funding sources and to pursue the appropriate application processes will rest with a proposed new standing Common Property Landscape Committee (CPLC), authorized by the MPHOA Board, that is recommended as part of this plan.

Management Plan

Priority Task 1

New Policy: The Mountain Park Homeowners Association Common Property Master Planning Committee recommends that the Board of Directors establish a permanent Common Property Landscape Committee, reporting to the Board, which will have responsibility to continue the efforts proposed in this plan. The new committee of homeowners and others will work closely with staff to define appropriate details of future plans and to assist as appropriate in implementation of the plans.

B) Private Property

Planning Goal Statement(s): The management and control of invasive species on private property was not a priority for the 2012 MPHOA Common Property Master Plan. However, the priority efforts to address invasive species on common property will provide information and define activities that can be of significant benefit to a long-term objective of dealing with invasive species on both common and private properties. Two of the four parts of the plan for common property (Education and Containment) will have a direct application to the plans for private property and these will be applied to all properties and homeowners. No significant additional cost is expected to follow this plan and there need not be a diversion of the focus by including appropriate applications of these two tasks to private properties.

Prior to adopting a specific plan to address invasive species on private property, a comprehensive policy that applies to invasive plant species on private property should be developed and adopted by the Board. Policies do exist for the City of Lake Oswego (City Code 34.10.520) and may exist for other applicable jurisdictions. The draft below is proposed as a starting point for discussion of this issue within the Mountain Park community.

New Policy: The following elements are proposed as a starting point for preparation of a policy dealing with invasive species on private property within Mountain Park:

- 1) Private property owners in Mountain Park will be responsible to assure that no invasive species on their property move on to common property or any another property.
- 2) If an invasive plant species moves from a private property on to common property, the private property owner will be responsible for removal and restoration of the common property.
- 3) If a private property owner does not remove the invasive plant as described in 2) (above), Mountain Park staff will take initiative to remove the invasive plants and will charge the homeowner all associated costs.

Management Plan

Priority Task 1

Activities for assessment and implementation

Education - Establish an on-going program that provides an informed basis for decisions and activities related to invasive species in Mountain Park.

- Develop a plan to educate members of the Mountain Park community to problems of invasive species and the extent of spread in common property.
- Identify sources of educational material that could be used with the community and engage outside partners in education.
- Select a minimum of 5 initial demonstration areas. Activities to include showing older restored areas, newly restored areas and areas that were not restored. Some demonstration should be around the clubhouse.
- Develop a program to provide Mountain Park owners with access to non-invasive and native or naturalized plants for use on private properties.
- Integrate education with other goals and activities of the CPMP.

Containment - Prevent the introduction of any new invasive species and contain the physical expansion of all existing invasive species incursions.

- Rank species infestation by a) ability to eradicate, b) aggressiveness of expansion, c) negative impact, d) other criteria.
- Build upon the PHS report and complete a detailed map of all common areas with mapping of invasive species.
- Monitor the extent of invasive species incursion and update mapping annually.

Reduction - Monitor the extent of invasive species incursion and update mapping at least annually.

- Divide all common property into management areas defined by extent of invasive species incursion and by management objectives. Define categories.
- Define categories of targeted plant species as an additional basis of differentiation for management and reduction strategies.
- Utilize a decision making matrix tool to prioritize and prepare maps of the two objective areas above.
- Prioritize the management areas and categories and estimate resources and timeline needed to eradicate invasive species and repair/replant.
- Prepare a comprehensive 10-year work plan for reduction of invasive species; work with Board to adopt and implement.
- Identify and engage public and private partnerships that can assist in reduction of invasive species and provide grant funding.

Management – Define and implement a management plan to assure sustainable and cost effective reductions in invasive species incursions.

- Identify the areas/types of infestation that can be addressed by Mountain Park staff and those that need to be outsourced.
- Identify outside sources of funding for maintenance.

Private Property Plan – Develop a detailed plan for monitoring and reduction of invasive species on private property by January 2014. Seek advice from counsel regarding the approach and enforcement.

Management Plan

Priority Task 2

Managed Grass Areas: A) Large grass areas including parks and B) Strip grass areas including streetscapes, islands and drainage sites

Background:

A) Large grass areas including parks

Definition(s): *There are two 'large grass area' categories:*

- 1) *Mountain Park parks - Touchstone, Tanglewood and Nansen Summit parks.*
- 2) *Grass areas greater than 15 feet wide (GAG>15ft). These areas tend not to be used for recreation by the public.*

Policy Planning Goal Statement(s): Mountain Park parks are a great asset to residents and should be maintained as appropriate. If changes to landscape plantings are necessary, the overall guidelines set forth by the MPHOA Common Property Master Plan should be followed.

GAG>15ft. wide should be assessed for use, prioritized, and converted (partially or fully depending on individual assessment) to landscape plantings to reduce hand mowing, reduce water consumption, improve the aesthetics of the landscape, and restore mapped Lake Oswego 'sensitive lands' as feasible. This will allow for better use of resources, provide for a more connected appearance to paths and walkways and allow Mountain Park residents to take advantage of the many resources available. Naturalized and ornamental plant species appropriate to the site should be used and any tree removal or plantings should be in accordance with all City of Lake Oswego codes and ordinances.

Background:

B) Strip grass areas including streetscapes and drainage sites

Definition(s): *There are two 'strip grass area' categories:*

- 1) *Grass areas less than 15 feet wide (GAG<15ft.), typically found along a major roadway.*
- 2) *Grass areas less than 15 feet wide (GAG<15ft.). Sometimes within a natural drainage, typically found at the end of a cul-de-sac, on short streets, as islands and as the interface to large grass areas greater than 15 feet wide (GAG>15ft.).*

Management Plan

Priority Task 2

Policy Planning Goal Statement(s): Mountain Park road rights of ways, parking areas, islands, drainage ways and other strip grass areas less than 15 feet wide (GAG<15ft.) are a highly visible asset to residents and seen by many people passing through Mountain Park and should be maintained as appropriate. If changes to landscape plantings are necessary, the overall guidelines set forth by the MPHOA Common Property Master Plan should be followed.

GAG<15ft. wide should be assessed for use, prioritized, and converted (partially or fully depending on individual assessment) to landscape plantings to reduce hand mowing, reduce water consumption and improve the aesthetics of the landscape. Demonstration sites for collection and filtering of rainwater in areas of natural drainage should be identified and managed accordingly.

The Mountain Park Landscape Division currently mows more than 87,000 square feet of turf on a weekly basis requiring an enormous use of resources and time.

By modifying the amount of managed turf area, it will allow for better use of resources, reduce rain water runoff to Oswego Lake, provide for an aesthetic appearance along major roadways and allow Mountain Park residents to take advantage of the many resources available. Personnel can be re-tasked with other duties that are more in-line with the goals of the MPHOA. Naturalized and ornamental plant species appropriate to the site should be used and any tree removal or plantings should be in accordance with all City of Lake Oswego codes and ordinances.

Activities for assessment and implementation

Large grass areas (GAG>15ft.)

- Identify large grass areas in Mountain Park greater than 15 feet wide (GAG>15ft.), photograph and make observations describing how each area is currently utilized.
- Utilize a decision making matrix tool when prioritizing GAG>15ft.
- Assess large grass areas and prioritize using the decision making matrix tool.
- Identify outside resources for 'sensitive lands' conversion to off-set Mountain Park's costs.
- Set priorities for conversion (fully or partially) to landscape plantings.
- Prepare adequate landscape plans to address each planting area including irrigation as necessary.
- Acquire all permits required for completion of the landscape plans.
- Install each planting with adequate low input irrigation necessary for establishment and long-term maintenance (if required).
- Utilize a mixture of naturalized and ornamental plantings of woody trees and shrubs, grasses and sedges, groundcovers and perennial plants suitable for each site. Only use annuals in irrigated areas.
- If mulch is required, utilize bark chips stockpiled by Mountain Park landscape applied in a uniform consistency appropriate for the site.
- Maintain these areas utilizing an integrated management approach with a goal of low input and sustainable outcomes.

Management Plan

Priority Task 2

Strip grass areas (GAG<15ft.)

- Identify strip grass areas in Mountain Park less than 15 feet wide (GAG<15ft.), photograph and make observations describing how each area is currently utilized.
- Utilize a decision making matrix tool when prioritizing GAG<15ft.
- Assess strip grass areas and prioritize using the decision making matrix tool.
- Identify outside resources for 'natural drainage' conversion to off-set Mountain Park's costs.
- Set priorities for conversion (fully or partially) to landscape plantings.
- Create demonstration areas for collection of rain water in areas of natural drainage.
- Prepare adequate landscape plans to address each planting area including irrigation as necessary.
- Acquire all permits required for completion of the landscape plans.
- Install each planting with adequate low input irrigation necessary for establishment and long-term maintenance (if required).
- Utilize a mixture of naturalized and ornamental plantings of woody trees and shrubs, grasses and sedges, groundcovers and perennial plants suitable for each site. No annuals.
- If mulch is required, utilize bark chips stockpiled by Mountain Park landscape applied in a uniform consistency appropriate for the site.
- Maintain these areas utilizing an integrated management approach with a goal of low input and sustainable outcomes.

Management Plan

Priority Task 3

Monuments and Trail Signage

Background:

Monuments and signage are critical to the identification and “branding” of Mountain Park. Currently there are 20 or more large monuments identifying various features of the area. A number of monuments on the perimeter of the area serve as a statement of entrance to the neighborhood, while other internal monuments identify specific neighborhoods and properties. There is no coherent plan for this group of significant physical features.

A second significant physical feature of the Mountain Park Common Property is the trail system. In 2010 a professional study of the trail system was prepared with a comprehensive plan for restoring and improving this asset. The Trails and Pathways Assessment by Alta Planning and Design has been incorporated in the MPHOA Common Property Master Plan and is supplemented by recommendations for modifying the Alta plan, primarily through the addition of a strategy for adding signage to the trail system.

Planning Goal Statement(s):

Monuments: Appropriate use of monuments is a Master Plan element that must address several fundamental questions: 1) is the monument serving a purpose of direction, identification or “branding” that provides valuable information to both residents and the public, 2) is the current monument providing information that is consistent with the values and priorities of Mountain Park, 3) could the current monument be re-purposed to better serve the residents of Mountain Park? It is especially important that perimeter monuments provide residents and visitors an experience to identify with our unique “sense of place” when entering and moving through Mountain Park. Future use of monumentation should achieve a consistent and comprehensive “brand” where all are aware of entry into Mountain Park at key locations, as well as maintaining this awareness while traveling within our neighborhood. Integration of existing monumentation into the Mountain Park “brand” should be fully considered with the goal being to utilize existing physical assets where feasible.

Trail Signage Goal: Trail signage should provide a sense of location and direction for all users of the extensive trail system within Mountain Park common property. The trails and signage should be consistent with the message of Mountain Park as Nature's Neighborhood. There are many different uses of Mountain Park trails including, and not limited to: active physical exercise, more passive enjoyment of wildlife and botanical features, and general pedestrian travel throughout Mountain Park. Trail signage design and placement should consider and balance the following attributes: 1) the needs of all types of trail users, 2) a design that is of quality construction with low maintenance requirements 3) be low-impact both visually and to the environment, and 4) contain information of value to users.

Management Plan

Priority Task 3

Activities for assessment and implementation

- Define and identify Entrance Monuments versus Interior Monuments.
- Assess for use and function, design aesthetics, repair and cleaning needs, signage design, material type, coordinated landscape plantings and priority of use.
- Identify if any monuments need to be added, abandoned or remove.
- Prepare signage plans to address monument use/function and aesthetics.
- Prepare landscape plans to address monument use/function and aesthetics
- Repair/clean, purchase and install signage and landscape planting for monuments.
- Define trail signage use/function, design aesthetics, signage design/material type, location and priority.
- Design trail signage.
- Purchase and install trail signage.

Management Plan

Priority Task 4

Trails and Pathways

Background:

Established in 1968, the Mountain Park Homeowners Association sits on inactive Mt. Sylvania in Lake Oswego. With a population of over 8,500 it is the sixth largest home owners association in America. The trail and pathway system covers over 8 miles meandering through the community offering the residents a non-motorized access through Mountain Park. The Mountain Park Homeowners Association commissioned a study of the existing trails and pathways on the common property by Alta Planning and Design. The Alta report – Mountain Park Home Owners Association, Trails and Pathways Assessment – has been used as a basis for an implementation program that is currently underway. The budgeting of the trails and pathways recommendations has been managed through the MPHOA Capital Reserves program and recommendations have been implemented primarily by staff with some work contracted to outside sources.

Policy Planning Goal Statement(s): The Common Property Committee has reviewed the Planning Goal Statement and the Activities summary as taken from the Alta report and endorses this approach to dealing with trails and pathways in the common property. The entire Alta report is attached as Appendix B.

Activities for assessment and implementation

The recommendations contained in the Alta report include the following...

Phase 1

- Assess the current condition including width and trail condition.
- Recommend improvements to the current trail system for a safer, better overall system.
- Recommend better connectivity to key destinations in and adjacent to the Mountain Park community.
- Develop management and maintenance strategies as a guide to keep the system open and in good condition.
- Develop scaled maps covering the whole Mountain Park area for use in future assessments.
- Record trail lengths and locations using an industry standard GPS device.
- Create a photographic record of the current conditions.

Phase 2

- Develop an opportunities and constraints compared to existing conditions map.
- Develop a desired trail width assessment map.
- Recommend improvements to specific areas.

Phase 3

- Recommend improvements to connectivity.
- Create a tiered approach for recommended improvements.

Management Plan

Priority Task 5

Tree Strategy

Background:

Definition(s): *There are three 'tree' categories:*

- 1) There are native trees that existed in the Mt. Sylvania area prior to development of Mountain Park. These include Douglas fir, bigleaf maple, red alder, black cottonwood and others.*
- 2) There are naturalized trees that have been planted in Mountain Park that are native to parts of western Oregon, but were not native to the Mt. Sylvania area prior to development. These include vine maple, cascara, western red cedar, giant sequoia and others.*
- 3) There are ornamental trees that have been planted in Mountain Park that are cultivated, nursery-grown varieties selected for their individual attributes and designed for use in site-appropriate locations. These include red maples, sugar maples, amur maples, deodar cedars, assorted pines and others.*

Policy Planning Goal Statement(s): Trees in native or naturalized settings should be maintained to a low standard of care as would be appropriate for trees in this setting. They should be allowed to go through their normal life cycle with long-lived species cared for to a higher degree than those short-lived species, which should be allowed to go through their shorter life cycle, self-seed and repopulate with minimal interference. Any trees removed or naturally felled in a naturalized or native setting should be allowed to remain in place as habitat for use by indigenous fauna. Any tree in a native or naturalized setting that presents a hazard to life or property should be removed to mitigate the hazard potential. Any tree plantings should be in accordance with all City of Lake Oswego codes and ordinances.

Trees in more manicured, non-native or non-naturalized settings should be maintained to a higher standard of care as would be appropriate for trees in this setting. Any trees removed in a non-native or non-naturalized setting should be replaced with a species providing similar canopy cover and attributes. Trees that develop larger canopies are preferred as long as there is adequate space available for them to mature to their normal height without obstruction. Any tree in a non-native or non-naturalized setting that presents a hazard to life or property should be removed to mitigate the hazard potential. Any tree plantings should be in accordance with all City of Lake Oswego codes and ordinances.

Priority Task 5

Activities for assessment and implementation

- Conduct a tree survey of all trees on Mountain Park common property, including all parks, rights of ways, medians, etc. utilizing an industry standard GPS system.
- Identify any trees specifically located in 'sensitive lands' areas.
- Tree selection for planting should be determined based on what is suitable for the site.
- No invasive tree species should be planted (refer to invasive tree species list from the City of Lake Oswego and attached as Appendix C).
- A maintenance plan should be prepared to address the short-term and long-term care and maintenance needs of the trees in each type of site as determined by the Mountain Park Landscape Division.

Management Plan

Priority Task 6

Habitat Enhancement for Wildlife and Plants within Forested and Riparian Common Areas

Background:

Several of the Priority Tasks described in this MPHOA Common Property Master Plan deal with specific elements of the ecological setting and habitat in the common property. An integrated task to address habitat enhancement for plants and wildlife within the common property should address how the forested and riparian areas would be managed and maintained. The goal of this effort should be to assure a healthy and sustainable environment for plants and wildlife that maximizes the diversity, distribution and population balance among targeted natural wildlife, plants and other flora and fauna.

Developing a full plan for habitat enhancement for wildlife and plants is proposed to be the responsibility of the continuing Common Property Committee (see Priority Task 1) on a timetable that has not yet been defined. The following issues are proposed for consideration within this priority task.

- 1. Develop specific plans for the enhancement of habitat including mapping of appropriate locations and priorities for these efforts.*
- 2. Identify overlaps with the spaces that are currently within the Lake Oswego sensitive lands program. Coordinate our plans with the goals and requirements of the sensitive lands codes.*

Policy Planning Goal Statement(s): There are likely to be opportunities for partnering with other public and private groups and organizations that share an interest in habitat enhancement for plants and wildlife in this area. The existing Committee has identified a number of these organizations with which partnering relationships may be attractive. There also are likely to be opportunities for acquiring outside funding to support the enhancement projects on common property. The proposed standing Common Property Committee and staff should pursue these relationships and opportunities actively.

Activities for assessment and implementation

- Identify all sensitive lands areas within Mountain Park common property.
- Identify natural areas that may be developed as demonstration sites showcasing riparian habitat ecology.
- Utilize a decision matrix to determine priority locations for habitat enhancement.
- Utilize a mixture of native grasses, groundcovers, shrubs, trees and wildflower mix appropriate for the site and adaptable when restoring or improving natural habitat within forested and riparian common areas.
- Others to be determined.

Management Plan

Priority Task 7

Playground Management

Background:

There are several playgrounds located within the common property, some with permanent equipment and structures. The current approach to these playgrounds has been limited to assuring that the facilities are maintained in a clean and safe condition. There has been no recent effort to update the plan for playgrounds and it is appropriate that consideration of these assets be part of the MPHOA Common Property Master Plan.

Policy Planning Goal Statement(s): Developing a complete plan for enhancing playgrounds within common property is to be the responsibility of the proposed standing Common Property Committee (see Priority Task 1) on a timetable that has not yet been defined. The following issues are proposed for consideration within this priority task.

1. Repair playground equipment to assure that these facilities are clean and safe. Maintain existing equipment and structures.
2. Develop specific plans for the future type and use of playgrounds on common property. Engage community residents and users to determine the needs and preferences for equipment, facilities, landscaping and other issues. Assure that these plans are consistent with the values outlined in the introduction to this Master Plan and with all of the other priority tasks

Activities for assessment and implementation

- Identify all playground areas within Mountain Park common property.
- Identify where managed grass areas and playgrounds overlap.
- Utilize a decision matrix to determine priority locations for playground maintenance or improvement.
- Utilize appropriate playground accessories that are safe and provide a lasting resource for Mountain Park residents.
- Others to be determined.

Management Plan

Priority Task 8

Viewpoint Management

Background:

The views and enjoyment of vistas that are possible from most places in Mountain Park constitute a special attribute of the community. Many of these special places are located within the common property or are viewed with respect to the common property. It is appropriate that consideration of viewpoints be part of the MPHOA Common Property Master Plan.

Developing a full plan for enhancing viewpoints is proposed to be the responsibility of the proposed standing Common Property Committee (see Priority Task 1) on a timetable that has not yet been defined. The following issues are proposed for consideration within this priority task.

- 3. Identify the location of viewpoints that are located on common property and also viewpoints that are impacted by the management of common property (specifically the management of trees for views).*
- 4. Define the relationship between real property values and the viewpoints within Mountain Park.*
- 5. Develop specific plans for the enhancement, use and management of viewpoint areas on common property. Assure that these plans are consistent with the values outlined in the introduction to this Master Plan and with all of the other priority tasks.*

Policy Planning Goal Statement(s): There are likely to be opportunities for partnering with other home owners associations within Mountain Park that share an interest in viewpoint enhancement and maintenance. The proposed standing Common Property Committee and staff should pursue these relationships and opportunities actively.

Activities for assessment and implementation

- Identify all viewpoint areas within Mountain Park common property and also viewpoints that are impacted by the management of common property.
- Utilize a decision matrix to determine priority locations for viewpoint maintenance or improvement.
- Implement a strategy that maintains viewpoints in Mountain Park for future generations.
- Others to be determined.

Exhibits

Exhibit 1

Invasive Species Management on Common Property and Private Property

Decision Matrix

and

**Refer to PHS report dated February 2012
(Attached as Appendix A)**

Mt. Park Common and Private Property - Invasives on Common Property and Private Property Decision Matrix

General Description		RATING (1 = Low; 2 = Avg.; 3 = High)					Actions								
#	Location	Type	Use	Invasives Present	Invasives Spreading	Visibility	Avg. Rating/ Priority for Implementation	Remove Invasives	Contract=C or Staff=S	Plant Shrubs	Plant Trees	Plant Perennials and Grasses	Prune Existing Plants	Apply Bark Chips	Notes
1	 EXAMPLE: Tanglewood Park	Park	Common Property	3	3	3	3	No	S	No	Yes	Yes	No	Yes	
2															
3															
4															

Exhibit 2

Mt. Park Common Property - Managed Grass Areas Decision Matrix

6/6/2012 DR/KS

General Description RATING (1 = Low; 2 = Avg.; 3 = High) Actions

#	Location	Type	Water	Achieving Desired Function	Aesthetic Appeal	Visibility	Avg. Rating/ Priority for Implementation	Remove Grass	Install Irrigation	Plant Shrubs	Plant Trees	Plant Perennials and Grasses	Prune Existing Plants	Apply Bark Chips	Notes
1	 St. Helens Circle	Island	Yes	3	3	3	3	No	Repair	No	No	Yes	No	Yes	
2	 Boones Ferry Monument @ Kerr	Greenstreet	No	2	1	3	2	Yes	No	No	No	No	No	Yes	
3	 PGE Substation to McNary	Greenstreet	No	1	1	3	1.67	Yes	No	Yes	No	No	No	N/A	Must ask PGE
4	 Lower McNary North	Greenstreet	Yes	1	1	3	1.67	Yes	N/A	Yes	No	Yes	No	Yes	Consider for greenstreets wetland demo. area

Mt. Park Common Property - Managed Grass Areas Decision Matrix

6/6/2012 DR/KS

General Description		RATING (1 = Low; 2 = Avg.; 3 = High)				Actions										
4	 Lower McNary South Large Area	Yes	1	1	1	1	No	N/A	No	Always wet, but heavily used						
5	 Lower Churchill Downs @ McNary Street scape	Yes	1	2	3	2	Yes	N/A	Yes	No	Yes	No	Yes	No	Yes	
6	 Elizabeth Gress Park Play ground	No	2	1	2	1.67	Yes, as part of park refurbish	No	Must use rubber chips							
7	 Churchill Downs Greenspace Interfaca	No	2	2	1	1.67	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	A good area for a wildflower mix

Mt. Park Common Property - Managed Grass Areas Decision Matrix

6/6/2012 DR/KS

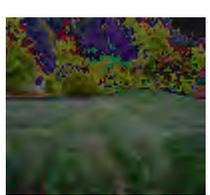
General Description	Street	scape	RATING (1 = Low; 2 = Avg.; 3 = High)				Actions							
---------------------	--------	-------	--------------------------------------	--	--	--	---------	--	--	--	--	--	--	--

 <p>8 Middle Churchill Downs</p>	Street	scape	No	1	1	3	1.67	Yes	No	No	Yes	Yes	No	Yes	
 <p>9 Church</p>	Street	scape	No	1	1	3	1.67	Yes	No	Yes	Yes	Yes	No	Yes	
 <p>10 Upper Walking Woods</p>	Street	scape	No	1	1	3	1.67	Yes	No	No	Yes	Yes	No	Yes	Plant the swale, but only use chips on the strip grass areas
 <p>11 Icarus Loop</p>	Island	d	No	3	2	3	2.67	No	No	No	No	No	No	Yes	

Mt. Park Common Property - Managed Grass Areas Decision Matrix

6/6/2012 DR/KS

General Description	RATING (1 = Low; 2 = Avg.; 3 = High)	Actions
---------------------	--------------------------------------	---------

 12 Lower Walking Woods Monument	Monument Yes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 12.5%; background-color: #d9ead3;">2</td> <td style="width: 12.5%; background-color: #d9ead3;">3</td> <td style="width: 12.5%; background-color: #d9ead3;">2</td> <td style="width: 12.5%; background-color: #d9ead3;">2.34</td> </tr> </table> Yes Repair Yes Yes Yes No Yes No annuals here	2	3	2	2.34
2	3	2	2.34			
 13 Guttman Park	Park Yes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 12.5%; background-color: #d9ead3;">2</td> <td style="width: 12.5%; background-color: #d9ead3;">3</td> <td style="width: 12.5%; background-color: #d9ead3;">3</td> <td style="width: 12.5%; background-color: #d9ead3;">2.67</td> </tr> </table> No N/A No No No No No Expand grass to connect to pathway	2	3	3	2.67
2	3	3	2.67			
 14 Rec. Center Area	Rec. Center Yes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 12.5%; background-color: #d9ead3;">3</td> </tr> </table> Yes, as part of overall new landscaping Repair Yes Yes Yes Yes Yes Large Eastern White Pines will eventually need to be removed	3	3	3	3
3	3	3	3			
 15 Becket and Juarez	Large Area Yes	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 12.5%; background-color: #d9ead3;">2</td> <td style="width: 12.5%; background-color: #d9ead3;">1</td> <td style="width: 12.5%; background-color: #d9ead3;">1</td> <td style="width: 12.5%; background-color: #d9ead3;">1</td> </tr> </table> Yes, partial Repair Yes No Yes No Yes Reduce grass area	2	1	1	1
2	1	1	1			

Mt. Park Common Property - Managed Grass Areas Decision Matrix

6/6/2012 DR/KS

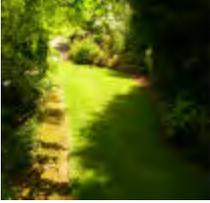
General Description RATING (1 = Low; 2 = Avg.; 3 = High) Actions

General Description	RATING (1 = Low; 2 = Avg.; 3 = High)				Actions									
 <p>16 Becket and Masaryk</p>	Street scape	Yes	1	1	2	1.34	Yes	Repair	Yes	No	Yes	No	Yes	
 <p>17 Upper Summit Park</p>	Park	Yes	3	1	1	1.67	No	Repair	No	No	No	No	No	No
 <p>18 Lower Summit Park</p>	Park	Yes	3	1	1	1.67	Yes	Repair	Yes	Yes	Yes	No	Yes	Consider a landscape design for this park
 <p>19 Strawberry Slope</p>	Monument	No	1	2	2	1.67	Yes	Yes	Yes	No	Yes	No	Yes	

Mt. Park Common Property - Managed Grass Areas Decision Matrix

6/6/2012 DR/KS

General Description	RATING (1 = Low; 2 = Avg.; 3 = High)	Actions											
---------------------	--------------------------------------	---------	--	--	--	--	--	--	--	--	--	--	--

 20 PCC Monument	Monument Yes		2	3	3	2.67	No	Repair	No	No	No	No	No	Yes
 21 Bolivar	Strip Area No		1	1	2	1.34	Yes	No	Yes	Yes	Yes	No	Yes	
 22 Hidalgo Water Tank	Strip Area No		1	1	2	1.34	Yes	No	Yes	Yes	Yes	No	Yes	
 23 Hidalgo Drain	Street Scap No		1	1	1	1	Yes	No	No	No	No	No	Yes	

Mt. Park Common Property - Managed Grass Areas Decision Matrix

6/6/2012 DR/KS

General Description	STREETSCAPE	ISLAND	RATING (1 = Low; 2 = Avg.; 3 = High)				Actions							
---------------------	-------------	--------	--------------------------------------	--	--	--	---------	--	--	--	--	--	--	--

General Description	STREETSCAPE	ISLAND	RATING (1 = Low; 2 = Avg.; 3 = High)				Actions							
 24 Kerr @ Jefferson	S t r e e t s c a p e	No	1	1	3	1.67	Yes	No	Yes	Yes	Yes	No	Yes	Heavily gravel to edge of pavement
 Jefferson Turf Area	S t r e e t s c a p e	No	1	1	2	1.34	Yes	No	Yes	No	Yes	No	Yes	
 Jefferson @ Kingsgate	S t r e e t s c a p e	No	1	1	2	1.34	Yes	No	Yes	No	Yes	No	Yes	
 Hotspur Island	I s l a n d	Yes	2	2	2	2	Yes	Repair	Yes	Yes	Yes	Yes	Yes	Add curbing; Maple will eventually need to be removed

Mt. Park Common Property - Managed Grass Areas Decision Matrix																	
	6/6/2012		DR/KS														
General Description		RATING (1 = Low; 2 = Avg.; 3 = High)					Actions										
	Park	Yes	3	3	3	3	No	N/A	No	No	No	No	No	Yes	Leave as-is		
	Island	Yes	3	1	1	1.67	Yes	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Pines may eventually need to be removed		
	Island	Yes	3	2	1	2	No	N/A	No	No	No	No	No	Yes	Leave as-is		

Mt. Park Common Property - Managed Grass Areas Decision Matrix													
6/6/2012		DR/KS											
General Description		RATING (1 = Low; 2 = Avg.; 3 = High)				Actions							
	Strip Area	No	1	1	3	1.67	Yes	No	Yes	No	Yes	No	Yes
	Street Scap	No	1	1	3	1.67	Yes	No	Yes	No	Yes	No	Yes
	Park	No	2	2	2	2	No	No	No	No	Yes	No	Yes

Plant the swale only with wetland plants. Consider as possible cost-share site

Exhibit 3

Mountain Park Common Property - Monuments Decision Matrix														
		5/23/2012		ROC										
General				RATING (1 = Low; 2 = Avg.; 3 = High)				Actions						
#	Location	Type	Water	Desired Function	Aesthetic Appeal	Street Visibility	Avg. Rating/ Priority	Clean Brick	Brick Repair	Shrubs	Trees	Plantings	Signage	Notes
1	 Touchstone & Carmen (Left)	Entrance	?	3	3	3	3	Yes	None	Remove large Mugo pines in front	Trim low branches behind	Add plants	Mt Park	
2	 Touchstone & Carmen (Right)	Entrance	?	3	3	3	3	Yes	None		Trim dead branches on Vine maple	Add plants	Mt Park Natures Neighborhood Logo	
3	 Kerr & The Grotto	Entrance	?	1	1	1	1	Yes	None		Trim cedar trees and low branches front and rear		Remove Logo	This is a "very poor" entrance monument location. Large electrical substation behind monument does not say MP "Natures Neighborhood"! This monument can be cleaned and trimmed up but a new monument is needed at Kerr and McNary.
3B	 Kerr & The Grotto	Interior	?	1	1	1	1	Yes, also clean wood bench	Repair brick pavers	Remove large plants in front	Trim low branches behind	Add plants	No signage	Verify this belongs to Mt. Park

Mountain Park Common Property - Monuments Decision Matrix

5/23/2012 ROC

General

		RATING (1 = Low; 2 = Avg.; 3 = High)				Actions								
4	 <p>BoonesF x Monroe (left)</p> <p>Monroe and Boones Ferry (Left, south)</p>	E n t r a n c e	?	3	3	3	3	Yes	Repair brick cracking & shifting, fill brick holes (color match), dig down & parge coat block footing			Add plants	Mt Park	Property ownership?
5	 <p>BoonesF x Monroe (right)</p> <p>Monroe and Boones Ferry (Right, North)</p>	E n t r a n c e	?	3	3	3	3	Yes	Brick Repair			Add plants	Mt Park Natures Neighborhood Logo	Property ownership?
6	 <p>Eagle Crest & Stephenson</p>	E n t r a n c e	?	3	3	3	3	Yes	None	Trim shrubs behind		Add plants	Mt Park Natures Neighborhood Logo	
7	 <p>Walking Woods & Stephenson</p>	E n t r a n c e	?	3	3	3	3	Yes	None	Remove Boxwoods	Trim back trees	Add plants	Mt Park Natures Neighborhood Logo	
8	 <p>Walking Woods & Stephenson</p>	E n t r a n c e	?	3	3	3	3	Yes	None	Remove Boxwoods	Trim back trees	Add plants	Mt Park	

Mountain Park Common Property - Monuments Decision Matrix

5/23/2012 ROC

General		RATING (1 = Low; 2 = Avg.; 3 = High)				Actions							
9	 <p>Walking Woods & McNary</p>	I n t e r n a l	?	2	2	2	2	Yes	None	Remove Mugo pines	Add plants	Logo only	Curved Monument
10	 <p>Kerr & Hidalgo</p>	E n t r a n c e	?	3	3	3	3	Yes	None	Remove Rododias	Trim trees	Add plants	Mt Park Natures Neighborhood Logo
11	 <p>Morning View & Jefferson Parkway</p>	E n t r a n c e	?	3	3	3	3	Yes	None		Trim Trees	Add plants	Mt Park Natures Neighborhood Logo
12	 <p>Kingsgate</p>	E n t r a n c e	?	3	3	3	3	Yes			Trim Tress front and behind		Mt Park Natures Neighborhood Logo
13	 <p>Melrose & Botticelli</p>	E n t r a n c e	?	3	3	3	3	Yes	None	Remove shrubs	Trim trees	Add Plants	Mt Park Natures Neighborhood Logo

Mountain Park Common Property - Monuments Decision Matrix

5/23/2012 ROC

General		RATING (1 = Low; 2 = Avg.; 3 = High)				Actions								
14	 Kerr & Jefferson (Left, West)	I n t e r n a l	?	2	2	3	2.3	Yes	Repair brick cracking & shifting, fill brick holes (colormatch), parge back blocks	Trim shrubs or remove	Remove Trees	Add plants	Logo only	Secure Utility opening at back with cover
15	 Kerr & Jefferson (Right, East)	I n t e r n a l	?	3	3	3	3	Yes	Repair brick cracking & shifting, fill brick holes (colormatch), parge back blocks	Trim shrubs or remove	Remove trees	Add plants	Logo, Mt. Park Clubhouse	Property ownership? Incorporate Apartment Signage?
16	 Jefferson Parkway & Mt. Jefferson Terrace (Clubhouse)	I n t e r n a l	?	3	3	3	3	Yes					Logo, Mt. Park Clubhouse	statue and monument are too close to each other. Each deserve a spot light location. We also need flexibility for general communication/marketing (reader board - electronic/letters)
17	 Kerr & Independence	I n t e r n a l	?	2	2	2	2	Yes			Trim trees	Add plants	Logo only	
18	 Kerr & Touchstone (left, West)	I n t e r n a l	?	2	2	2	2	Yes		Remove large shrubs in front	Trim trees	Add plants		

Mountain Park Common Property - Monuments Decision Matrix

5/23/2012 ROC

General		RATING (1 = Low; 2 = Avg.; 3 = High)				Actions							
19	 Kerr & Touchstone (Right, East)	I n t e r n a l	?	2	3	2	2.3	Yes		Trim or remove large shrubs in front	Trim trees	Add plants	Logo only
20	 Kerr & Tanglewood (Left, West)	I n t e r n a l	?	2	2	2	2	Yes	Repair brick cracking	Remove large shrubs in front	Trim trees	Add plants	No signage
21	 Kerr & Tanglewood (Right, East)	I n t e r n a l	?					Yes	Repair/re lay brick top	Remove large shrubs in front	Trim trees	Add plants	Logo only
22	 McNary & Churchill Downs (Right North)	I n t e r n a l	?	2	3	2	2.3	Yes		Remove large shrubs in front	Trim trees	Add plants	Logo only
23	 McNary & Churchill Downs (Left, South)	I n t e r n a l	?	2	2	2	2	Yes	Repair brick cracking & shifting, fill brick holes (colormatch), remove concrete patch install brick	Remove large shrubs in front	Trim trees	Add plants	No signage

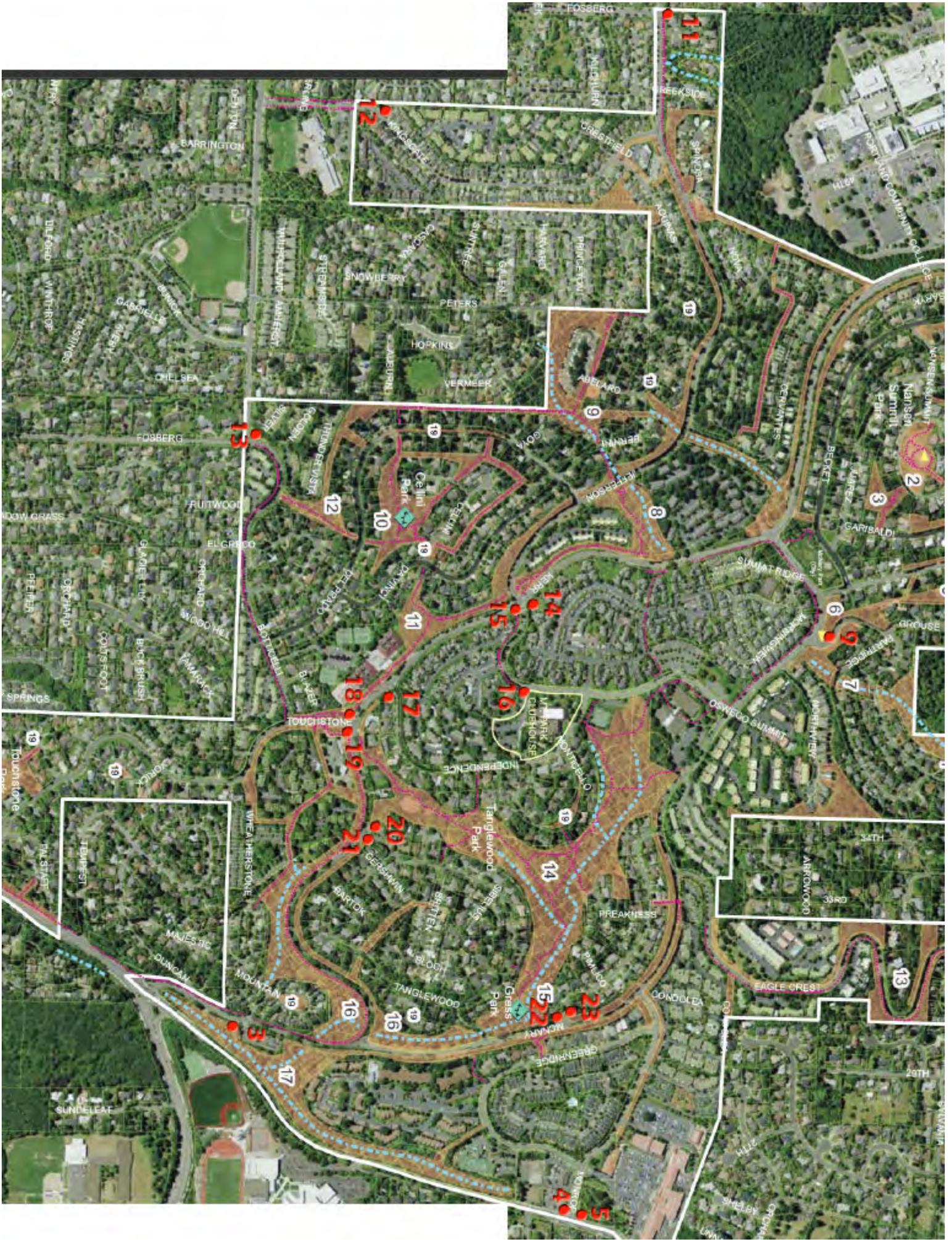


Exhibit 4

Trails and Pathway Management

Refer to Alta report dated April 2009

(Attached as Appendix B)

Exhibit 5

**Tree Strategy – Refer to PHS report dated February 2012
(Attached as Appendix A)**

and

**Refer to Alta report dated April 2009
(Attached as Appendix B)**

Exhibit 6

**Tree Resource Strategy – Refer to PHS report dated February 2012
(Attached as Appendix A)**

Exhibit 7

**Enhancement of Riparian Areas and Other Habitat
Refer to PHS Report Dated February 2012
(Attached as Appendix A)**

Mt. Park Common Property - Playgrounds Management Decision Matrix

General Description		RATING (1 = Low; 2 = Avg.; 3 = High)					Actions				
#	Location	Type	Existing Structures	Varied Uses	Used by Many	Visibility	Avg. Rating/ Priority for Implementation	Install/Replace Structures	Contract=C or Staff=S	Add Plants	Notes
1	EXAMPLE: Edith Gress Park 	Playground	Yes	2	2	3	2.34	Yes, as part of park refurbish	N/A	Yes	Remove invasives and must use rubber chips

Exhibit 8

Mt. Park Common Property - Viewpoints Management Decision Matrix

Mt. Park Common Property - Viewpoints Management Decision Matrix											
General Description			RATING (1 = Low; 2 = Avg.; 3 = High)				Actions				
#	Location	Type	Use	Current View Accessible	Views for Many	Visibility	Avg. Rating/ Priority for Implementation	Remove Invasives	Contract=C or Staff=S	Prune Existing Trees for View Enhancement	Notes
1	 EXAMPLE: Upper Summit	Park	Common Property	3	1	3	2.34	No	C	Yes	
2											
3											

Exhibit 9

MPHOA COMMON PROPERTY MASTER PLAN COMMITTEE VALIDATION OF REQUESTED POLICY

Mountain Park Common Property Master Plan Policy Recommendation Validation					Consistency with Mission, Vision and Values:					
					Consistent (C);		Neutral (N);		Inconsistent (I)	
Board	MP member encroachment on to MP Common Property				Natural	Access	Connectivity	Resources	Aesthetics	
Task										
Recommended Policy Statement :										
	There shall be no encroachment by MP members on to MP Common Property. All rights of ownership shall remain the possession of MP.				C	C	C	C	C	
	Locations where encroachment already exists, as determined by a certified civil engineer, should be identified and the MP member(s) contacted and made aware of the encroachment and the rights of MP to reclaim the area as required for maintenance, improvements, access or any other reason as determined by MP. This information should be updated annually. Refer to specific recommendations from counsel.				C	C	C	C	C	
	Assertion of the rights maintained by MP to all Common Properties shall be instituted at the discretion of MP and remedies for reclamation shall be implemented on a case by case basis.				C	C	C	C	C	
Task(s) :					Timeline for Implementation					
1	Conduct a survey of all MP Common Properties (that haven't already been completed).				By December 31, 2012	C	C	C	C	C
2	Identify and document areas of encroachment.				By December 31, 2012	C	C	C	C	C
3	Rank the existing areas of encroachment by priority.				By June 30, 2013	C	C	C	C	C
4	Contact all MP members who are involved with the encroachment.				By September 30, 2013	C	C	C	C	C
5	Decide the priority for reclamation, issue waiver, ask for signature on detail agreement regarding the encroachment or other remedy as determined by MP.				By December 31, 2013	C	C	C	C	C
6	Determine reclamation requirements, costs-to-cure, etc. and who should be responsible for the expense.				As Required	C	C	C	C	C
7	Determine an implementation schedule for reclamation as needed.				As Required	C	C	C	C	C
8	Implement reclamation activity as determined under number 6 above.				As Required	C	C	C	C	C

Appendices

Appendix A

MOUNTAIN PARK HOMEOWNERS ASSOCIATION

Natural Areas Assessment

Lake Oswego, Oregon



Prepared for

Mountain Park HOA

2 Mt. Jefferson Terrace

Lake Oswego, Oregon 97035

Prepared by

Pacific Habitat Services, Inc.

9450 SW Commerce Circle, Suite 180

Wilsonville, Oregon 97070

PHS Project Number: 4843

February 9, 2012



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1.0 INTRODUCTION

Mountain Park is a planned mixed use (single and multi-family residential/ commercial) development spread over 700 acres of hilly terrain on Mount Sylvania, a 958-foot extinct volcano in Lake Oswego, Oregon. The Mountain Park Home Owners Association (HOA) was established in 1968 as the development was being built, and is the sixth largest HOA in the country with over 8,500 members. Its mandate from the beginning has been to establish and maintain common recreational facilities, open spaces, and trails to enrich the lives of its members.

The HOA is seeking ways to better maintain or even upgrade the Mountain Park common areas while optimizing limited maintenance resources. Toward that end, the HOA has enlisted Pacific Habitat Services (PHS) to inventory existing natural resources within the HOA service area, provide recommendations for continuing or new maintenance priorities, suggest ways to minimize costs while maximizing the value to affected resources, and help find new ways to inform and enrich members' outdoor experiences. This work will build on the Trails and Pathways Assessment recently conducted by Alta Planning and Design; the HOA study area boundaries are depicted in Figure 1 (Appendix A).

2.0 PROJECT APPROACH

In order to provide the HOA with sufficient information on which to base future landscape management goals, PHS first prioritized our field assessments on those natural areas that can be readily accessed by members. Our intent was not so much to conduct an extensive inventory of all natural areas, which would involve much more extensive (and costly) field visits, but to access areas of most concern to HOA members. The existing trail system was utilized to enter these areas, with very limited off-trail travel to better assess the interiors of some forested sections. Since the HOA service area also includes numerous greenspaces and easements that are either hemmed in by private lots and lack public access, or are restricted to narrow roadside corridors, those areas have generally been mapped by using aerial photos and limited drive-by assessments.

For the first phase of this study, our report documents those areas of the HOA service area landscape that have been assessed for wildlife habitat suitability, native vs. invasive vegetation, and restoration potential. In addition, existing conditions and vegetation communities maps have been generated from the field data. Finally, general recommendations for either continuing or expanding on current maintenance activities, or implementing new restoration measures in some areas, are included with this report. During Phase 2, more detailed and site-specific plans will be generated to address various management priorities.

3.0 EXISTING CONDITIONS

The HOA service area encompasses a diverse mosaic of developed residential and commercial infrastructure, landscaped open areas, and relatively natural habitats all situated on the moderately steep sideslopes of Mt. Sylvania. The natural areas are mostly upland to riparian forested habitats, some of which provide relatively high quality wildlife habitat. Nonetheless, due to the highly fragmented nature of this and surrounding developments, the connectedness of these 'islands' of habitat is limited and so is less able to support the diversity of wildlife typically found in larger, more intact natural areas. Wildlife habitat characteristics are described further in the following section.

Due to the relatively steep terrain and elevated landscape position of the study area, most of the drainageways contain either seasonal or intermittent, stormwater-driven flows. Prior to development, many of these ravines and swales had already been formed as a result of stormwater erosion over many decades if not centuries. Fortunately, the Mountain Park designers retained as much of these areas as possible for natural corridors and greenspaces. Other greenspaces have been retained in support of existing easements along roads, sewer and stormwater pipelines, and other infrastructure.

Without gentler gradients, finer-grained soils, or earthworks of some sort to slow down stormwater runoff, these channels often drain off quickly after a storm event. As a result, few of the drainages remain wet enough long enough to develop a truly riparian plant community as influenced by shallow groundwater and surface flows. Nevertheless, the largest streams maintain prolonged seasonal to even year-round flows in the lowest elevations.

3.1 Biological Resources

3.1.1 Vegetation Communities

The Mountain Park HOA study area encompasses several distinct plant communities that have developed in response to past and current land use practices, the available soil and moisture conditions, and slope angle and aspect. The slopes of Mount Sylvania that were slated for the development have been logged multiple times since original settlement of the area, and most recently cleared in preparation for Mountain Park improvements (i.e. streets and necessary infrastructure) followed by construction of community structures and residences. As such, nearly all of the currently forested areas have grown up since the late 1960s, as reflected in the relative lack of larger trees (i.e. few are over 50 years old).

Several broad community types can be readily defined within the study area:

- (1) Upland Mixed Conifer-Broadleaf Forest**
- (2) Upland Conifer Forest**
- (3) Upland Broadleaf Forest**
- (4) Riparian to Wetland Mixed Conifer-Broadleaf Forest**
- (5) Landscaped Common Areas-Playgrounds-Open Lawn**

Each of these communities is further described below, and broadly mapped on Figure 2 in Appendix A. A partial species list is included in Appendix B.

(1) Upland Mixed Conifer-Broadleaf Forest

This upland forest community is the most prevalent cover type within the HOA, since it describes many of the smaller common greenspaces bordering streets and separating rows of houses. In addition, this community type dominates the larger natural areas, which typically include drainageways but are not truly riparian forest communities, since most streams are relatively small and primarily seasonal in nature.

This upland community is typically dominated by Douglas fir and bigleaf maple, with occasional western red cedar, red alder, Scouler's willow, and sweet cherry also present. Most of the overstory trees are young to mature, with diameters ranging from less than 8 inches up to a maximum of 18 to 24 inches diameter breast height (dbh). Very occasionally a tree of greater size is encountered, generally due either to its location within a deep ravine away from projected development, or in an area planned for open space (i.e. park or natural area). Canopy cover typically ranges from 70 to 100%, and due to differing tree ages the canopy height is variable. This community blends nearly seamlessly with the riparian mixed forest found along the larger drainageways.

Understory species include shrubs such as vine maple, Oregon grape, salal, English ivy, English holly, Himalayan blackberry, California dewberry, and snowberry. Groundcover species (where ivy is not dominant) include sword fern, herb Robert, fringe cup, and woodland avens. Although evergreen shrubs provide additional year round cover for a variety of species, several are invasive non-natives that choke out more desirable natives.

(2) Upland Conifer Forest

This community is a relatively uncommon variation on the upland mixed forest in Mountain Park; in these smaller stands, Douglas fir dominates and virtually no broadleaf species are present in the overstory. Nevertheless, a few bigleaf maple and/or red alder may be present in the mid-story as minor stand components. The shrub understory varies in diversity, with some areas dominated by invasives such as English holly, English ivy, and Portuguese laurel.

(3) Upland Broadleaf Forest

This community is also a minor variation on the upland mixed forest; in these stands, virtually no mature Douglas fir or other conifers are present in the overstory, and bigleaf maple is typically the dominant species. Several of these stands have previously been recognized as lacking in conifers by HOA maintenance personnel, who have introduced some plantings into these areas over time. The relative lack of year round cover in these stands continues to provide a good opportunity for community enhancement through the planting of additional native conifers.

(4) Riparian to Wetland Mixed Conifer-Broadleaf Forest

This community is best represented in the lower reaches of the Tanglewood Park/ Gress Park natural area, and includes most of the species listed for the upland mixed forest assemblage described above. However, in areas truly subject to shallower water tables and potential for seasonal flooding near stream channels, species assemblages become distinctive. Tree species that are more likely to be seen within the riparian zone include western red cedar, red alder, Pacific willow, Oregon ash, and black cottonwood. Understory shrubs and groundcover may not be significantly different, although the herbaceous cover in the lowest areas may include reed canarygrass, scouring rush, and bittersweet nightshade.

(5) Landscaped Common Areas-Playgrounds-Open Lawn

Landscaped common areas are often dominated by turfgrasses along with scattered weedy forbs, which are generally kept low by periodic mowing. Turfgrass mixes usually include some combination of ryegrass, fescue, Kentucky bluegrass, and/or bentgrass. Lawns are occasionally punctuated by individual or grouped tree and shrub plantings, usually of horticultural origin. As such, there is a great variety of species in these areas, which generally transition into residential landscaping. This category also includes isolated landscape ‘islands’ within divided or loop roads, which can range from entirely mowed lawn to managed small-scale woodland.

In addition, there are numerous narrow strips of landscaping (primarily along road rights-of-way) that transition rapidly into forested habitats. These strips are typically obscured by tree canopies so are often indistinguishable from the less managed forest habitats on aerial photographs. As such, this category is very broadly applied to many of the narrow roadside greenways, even if they include native tree species in the overstory (Figure 2).

Since many of the Mountain Park greenspaces include expanses of lawn that directly border natural areas but are relatively remote from playgrounds and other high use areas, there is good potential for restoring at least portions of these areas to native communities.

3.1.2 Mapped Sensitive Areas (City of Lake Oswego)

The City of Lake Oswego has conducted an inventory and mapping of natural resource areas within the City boundaries, applying resource overlays to the more sensitive or high value areas. ‘Sensitive Lands’ categories include stream corridors, wetlands, and tree groves; mapped stream corridors and wetlands are within a Resource Protection (RP) district, while mapped tree groves are within the Resource Conservation (RC) district. Each district may either exempt or regulate certain activities that may potentially affect resource values.

All three regulated resource categories are mapped within the Mountain Park HOA study area. The most notable mapped sensitive area is the Tanglewood Park-Gress Park greenspace, which includes stream corridors, tree groves, and wetlands. Streams within this greenspace are tributaries to Springbrook Creek along Boones Ferry Road. An additional stream channel flows northward from McNary Parkway, past Walking Woods Drive, and beyond the HOA boundary at Stephenson Road; this channel is a tributary of Tryon Creek. ‘Stream corridors’ include a specified riparian buffer width based on the stream type, with contiguous forested areas that extend beyond the buffer being mapped as ‘tree groves.’ ‘Wetlands’ are mapped separately at just three locations (at Jefferson/Mountain View, Kerr/McNary, and Oswego Towne Center).

Please note: the Sensitive Areas mapping typically includes buffers drawn around the resource that do not always reflect the underlying development. As a result, it often appears that houses or other development lie well within the drawn resource boundary. This is not typically an issue unless structures or other development are being proposed for expansion into a mapped resource area, which generally triggers an administrative review and permitting process within the City. As mentioned above, different constraints on development come into play depending on whether the area is in an RP or RC zone.

The ‘Existing Conditions’ site map (Figure 1) incorporates those areas mapped as Sensitive Lands by the City (as revised in 2008).

3.1.3 Wildlife Habitat Elements

The Mountain Park HOA study area was visited on several occasions in November 2011; however, the proximity of natural areas to residences and other infrastructure assures that few wildlife species will actually be observed on any particular visit. Instead, most terrestrial species will avoid detection, especially during daylight hours, and any birds that may be moving through a site may or may not provide an adequate glimpse or call to notify us of their presence. As such, relatively few species are noted in Appendix C; nevertheless, the structural and species diversity of natural areas in the HOA study area likely provide suitable habitat for a much wider variety of species that are somewhat adapted to urban developed areas and edge habitats.

As already indicated in the plant community descriptions above, most of the undeveloped land within the HOA is comprised of mixed conifer-deciduous to deciduous forest that is generally under 50 years old due to historic logging activities. As a result, while many trees have grown to mature heights and have formed mostly closed canopy stands, the structural and species diversity within any particular stand may be moderate at best due to the past disturbance and infestation by invasives.

Forest Structural Diversity is an important habitat element found within the HOA. Ideally, at least from a habitat standpoint, a particular forest stand will include a mix of tree ages and sizes, some dead or dying standing snags in various states of decay, fallen logs and other woody debris, and a relatively diverse shrub and herb understory. This variability in cover and vegetative food



sources maximizes the number of niches available to wildlife, including those species that serve as food for those higher on the ‘food chain.’

Nevertheless, the forested areas within the Mountain Park study area lack much of this idealized diversity. There are only a few standing snags, and where the understory is dominated by invasive species the area may be deprived of diverse native food sources. Since large old snags are typically an increasing feature of older mixed stands, no immediate natural remedies are available.

Dead snags in particular can provide high value as potential roost and nest sites for a variety of bird species. Canopy nesters likely to be found in Mountain Park include several species of woodpecker (i.e. hairy and downy woodpeckers, northern flicker), chickadees, and nuthatches, among others. In lieu of large dead snags, a potentially viable alternative is the installation of properly sized and sited nest boxes.

Even more likely to be utilized successfully are ‘manmade’ snags created by intentionally girdling or topping less desirable non-native or potential hazard trees. Such ‘hazard’ trees may jeopardize trail users or nearby homes if noticeably diseased and/or leaning over a structure or trail. If confirmed as an imminent risk by a licensed arborist, a height modification (i.e. shortened to 30 feet or less) may be sufficient to mitigate the risk while at the same time keeping the tree in place as a wildlife snag. Any removed sections of tree can then be utilized in a nearby drainageway as a large woody debris feature.

Large woody debris (LWD) is another valuable habitat element that is typically scarce in natural areas that have been logged multiple times. By allowing wood to rot in place on the ground, the soil itself is enriched, while a variety of species (invertebrates as well as higher organisms like salamanders, birds, and small mammals) benefit. When left in streams, large wood can help moderate erosive forces from stormwater runoff, while also providing organic matter inputs that can benefit fish and other aquatic species further downstream.

Riparian forest elements. Since most drainages present within the HOA are limited to seasonal or intermittent streamflows, forested areas typically lack a distinct riparian ‘zone’ outside of a particular channel or narrow ravine. However, by providing thermal cover and adding organic inputs to flowing water, the forest overstory can be crucial to organisms further downstream. In addition, the seasonal availability of nearby surface water is valuable to a variety of wildlife, since many would not utilize a particular forest stand without a reliable water supply.

3.1.4 Specific Common Areas

The following table lists the specific natural areas and parks that were mapped in this inventory, as well as two miscellaneous categories that do not readily lend themselves to mapping.

Table 1 Parks and Greenspaces within the Mountain Park HOA study area

No.	Park Name or Designated Location	Feature Type
1	Hidalgo→Nansen Summit trail segments	Natural Area
2	Nansen Summit Park	Landscaped Park/Viewpoint
3	Garibaldi→Nansen Summit trail	Natural Area
4	Hidalgo and Garibaldi ‘Greenstrips’	Natural Areas upslope of roads
5	Hidalgo→Grouse sewer easement	Natural Area
6	Hidalgo→Walking Woods (N. of McNary)	Natural Area / Viewpoint/ Monument
7	McNary→Walking Woods→Stephenson riparian corridor	Natural Area / Riparian/ (2) Monuments
8	Jefferson→Kerr Trail	Natural Area / Riparian
9	Bernini→Abelard	Natural Area / Riparian/ Lawn area
10	Cellini Park	Playground/ Natural Area
11	DaVinci→Kerr	Natural Area
12	Del Prado→Botticelli	Natural Area / Riparian
13	Eagle Crest (hillside above road)	Natural Area

No.	Park Name or Designated Location	Feature Type
14	Tanglewood Park	Natural Area / Riparian/ Landscaped
15	Gress Park	Landscaped Park-Playground/ Riparian/ Natural Area
16	Kerr→ The Grotto→McNary→Cirque	Natural Area / Riparian
17	Boones Ferry (Monroe→Country Club)	Natural Area / Riparian
18	Touchstone Park	Playground/ Landscaped
19	Traffic Islands	Landscaped to Partly Natural
Misc	Buffer Zones between Common and Private Parcels	Natural to Partially Landscaped Areas
Misc	Managed Lawn areas along Roadsides	Landscaped

Additionally, field observations regarding several of the specific mapped areas and categories are included below; please note that not every natural area has been described in detail due to their similarity of features).

#1 Hidalgo→Garibaldi→Nansen Summit Greenway

A steep wood chip trail (in two sections) extends from just inside the northwest entry to Mountain Park (opposite upper entrance to PCC campus) up to Nansen Summit Loop Drive. The mostly bigleaf maple canopy also includes a few red alder and more recent plantings of Douglas fir, western red cedar, and western hemlock. The understory is pretty sparse, but includes a fair amount of large woody debris (LWD) from fallen alders etc. as well as a nice standing snag. Some ongoing maintenance occurs in this area, effectively keeping blackberries and other invasives under control.

#2 and #3 Garibaldi to Nansen Summit Park

A steep wood chip trail rises through mixed woods, which includes Douglas fir (up to 24 inches in diameter), bigleaf maple, red alder, Scouler’s willow, and a few European white birch. The shrub understory is comprised of a variety of both natives and invasives, including vine maple, red elderberry, Indian plum, Oregon grape, English holly, English ivy, Clematis, and Himalayan blackberry. Groundcover species include sword fern, fringe-cup, woodland avens, and herb Robert.

Nansen Summit Park occupies the top of Mt. Sylvania above the loop road; this site is managed for the open views it affords (except where blocked by houses). Primarily mowed lawn, it includes a few clumps of landscape plantings. Due to its open aspect and current level of maintenance, this park presents opportunities for enhancement, with native plantings.

#4 Garibaldi ‘Strip’; Hidalgo ‘Strip’ Natural Areas

The Garibaldi forested strip extends above the street to the houses on Nansen Summit Drive, in similar fashion to the forested strip along Hidalgo, which is directly downslope to the northeast. Both strips are mostly deciduous, comprised primarily of maples and alders, with just a few Douglas fir. Other species include vine maple, hazelnut, sword fern, California dewberry, and fringe-cup.

#7 McNary Parkway→ Walking Woods Drive→Stephenson Road Natural Areas

- ***Sensitive Riparian Corridor and Tree Grove***

The upper reaches of this intermittent to seasonal drainageway are primarily overshadowed by deciduous forest dominated by bigleaf maple, along with a few alders and Douglas fir. The shrub understory includes vine maple, snowberry, and English holly, with English ivy dominating the groundcover. The ivy has been controlled to some extent by clipping around the base of trees.

Below Walking Woods Drive the drainageway becomes more pronounced, skirting the eastern margin of the Kerr Natural Area, a mostly deciduous forest stand surrounded on three sides by the Mountain Park development. The small stream and associated riparian to upland forest extends north and east through Icarus Loop, before extending northward across Stephenson Road and outside Mountain Park. This stream is an upper tributary of Tryon Creek.

The forest overstory is dominated by Douglas fir and red alder in the vicinity of Icarus Loop; some western red cedar has been planted as well. The understory includes vine maple, holly, and ivy. A small clearing has been maintained within the Icarus Loop woods; a few native plantings have also been added along a nearby stormwater channel. A landscaped open area borders the riparian forest between Icarus Loop and Stephenson Road.

The City has mapped both Sensitive Riparian Corridor and Tree Grove overlays along this stream corridor.

#8 Jefferson Parkway to Kerr Parkway Greenway

A steep wood chip trail passes through nice, predominantly deciduous, full canopy woodland. Comprised primarily of bigleaf maple, it also includes a few red alder, Douglas fir, and sweet cherry. Understory shrubs include Oregon grape, thimbleberry, hazelnut, vine maple, and snowberry. Variety of invasive shrubs as well, including English ivy, English holly, Himalayan blackberry, and Clematis. Somewhat weedy groundcover includes sword fern, woodland avens, fringe cup, herb Robert, and a bit of false brome. A few old 'nurse' stumps support red huckleberry and salal.

#12 Del Prado→Botticelli Greenway

Freshly paved trail along seasonal drainageway, with mixed conifer-deciduous overstory. Understory in this stand is dominated by English holly, which provides good year-round cover for wildlife, but has also choked out more desirable species. While control of this plant is definitely desirable, it should be approached in phases to avoid degrading the existing habitat functions. Restoration efforts should include the planting of more desirable understory species.

#14 and #15 Tanglewood Park/ Gress Park Natural Areas

• Sensitive Riparian Corridor and Tree Groves

The Tanglewood Park/ Gress Park complex represents the largest contiguous natural area within the Mountain Park HOA service area, including both lightly managed natural area and more intensively managed park like grounds without road crossings. Light management implies trail maintenance and limited weed control, while more intensively managed areas are typically mowed periodically and may require maintenance of play structures or other facilities. Most of this natural area is lightly managed.



The natural area is typically comprised of native mixed conifer-deciduous forest dominated by Douglas fir and bigleaf maple. The shrub understory often includes one or more invasive species as dominants, with English ivy and English holly the most prevalent. Despite the presence of non-natives, this area has good structural and species diversity, providing the highest quality wildlife habitat in the HOA.

In addition, the City has mapped these contiguous parks with both Sensitive Riparian Corridor and Tree Grove overlays. The riparian areas are most accessible near the Preakness or Monticello trailheads, and from within Gress Park.

#19 Traffic ‘Islands’

This designation refers to several ‘islands’ of landscaping between divided road segments. A total of ten islands are mapped in Figure 1. Each island is maintained to at least some degree, with vegetation varying from mature trees with scattered shrub understory, to mostly mowed lawn with a few scattered shrubs. Their narrow configuration and regular disturbance from automobile and other traffic limits these areas as wildlife habitat. Nevertheless, where trees and shrubs provide some structural diversity, certain species (primarily birds well adapted to developed areas) may utilize these areas.

Miscellaneous Landscape Categories

Buffer Zones between Common and Private Parcels

These areas are transitional between the HOA-managed common areas and private parcels maintained by individual landowners. Given the complex pattern of Mountain Park development over time, these buffers currently vary from being fully landscaped in both common and private areas (with virtually no change in vegetation) to having an abrupt edge between the two (i.e. densely vegetated natural area to mowed lawn).

Since private landowners may currently introduce landscape plants with a high potential to invade natural areas, better awareness on everyone's part as to which plants should be avoided will aid future HOA management of these areas.

Note: these buffers have not been separately mapped due to their highly variable width and vegetative character.

Managed Lawn areas along Roadsides

These areas are typically very narrow and restricted to the immediate roadside right-of-way or easement. In some instances these mowed lawn areas also border a pedestrian trail, and may include a narrow landscaped margin comprised of introduced trees and/or shrubs. The roadside features may or may not broaden into larger natural areas; typically this miscellaneous category refers to those narrow isolated road sections that have been mapped but not separately designated by number.

As was also mentioned with regard to plant community mapping, this habitat category can typically not be distinguished from more natural forest habitats, since tree canopies often obscure any open lawn areas below on available aerial photographs.

4.0 RESOURCE MANAGEMENT STRATEGIES

4.1 Conservation/ Restoration Goals

The Mountain Park HOA study area includes numerous greenspaces and parks, a certain number of which include a relatively intact, native mixed forest overstory. Conservation of the existing habitat functions and values in these areas should be prioritized wherever practicable. In addition, for those areas which currently receive regular maintenance but that are seldom utilized by residents, there are opportunities to improve or even restore native habitat. Several of these opportunities are further explored below.

Management strategies outlined in this section emphasize maintaining or even expanding on invasive species control, with certain species being targeted to the extent that HOA resources allow. Often when left untreated, infestations can get totally out of hand and require an increasingly onerous outlay of manpower and materials to be brought under control. Once treated, however, a long-term vision of habitat restoration is warranted to avoid simply introducing additional invasive species or creating more open lawn areas. Restoring treated areas to a native plant community requires preparation for replanting efforts, installation of desirable species that are well suited to site conditions, and continued weed management.

Restoration of native plant communities can also occur in areas long managed as turfgrass lawn, such as in marginal common areas along roads or at the edges of playgrounds.

4.1.1 Invasive Species Control

Relatively few species of special management concern are found within the study area. Nevertheless, those present can and do pose significant problems over time if not controlled while reasonably manageable. In the case of a few very common species (English ivy in

particular), their widespread prevalence really precludes attempts to totally eradicate them, due both to the unreasonable expense and high likelihood of failure. Finding a happy medium where these species are tolerated in some areas but controlled where their dominance does real harm is the most realistic approach, and which is currently being followed to a large degree by the HOA maintenance staff.

Woody Vines and Shrubs

The following non-native shrubs and woody vines are widely scattered to common within HOA natural areas, and their control is encouraged wherever practicable. Most are found in more shaded forest settings, while others may tolerate more open conditions and can become especially problematic following disturbance. While there are additional non-native trees and shrubs found in the study area, those listed below have the most potential to spread and have few redeeming characteristics (excepting the edible fruit of Himalayan blackberry).

Table 2. Common Invasive Woody Plants in Mountain Park study area

Species Name	Common Name
<i>Clematis vitalpa</i>	Traveler’s joy
<i>Crataegus monogyna</i>	English hawthorn
<i>Hedera helix</i>	English ivy
<i>Ilex aquifolium</i>	English holly
<i>Prunus lusitanica</i>	Portuguese laurel
<i>Rubus armeniacus</i> [= <i>R. discolor</i>]	Himalayan blackberry

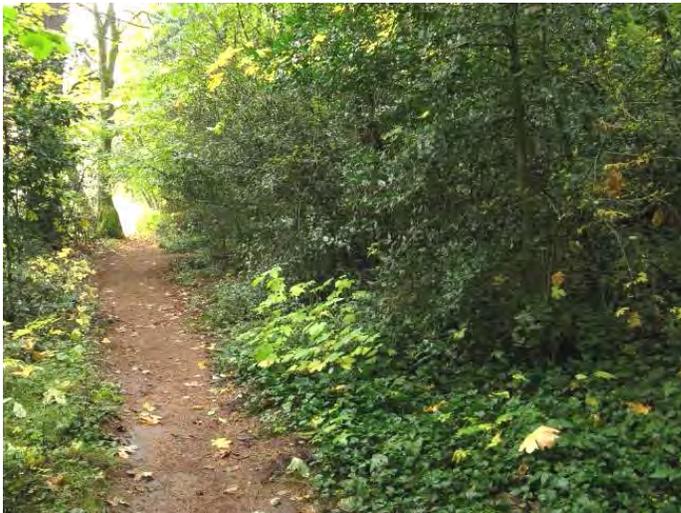
Species-specific recommendations for woody vines and shrubs are included below;

- **English ivy (*Hedera helix*)** groundcover can be physically pulled up and removed from an area; herbicide use is seldom recommended for control since their effectiveness may be limited due to the plant’s thick leaf cuticle. However, if the active ingredient is used with an oil surfactant, better penetration of the cuticle, and thus greater control, is possible (as recently demonstrated by HOA maintenance staff). Climbing vines that have already grown up into the tree canopy are best cut near ground level, with lower portions stripped from the tree trunk to the extent possible. The cut aerial stems will die out over time, eventually falling out of the tree.

Again, HOA maintenance staff has been very proactive in preventing vines from infesting trees. Given the extensive groundcover infestations persisting in many areas, but with few if any infested trees, it is obvious that extensive control efforts have already been exercised over many years. Controlled areas should be periodically revisited to monitor and if necessary, pull up any new growth.



- **Traveler’s joy (*Clematis vitalpa*)** is typically detected when already growing up into woody vegetation; its vines can become dense and ropelike hanging out of tree canopies. Though groundcover can be easily pulled up and removed from the site, aerial vines that have already climbed up into the tree canopy are best cut near ground level, similarly to ivy. The cut aerial stems will die out over time, eventually falling out of the tree. Controlled areas should be periodically revisited to monitor and if necessary, pull up any new growth.
- **Himalayan blackberry (*Rubus armeniacus*=*R. discolor*)** is an easily recognized thorny shrub with clambering growth habit that can be cut and/or pulled, but will generally grow back rapidly unless treated with an appropriate herbicide; periodic revisits are typically necessary. Few areas are currently infested with this species, indicating ongoing and mostly successful control efforts by HOA maintenance staff.
- **English holly (*Ilex aquifolium*), English hawthorn (*Crataegus monogyna*), and Portuguese laurel (*Prunus lusitanica*)** are all potentially large shrubs to small trees that are readily spread into natural areas through seed dissemination (typically by birds).



Their stems can simply be cut, with periodic revisits likely needed to cut any new resprouts from the stumps. However, longer lasting control can be obtained when a freshly cut stump is painted with herbicide immediately after cutting to prevent resprouting. Living trunks can also be treated during the dormant season with a suitable herbicide/oil mixture to provide control with less harm to nearby desirable plants.

Herbaceous Weeds

Additional weedy species may be introduced into the understory over time, especially following disturbances such as ivy clearing. Periodic inspection of newly disturbed areas is necessary to limit their spread. Relatively few herbaceous weeds are currently a problem in the HOA study area. However, several could become bigger problems over time, and should be controlled when budgets permit. Herb Robert is the most prevalent of these, with woodland avens, several introduced bamboos, yellow archangel, and thistles being present at widely scattered locations as well. Herb Robert control is included as an example here:

- **Herb Robert (*Geranium robertianum*)** is scattered to common in both upland and riparian forest communities within the HOA. Its rapid growth, high seed production, shade tolerance, and possible allelopathic effects on other plants make this species highly effective at excluding other groundcover species. Hand pulling is effective if plants are carefully pulled from near the base, since stems are fragile. Plants may also be cut with a string trimmer. Timing is crucial in order to prevent plants from going to seed. Even cut plants with flowers, if left in place, may go to seed. Consequently, cut or pulled material should be bagged and hauled offsite.

4.1.2 Landscaping with Native Plants

Restoring a plant community from one dominated by weedy invasives to mostly natives typically requires persistent and ongoing weed control efforts. However, the value of those efforts is limited without also introducing more desirable species that can fill the void created by controlling the weeds. Otherwise the same or other species of weeds will probably refill that void. Since most of the weed problems noted within the Mountain Park HOA service area occur in partially to deeply shaded understories, the range of suitable natives that can compete under such conditions is somewhat limited. Nevertheless, suitable species are generally available from local wholesale nurseries.

Among the greatest challenges are choosing species that are most suitable to a particular microsite, then installing and nurturing the new plantings to enable their survival through the first few years. A particular microsite may have soil texture or moisture conditions that are unsuitable to most species, yet prove favorable to others. Individual species' preference for well drained or seasonally moist soils, combined with their relative shade tolerance, can help determine their suitability to a particular site. After planting, supplemental watering and continued weed control may be required for plant survival, especially during drought conditions or when competing with new weed growth.

Table 3 below suggests several native trees and shrubs that are well adapted to shaded upland to riparian sites in this area. Since many of Mountain Park's natural areas are dominated by a mix of deciduous trees with relatively few conifers, introducing more shade-tolerant conifers will help diversify these stands as well as provide additional year-round cover for wildlife. Introducing a variety of understory species (including evergreens) is especially important in areas where invasive broadleaf evergreens such as English holly and Portuguese laurel are being removed from the understory.

Table 3. Recommended Tree and Shrub Plantings for Partial to Deep Shade within Natural Areas of Mountain Park HOA study area

Scientific Name	Common Name
Trees	
<i>Abies grandis</i> *	Grand fir
<i>Cornus nuttallii</i>	Pacific dogwood
<i>Tsuga heterophylla</i> *	Western hemlock
<i>Thuja plicata</i> *	Western red cedar
Shrubs/Groundcover	
<i>Acer circinatum</i>	Vine maple
<i>Berberis nervosa</i>	Cascade Oregon grape
<i>Gaultheria shallon</i>	Salal
<i>Oemleria cerasiformis</i>	Indian plum
<i>Polystichum munitum</i>	Sword fern
<i>Ribes sanguineus</i>	Red flowering currant
<i>Rosa gymnocarpa</i>	Baldhip rose
<i>Rubus parviflorus</i>	Thimbleberry
<i>Sambucus racemosa</i>	Red elderberry
<i>Symphoricarpos albus</i>	snowberry

***Note that each of these tree species (as well as several other native trees potentially planted in sunny areas) can grow tall enough to eventually block views, so their use near or below houses should be carefully considered prior to planting.**

4.1.3 Additional Habitat Enhancement Examples

Besides the restoration and/or enhancement of native plant communities through a combination of weed control and new plantings, there are additional measures that may be taken to improve habitat for wildlife as well as increase the recreational and educational value of the HOA natural areas for residents.

As discussed previously, habitat elements such as dead snags and large woody debris may be augmented as such opportunities arise. Hazard trees may be modified or removed for safety purposes, but in such a manner that a standing snag or log placement provides the maximum function for wildlife.

One opportunity to enhance both safety and aesthetics for park users is available along the trail through Gress Park. At the stream crossing there is an old warning sign that provides a fairly negative impression of the riparian habitat, one of risk and danger. An alternative approach, one that would provide more protection as well as be less offensive, could be the placement of a rustic split rail fence, possible augmented by barrier vegetation (e.g. Oregon grape, roses). Such a structure would provide a suitable setback from the streambank, while blending more naturally with the setting. This location could also be appropriate for some form of interpretive signage describing the functions and values of the riparian area.



Another longterm opportunity would be to enhance a small intermittent to seasonal drainageway located in Tanglewood Park. Currently, this area is managed for grass lawn under scattered trees, with limited vegetative cover along the drainageway. Fed by a stormwater culvert and lateral groundwater movement, the drainageway is very shallow and typically the wettest in the nearly level reach nearest the culvert, becoming increasingly incised and ditchlike as the gradient steepens and drops into full canopy forest to the north.

Native wetland shrub and groundcover plantings could be introduced along this drainageway's southern reaches, and structural improvements such as reshaping banks or installing log stepdams (in addition to native plantings) could also enhance the deeply incised sections of stream. Observing the drainageway during storm runoff conditions would be required for determining which structural improvements would be most appropriate for this site.



Further opportunities for specific enhancement or restoration activities will be explored in the next phase of this landscape planning effort.

5.0 SUMMARY

The initial phase of this study documents the current extent of natural areas and parks within Mountain Park HOA boundaries, and introduces a range of management actions that are either already occurring, could be expanded upon as financial resources permit, or may be considered as eventual goals as a part of long range planning for these areas.

While specific common areas have already been suggested as good enhancement or restoration opportunities, there are broad categorical improvements that could also be applied to such common features as entry monuments and their associated landscaping. Since the entry monuments actually provide a highly visible first impression of the Mountain Park area, renewing their look to provide a more consistently Northwestern or rustic landscape character can help save maintenance costs over time as well as increase the overall appeal of the community as a 'Gateway to Nature'. Monuments should also be removed from locations where they are no longer clearly visible to people entering Mountain Park.

Setting realistic goals for both categorical and specific improvements to natural areas will be the focus of discussions based on information gathered for this document. Table 4 below lists some of the potential management actions that may be appropriate for different common areas, and tentatively prioritizes these actions. Certainly, areas may be added, deleted, or their levels of priority adjusted to acknowledge the availability of financial resources, all within the framework of a master landscape plan for this community. The next phase of the work will provide more detailed and site-specific plans to address the various management priorities proposed in the table below.

Table 4. Management Recommendations for Parks and Greenspaces within the Mountain Park HOA study area

No.	Park Name or Designated Location	Proposed Restoration/ Maintenance Actions	Priority*
1	Hidalgo→Nansen Summit trail segments	<ul style="list-style-type: none"> Invasive Species control as needed to achieve native plant goals 	2
2	Nansen Summit Park	<ul style="list-style-type: none"> Restore with native shrub plantings; 	2
3	Garibaldi→Nansen Summit trail	<ul style="list-style-type: none"> Invasive Species control as needed to achieve native plant goals 	2
4	Hidalgo and Garibaldi ‘Greenstrips’	<ul style="list-style-type: none"> Invasive Species control as needed near roads 	2
5	Hidalgo→Grouse sewer easement	<ul style="list-style-type: none"> Native plantings for mowed easement; Invasive Species control as needed to achieve native plant goals 	3 2
6	Hidalgo→Walking Woods (N. of McNary)	<ul style="list-style-type: none"> Native plantings for landscaped area; Invasive Species control as needed to achieve native plant goals 	2 1
7	McNary→Walking Woods→Stephenson riparian corridor	<ul style="list-style-type: none"> Native plantings for mowed areas; Replace flower beds with shrubs; Upgrade monuments; Invasive Species control as needed to achieve native plant goals 	2 3 2 1
8	Jefferson→Kerr Trail	<ul style="list-style-type: none"> Invasive Species control as needed to achieve native plant goals 	2
9	Bernini→Abelard	<ul style="list-style-type: none"> Enhance erosion control measures near bridge (e.g. replace gabions); Invasive Species control as needed to achieve native plant goals 	2 1
10	Cellini Park	<ul style="list-style-type: none"> Invasive Species control as needed to achieve native plant goals 	1
11	DaVinci→Kerr	<ul style="list-style-type: none"> Invasive Species control as needed to achieve native plant goals 	1
12	Del Prado→Botticelli	<ul style="list-style-type: none"> Invasive Species control as needed (for <i>Ilex</i> in particular) to achieve native plant goals; apply control to sections over time to avoid drastic habitat degradation 	1
13	Eagle Crest (hillside above road)	<ul style="list-style-type: none"> Invasive Species control as needed along road 	3
14	Tanglewood Park	<ul style="list-style-type: none"> Restore open areas (near Kerr Reservoir, on Jefferson near church, at Preakness entry) with native plantings; 	2
		<ul style="list-style-type: none"> Enhance drainageway in open area north of Tanglewood Lane entry 	2
		<ul style="list-style-type: none"> Invasive Species control as needed to achieve native plant goals 	1

No.	Park Name or Designated Location	Proposed Restoration/ Maintenance Actions	Priority*
15	Gress Park	• Restore open lawn north of trail/ stream crossing with native plantings;	2
		• Enhance snags, LWD in riparian area;	2
		• Incorporate interpretive signage (i.e. replace warning sign by stream crossing);	2
		• Utilize split rail fence or barrier plantings to augment or replace warning sign by creek	2
		• Restore open transitional areas along private property with native plantings;	3
		• Invasive Species control as needed to achieve native plant goals	1
16	Kerr→The Grotto→ McNary→ Cirque	• Invasive Species control as needed to achieve native plant goals	2
17	Boones Ferry (Monroe→Country Club)	• Invasive Species control as needed to achieve native plant goals	3
18	Touchstone Park	• Potentially restore portions with native trees and shrubs;	3
19	Traffic Islands	• Invasive Species control as needed to achieve native plant goals	1
		• Reclaim with native trees/shrubs	2
Misc	Buffer Zones between Common and Private Parcels	• Invasive Species control as needed to achieve native plant goals	1
		• Reclaim with native trees and shrubs	2
Misc	Managed Lawn areas along Roadsides	• Invasive Species control as needed to achieve native plant goals	1
		• Reclaim with native trees/shrubs	2

**Tentative Priority ratings for management actions:*

- 1 → High
- 2 → Medium
- 3 → Low

Appendix A

Figures





- Natural Areas
- Viewpoint
- Monument
- Existing Mountain Park Trails
- Playground
- Streams
- Lake Oswego Sensitive Lands
- Mountain Park HOA Boundary

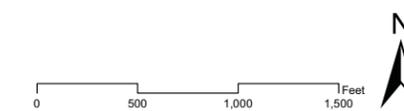
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5	Hidalgo→Grouse sewer easement	Natural Area
6	Hidalgo→Walking Woods (N. of McNary)	Natural Area / Viewpoint/ Monument
7	McNary→Walking Woods→Stephenson riparian corridor	Natural Area / Riparian/ (2) Monuments
8	Jefferson→Kerr Trail	Natural Area / Riparian
9	Bemini→Abelard	Natural Area / Riparian/ Lawn area
10	Cellini Park	Playground/ Natural Area
11	DaVinci→Kerr	Natural Area
12	Del Prado→Botticelli	Natural Area / Riparian
13	Eagle Crest (hillside above road)	Natural Area
14	Tanglewood Park	Natural Area / Riparian/ Landscaped
15	Gress Park	Landscaped Park-Playground/ Riparian/ Natural Area
16	Kerr→The Grotto→McNary→Cirque	Natural Area / Riparian
17	Boones Ferry (Monroe→Country Club)	Natural Area / Riparian
18	Touchstone Park	Playground/ Landscaped
19	Traffic Islands	Landscaped to Partly Natural
Misc	Buffer Zones between Common and Private Parcels	Landscaped to Partly Natural
Misc	Managed Lawn areas along Roadsides	Landscaped

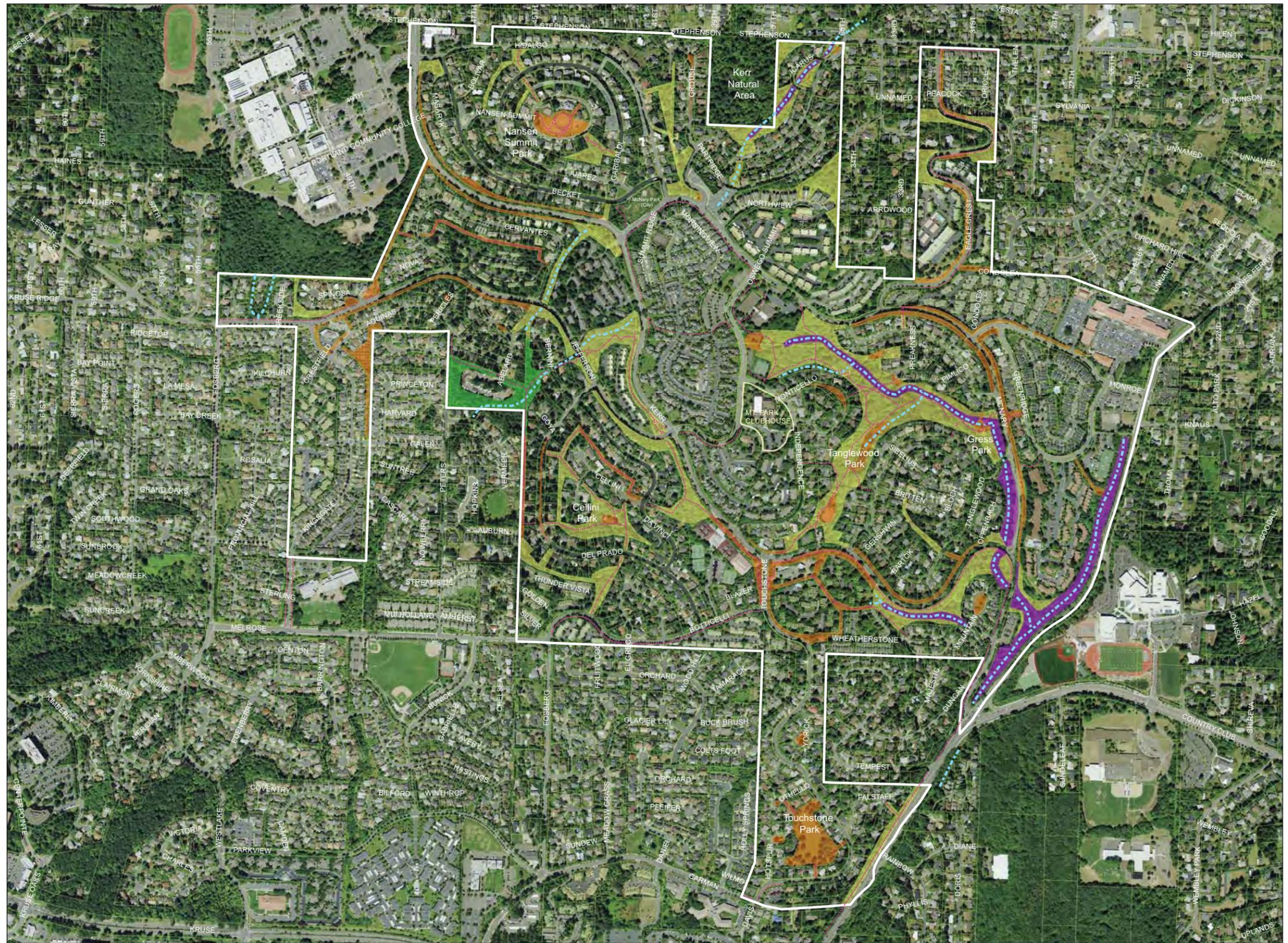
Mountain Park HOA Existing Natural Areas
1/30/12

FIGURE
1



PACIFIC HABITAT SERVICES
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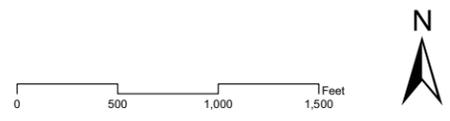
- Existing Mountain Park Trails
- - - - - Streams
- Mountain Park HOA Boundary
- Upland Mixed Conifer-Broadleaf Forest
- Upland Conifer Forest
- Upland Broadleaf Forest
- Riparian to Wetland Mixed Conifer-Broadleaf Forest
- Landscaped Common Areas/Playgrounds/Open Lawn

Mountain Park HOA Existing Plant Communities
1/30/12

FIGURE
2



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Appendix B

Partial Plant List



Partial Plant List
Mountain Park HOA properties, Lake Oswego, Oregon
 (Compiled during November, 2011; excludes most horticultural plantings)

Scientific Name	Common Name	Native/ Introduced? ¹
TREES		
<i>Acer macrophyllum</i>	Bigleaf maple	N
<i>Alnus rubra</i>	Red alder	N
<i>Betula pendula</i>	European white birch	I
<i>Fraxinus latifolia</i>	Oregon ash	N
<i>Pinus sp.</i>	Pine (introduced)	I
<i>Populus trichocarpa</i>	Black cottonwood	N
<i>Prunus avium</i>	Sweet cherry	I
<i>Pseudotsuga menziesii</i>	Douglas fir	N
<i>Salix scouleriana</i>	Scouler's willow	N
<i>Salix lasiandra</i>	Pacific willow	N
<i>Sorbus aucuparia</i>	European mountain-ash	I
<i>Thuja plicata</i>	Western red cedar	N
SHRUBS		
<i>Acer circinatum</i>	Vine maple	N
<i>Amelanchier alnifolia</i>	Saskatoon serviceberry	N
<i>Berberis aquifolium</i>	Tall Oregon grape	N
<i>Berberis nervosa</i>	Cascade Oregon grape	N
<i>Clematis vitalpa</i>	Clematis	I
<i>Cornus sericea</i>	Red osier dogwood	N
<i>Corylus cornuta</i>	California hazel	N
<i>Crataegus monogyna</i>	English hawthorn	I
<i>Gaultheria shallon</i>	Salal	N
<i>Hedera helix</i>	English ivy	I**
<i>Holodiscus discolor</i>	Ocean spray	N
<i>Ilex aquifolium</i>	English holly	I**
<i>Oemleria cerasiformis</i>	Indian plum	N
<i>Prunus lusitanica</i>	Portuguese laurel	I**
<i>Rhododendron spp.</i> (may include both native and hort. vars)	Rhododendron (varieties)	N/I
<i>Rosa gymnocarpa</i>	Baldhip rose	N
<i>Rubus discolor [=R. armeniacus]</i>	Himalayan blackberry	I**
<i>Rubus parviflorus</i>	Thimbleberry	N
<i>Rubus ursinus</i>	California dewberry	N
<i>Salix sp.</i>	willows	N
<i>Sambucus racemosa</i>	Red elderberry	N
<i>Symphoricarpos albus</i>	Snowberry	N
<i>Vaccinium parvifolium</i>	Red huckleberry	N
FORBS		

Scientific Name	Common Name	Native/ Introduced? ¹
<i>Athyrium filix-femina</i>	Lady fern	N
<i>Cirsium arvense</i>	Canada thistle	I**
<i>Cirsium vulgare</i>	Bull thistle	I**
<i>Daucus carota</i>	Queen Annes lace	I
<i>Epilobium watsonii</i>	Watsons willowherb	N
<i>Equisetum arvense</i>	Field horsetail	N
<i>Geranium robertianum</i>	Herb Robert	I**
<i>Geum macrophyllum</i>	Largeleaved avens	N
<i>Geum urbanum</i>	Woodland avens	I**
<i>Lamiastrum galeobdolon</i>	Yellow archangel	I**
<i>Lapsana communis</i>	nipplewort	I
<i>Osmorhiza berteroi</i> [= <i>O. chilensis</i>]	Common sweet cicely	N
<i>Polypodium glycyrrhiza</i>	Licorice fern	N
<i>Polystichum munitum</i>	Sword fern	N
<i>Ranunculus repens</i>	Creeping buttercup	I
<i>Solanum dulcamara</i>	Bittersweet nightshade	I
<i>Tellima grandiflora</i>	Fringecup	N
<i>Vancouveria hexandra</i>	Inside-out flower	N
GRAMINOIDS		
<i>Agrostis stolonifera</i>	Creeping bentgrass	I
<i>Alopecurus pratensis</i>	Meadow foxtail	I
<i>Bambusia, Phyllostachys, etc.</i>	Various bamboo varieties	I**
<i>Brachypodium sylvaticum</i>	False brome	I**
<i>Carex leptopoda</i> [= <i>C. deweyana</i>]	Dewey's sedge	N
<i>Dactylis glomerata</i>	Orchardgrass	I
<i>Elymus glaucus</i>	Blue wildrye	N
<i>Festuca arundinacea</i>	Tall fescue	N
<i>Holcus lanatus</i>	Common velvetgrass	I
<i>Phalaris arundinacea</i>	Reed canarygrass	I**

¹Species Native or Introduced to this area?

** Noxious species; highly invasive, control efforts may be warranted

Appendix C

Partial Wildlife List



Partial Wildlife List
Mountain Park HOA properties, Lake Oswego, Oregon
 (Birds Compiled during November, 2011; mammals assumed to be present)

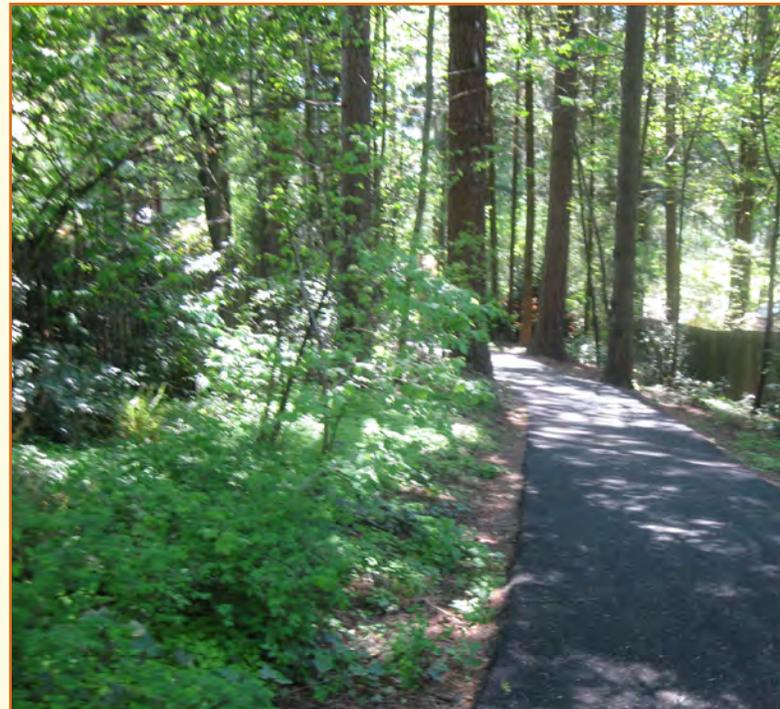
Common Name	Scientific Name
MAMMALS	
Black-tailed deer	<i>Odocoileus hemionus</i>
Coyote	<i>Canis latrans</i>
Brush rabbit	<i>Sylvilagus bachmani</i>
Eastern fox squirrel	<i>Sciurus niger</i>
Virginia opossum	<i>Didelphus virginiana</i>
Raccoon	<i>Procyon lotor</i>
BIRDS	
Western screech owl	<i>Otus kennicottii</i>
Scrub jay	<i>Aphelocoma coerulescens</i>
Steller's jay	<i>Cyanocitta stelleri</i>
American Robin	<i>Turdus migratorius</i>
Black capped chickadee	<i>Parus atricapillus</i>
Song sparrow	<i>Melospiza melodia</i>
American crow	<i>Corvus brachyrhynchos</i>
Spotted towhee	<i>Pipilo erythrophthalmus</i>
Red-breasted nuthatch	<i>Sitta canadensis</i>
Ruby crowned kinglet	<i>Regulus calendula</i>
European starling	<i>Sturnus vulgaris</i>
Anna's hummingbird	<i>Calypte anna</i>
Bushtit	<i>Psaltriparus minimus</i>
Bewick's wren	<i>Thryomanes bewickii</i>
Hairy woodpecker	<i>Picoides villosus</i>
Northern flicker	<i>Colaptes auratus</i>

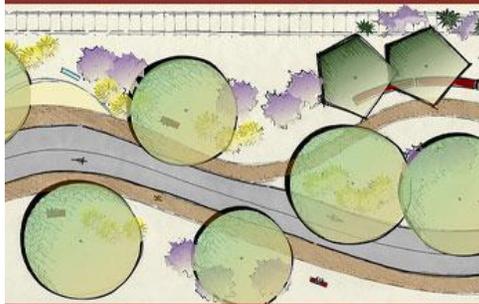
Appendix B

MOUNTAIN PARK HOME OWNERS ASSOCIATION

Trails and Pathways Assessment

December 2009





This report was prepared for the Mountain Park Home Owners Association by Alta Planning + Design (www.altaplanning.com).

Mountain Park Home Owners Association

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Mountain Park Trails and Pathways Assessment Acknowledgements

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Background

The Mountain Park Home Owners Association (HOA) was established in 1968 and sits on 700 acres of hilly, ancient volcanic terrain in Lake Oswego, OR. With a population of over 8,500 it is the sixth largest HOA in America. The Mountain Park HOA trail system links the community with over 8 miles of non-motorized trails. It is a valuable community resource that provides opportunities for residents to connect with nature, maintain their health and fitness and move through the community without needing to drive.

Purpose

The Mountain Park trail system is 40 years old and has never had a formal plan. The goal is to keep the trails open and in good condition for everyone to enjoy for many years to come.



The purpose of the Mountain Park HOA Trails and Pathways Assessment is to:

- Assess the current condition including width and trail condition.
- Recommend improvements to the current trail conditions for a safer, better overall system.
- Recommend better connectivity to key destinations in and adjacent to the Mountain Park community.
- Management and Maintenance strategies as a guide to keep the system open and in good condition.

Approach

Alta Planning + Design was retained in April 2009 for the Mountain Park HOA trails assessment. The first phase of the assessment included the following:

- Developing scaled maps covering the whole Mountain Park area for use in the field to record notes and observations.
- Recording trail lengths and locations using a hand held GPS device.
- Taking pictures of the trails.
- Discussing and observing key areas of the system with Mountain Park's Landscape Manager.

The second phase of the assessment included retrieving the inventory and data collection taken in the field to develop:

- An Opportunities and Constraints/Existing Conditions map
- Trail Width Assessment Map
- Recommended Improvements Map

The third phase includes a written narrative illustrated with photos and maps which includes:

- Existing Conditions
- Recommended Improvements and Connectivity based on a three tier approach
- Management and Maintenance strategies

Existing Conditions

The existing trails in Mountain Park include off-street asphalt paths, concrete sidewalks, and wood chip trails. The evaluation and specific location of each trail type and condition is located on the Width Assessment and Opportunities and Constraints maps in Appendix A.

Trail Condition

The conditions of the existing trails were rated as good, fair, or poor. Good trails have few buckles or root damage, and include those that were repaved in the last few years. Some of the best examples are east of Kerr Parkway. These wide, well built trails are an excellent example for what the rest of the trails in the community can be.



The 'good' condition trails have a smooth riding surface with virtually no damage.

The majority of the trails in Mountain Park are in fair condition. Dispersed damage from tree roots and erosion can be found throughout but it is not significant enough to pose a safety hazard or seriously degrade the enjoyment of the trails by the community.



Fair condition trails show some damage, but nothing that poses an immediate safety hazard to users. However, these damaged areas should be noted and scheduled for repair during regular maintenance.

Poor condition trails are in need of re-paving or complete reconstruction due to significant root damage and/or erosion problems. They also may need to be re-routed or re-graded due to standing water and drainage problems. Few trails fell into the poor category, but the ones that did should be given priority for restoration for the safety of users.



Poor condition trails have significant standing water problems and/or erosion problems. These need to be given priority for repair and replacement.

Trail Width

The intended use and purpose of a trail are key in determining the appropriate width. Generally wider is better, but in some cases a narrower trail may be appropriate for a given use. Higher use trails that are intended to accommodate multiple uses like bicycles, runners, and walkers should be at least 10 feet wide to allow the users to easily maneuver around one another. Neighborhood trails that have less use and simply connect a group of homes to the larger network can be narrower and still serve the need of the users. The width of the trails in the Mountain Park community vary from 10 feet to 5 feet or fewer. The majority of the trails are approximately 6 to 9 feet wide. The existing trail widths are shown on the Width Assessment Map in Appendix A.



Trails 5 feet wide or narrower are not suitable for multiple uses



6 to 9 foot wide trails compose most of the system in Mountain Park.



The newly paved 10 foot wide trails are ideal for high use corridors and can accommodate multiple users.

Trail Surfaces

There are three trail surfaces in Mountain Park, they include, paved asphalt, paved concrete and wood chips. Most of the trails are paved with asphalt and these include the highest use trails. The few concrete trails are really narrow sidewalks that provide connectivity along roadways between the asphalt trails. There are also some wood chip trails dispersed throughout the system.



On gradual slopes, chipped paths may be ideal to use in certain areas.

Improvements and Connectivity

The recommended improvements have been categorized into three priority levels. Tier 1 recommendations are the most important, Tier 2 are a lower priority and Tier 3 improvements should be considered only after Tier 1 and 2 are complete.

*Mountain Park HOA Recommended Trail Improvements	
Tier 1	
1	Lake Oswego High School Connection
2	Kerr Parkway and McNary Intersection Improvements
3	New McNary Parkway Trails
4	Gress Park Trail Connection
5	Remove Trails between Britten Court, Bartok Place and Bloch Terrace
6	New McNary Parkway Sidewalks
7	Bernini Court to Jefferson Parkway Improvements
8	Bridge Replacement between Bernini Court and Maintenance Yard
9	Improve Stairs at Del Prado Ave.
10	Improve Trail South of Del Prado Ave.
11	Oak Creek Elementary School Connection
12	Improve trail from Aquinas Street to Oak Creek Elementary
13	Mid Block Crossing on McNary Parkway
Tier 2	
14	Improve trail Along Monroe Parkway
15	Stephenson Grade School street crossing
16	Pave existing trail connection between Tanglewood and Gress Parks
17	Improve trail at the south side of the tunnel at Jefferson and Kerr parkway
18	Improve existing stairs along trails up to Nansen Summit
19	Portland Community College connection
20	Install mid block crossing at Botticelli Ave
21	Complete the Touchstone Park loop trail
Tier 3	
22	Re-route or eliminate switchback on trails up to Nansen Summit
23	Rock Armoring North of Tanglewood Drive
24	Crossing Improvements across McNary Parkway
25	Remove paved path north of Tanglewood Park after improvement 16 is completed
26	Rock Armoring North of Tangelwood park
27	Repair or Replace Culverts north of Monticello Drive
28	Improvements to prevent switchback shortcuts north of Monticello Drive
29	Repair or Replace Culverts south of McNary Parkway
30	Install curb ramp on Independence Ave. connection
31	Improvements to prevent switchback shortcuts near Touchstone Road
32	Install curb ramps on Del Prado Ave. connection
33	Improve drainage on trail west of Del Prado
34	Install curb ramps on Bernini Court connection
35	Widen trail south of Aquinas from 8 to 10 feet
36	Widen trail and replace railings on trail north of Nova Court

* Improvements listed in each tier are in no particular order

Tier 1: Recommended Improvements

- 1) Lake Oswego High School connection:** Presently there is an unimproved path that connects from Kerr Parkway to Lake Oswego High School. An improved path will provide a safer and more direct route for students of Lake Oswego High School and Junior High School, as well as a non-motorized link for attendees of school events.



Improvement #1: An approximately 600 foot paved path connection from Kerr Parkway to Lake Oswego High School

- 2) Kerr Parkway and McNary Parkway Intersection Improvements:** This intersection has poor site lines and high auto volume and speed. We recommend that the City of Lake Oswego work with Mountain Park to improve the safety of this intersection for pedestrians and automobiles. Specific designs will require the expertise of a transportation engineer.



Improvement #2: Blind spots for automobiles at McNary and Kerr Parkway create a very difficult and dangerous crossing scenario for pedestrians.

3) **New McNary and Kerr Parkway Trails:** Install new trails along McNary and Kerr Parkway, south of Monroe Parkway.



There is sufficient room to accommodate a 10' paved trail along the eastern side of McNary Parkway.



It is not uncommon to see users on the grass along the McNary Parkway corridor.



Improvement #3: Paved trails along McNary and Kerr Parkway

- 4) **Gress Park path connection:** Remove existing stairs and replace with path on grade just south of the existing stairway.



Improvement #4: Approximate location of a new path down to the existing path that links Gress Park.



Approaching the present path terminus at the stairs to Gress Park.



View from the bottom of the existing stairs.



Proposed new route (on rightband side) from the existing trail to McNary Parkway, will not require stairs.

- 5) **Remove existing trails between Britten Court, Bartok Place and Bloch Terrace:** These existing trails are in very poor condition, partially located on private property, and are not connected to the trail network. Removing these trails will eliminate a liability to the HOA and remove a significant maintenance expense.



Improvement #5: Poor condition and lack of connections warrant removal

- 6) **New McNary Parkway sidewalks:** Install sidewalks on the north side of McNary Parkway, north of Jefferson parkway. This will provide non-motorized links to the Mountain Park Church and McNary Park for local residents.



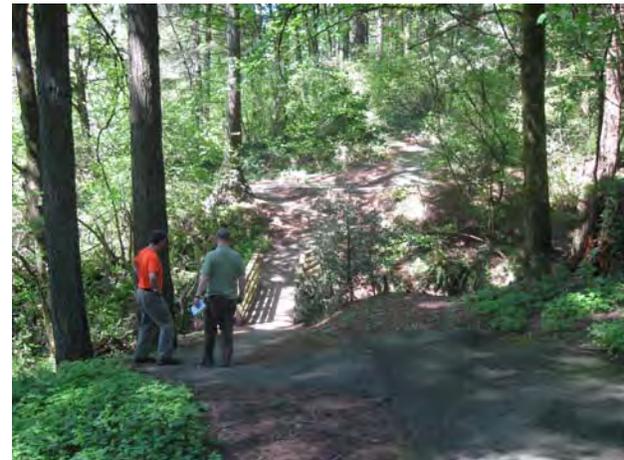
Improvement #6: Sidewalks in the heavily used area between McNary Park and Mountain Park Church.

- 7) **Bernini Court to Jefferson Parkway path improvements:** Improve the drainage along this segment and repave and widen the trail. Adjustments to the alignment may be required to prevent the existing erosion issue from becoming a recurring problem.



Improvement #7: Improvements in the drainage way parallel to the path should be a priority before realignment is considered.

- 8) **Bridge replacement between Bernini Court and Maintenance Yard/Storage area:** Replace the existing narrow bridge with an 8-10 foot wide bridge to better accommodate users. Increase the span of the bridge to reduce the steep slopes leading down to the existing bridge.



Improvement #8: A wider and higher bridge will be better suited for users and prevent any future flooding damage.

- 9) **Improve stairs at Del Prado Avenue:** Replace the stairs at Del Prado Avenue. Realignment to avoid the need for stairs is not feasible due to the steep slopes and constraints of adjacent private property.



Improvement #9: Replace the stairs at Del Prado Avenue

- 10) **Improve trail condition South of Del Prado Avenue:** Repave or realign trail south of Del Prado Ave. Install drainage improvements and permanent erosion control measures to prevent future erosion problems.



As shown, this part of trail is eroding at the edges due to poor drainage.

- 11) **Oak Creek Elementary School connection:** Install a trail connection to Oak Creek Elementary School. The Oak Creek Elementary School is just off the Mountain Park Site and the proposed trail is on School District Property. These improvements will need to be coordinated with the School District.



Improvement #11: A short connecting path should be installed to connect the school to the Mountain Park trail system.

- 12) **Widen and resolve drainage problems on existing path from Aquinas Street south to Oak Creek Elementary:** Install subsurface drainage or drainage swales to accommodate the runoff that naturally flows along this corridor. Reconstruct the trail to at least 10 feet wide to accommodate the heavy use of this alignment.



Improvement #12: Widen the trail to at least 10 feet to accommodate the heavy use by Oak Creek Students.

- 13) **Mid-Block Crossing on McNary Parkway:** Access to Lake Oswego High School will be safer with a marked crossing on McNary Parkway. The proposed location at the entrance to The Grotto is the location where many pedestrians cross to access Lake Oswego High School.

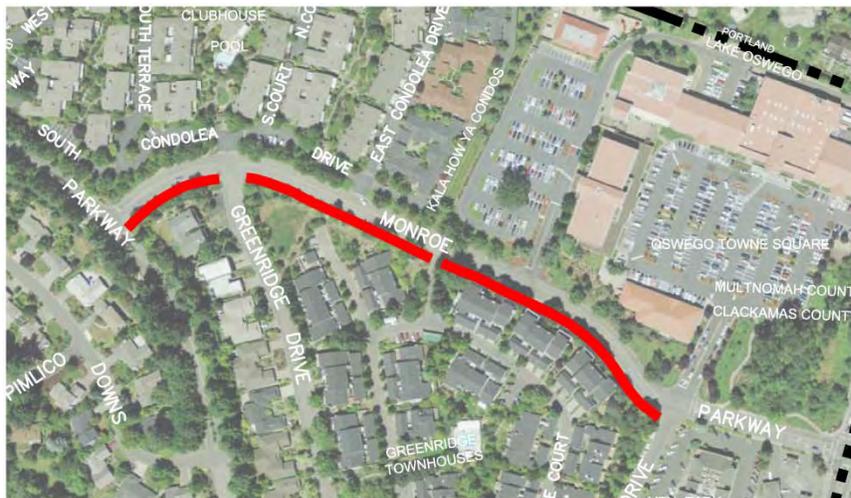


Improvement #13: A mid-block crossing of McNary Parkway

Tier 2: Recommended Improvements within the Mountain Park HOA Property

The following nine recommended improvements and connections are classified as Tier 2, and should be considered after Tier 1 improvements have been considered. They are highlighted in yellow in the Recommended Improvements Map in Appendix A.

- 14) **Improve trail along Monroe Parkway:** The approximate 1,200 foot trail connection adjacent to Monroe Parkway from McNary Parkway to the Oswego Towne Square and Mountain Park Market Place area is heavily used. However, the trail is too narrow and is in poor condition. Widening and repaving will provide a safer non-motorized option for residents to get to Oswego Town Square.



Improvement #13: A wider and better path will invite users to walk to Oswego Towne Center.

15) Stephenson Grade School street crossing: There is currently a 500 foot long chipped wood path adjacent to Stephenson Street from Eagle Crest Drive to the end of the Mountain Park property. To make a safer, more visually obvious connection to the nearby Stephenson Grade School, a mid-block crossing should be installed across Stephenson Street from the end of the path on the south side of the street, to the existing sidewalk on the north side that leads to the school. This crossing will need to be approved and installed by the City of Portland.



Improvement #15: Installing a mid block crossing across Stephenson Street will make a safer connection to Stephenson Grade School and the Mountain Park Community.



From the existing chip path (left), installing a mid-block crossing at the location in the (right) picture will make a safer connection to the existing sidewalk across Stephenson Street and Stephenson Grade School.

16) **Pave existing path connection between Tanglewood Park and Gress park-** This 270 foot trail is the shortest and most logical path between the parks.



Improvement #16: A paved path in this location would make a more logical connection between the two parks.



This short trail is the most direct route between Gress and Tanglewood Parks.

17) Widen and re-align trails on south side of tunnel at Jefferson and Kerr Parkway:

Realigning the west trail around the existing tree and widening both trails will improve safety at these tunnels.



Improvement #17: The sharp corners and narrow paths create hazards for trail users.

18) Improve existing stairs along trails up to Nansen Summit



Improvement #18: The stairs around the summit need to be rebuilt.

19) **Portland Community College connection:** Formalize the existing user trails to PCC.



Improvement #19 A paved connection from Cervantes Street to PCC.

20) **Botticelli Avenue mid block crossing:** Add a high visibility crosswalk across Botticelli Avenue.



Improvement #20 A mid block crossing across Botticelli Avenue will provide a safer connection from the trail to the sidewalk.

- 21) **Touchstone Park loop connection:** Widen the Touchstone Park Trail from 3 feet to 6 feet and complete the loop around the park.



Improvement #21 Completing the loop around Touchstone Park

Tier 3: Recommended Improvements within the Mountain Park HOA Property

There are sixteen Tier 3 recommended improvements on the Recommended Improvements map in Appendix A. These are highlighted in mauve. Although they are important to overall trail improvements in Mountain Park, they are less important and should be considered after Tier 1 and Tier 2 improvements have been considered. See Appendix A for the specific improvements and locations.

Signs

Identity/Way-finding

Way-finding information directing users to destinations in and around the community should be installed at the beginning of trails and at junctions of trails. This may take the form of an overall area map, specific independent directional signs or both. The signs should have a design that matches the overall design theme of the community. Notable destinations include: nearby schools, parks, the recreation center, and the church.

Regulatory

Regulatory signs should state the rules and regulations associated with use of the trails. Typical regulations include: hours of operation, trail etiquette, emergency and maintenance contact numbers. These should be placed near the primary entrances to the trail network.

Management and Maintenance Strategies

Proper trail maintenance must be provided or the functionality of facilities of the Mountain Park trail system will be negatively impacted. The following recommendations pertain to an asphalt trail surface.

Trail Maintenance

Effective trail maintenance is critical to the overall success and safety of any trail system. Maintenance activities typically include: pavement stabilization, landscape maintenance, facility upkeep, sign replacement, mowing, litter removal and painting. A successful maintenance program requires continuity and often involves a high level of citizen participation. Routine maintenance on a year-round basis will not only improve trail safety, but will also prolong the life of the trail. The benefits of a good maintenance program are far-reaching, including:

- A high standard of maintenance is an effective advertisement to promote the trail as a local and regional recreational resource.
- Good maintenance can be an effective deterrent to vandalism, litter, and encroachments.
- A regular maintenance routine is necessary to preserve positive public relations between the adjacent land owners and managing agency.
- Good maintenance can make enforcement of regulations on the trail more efficient. Local clubs and interest groups will take pride in “their” trail and will be more apt to assist in protection of the trail.
- A proactive maintenance policy will help improve safety along the trail.

Ongoing trail maintenance likely includes some, if not all, of the following activities:

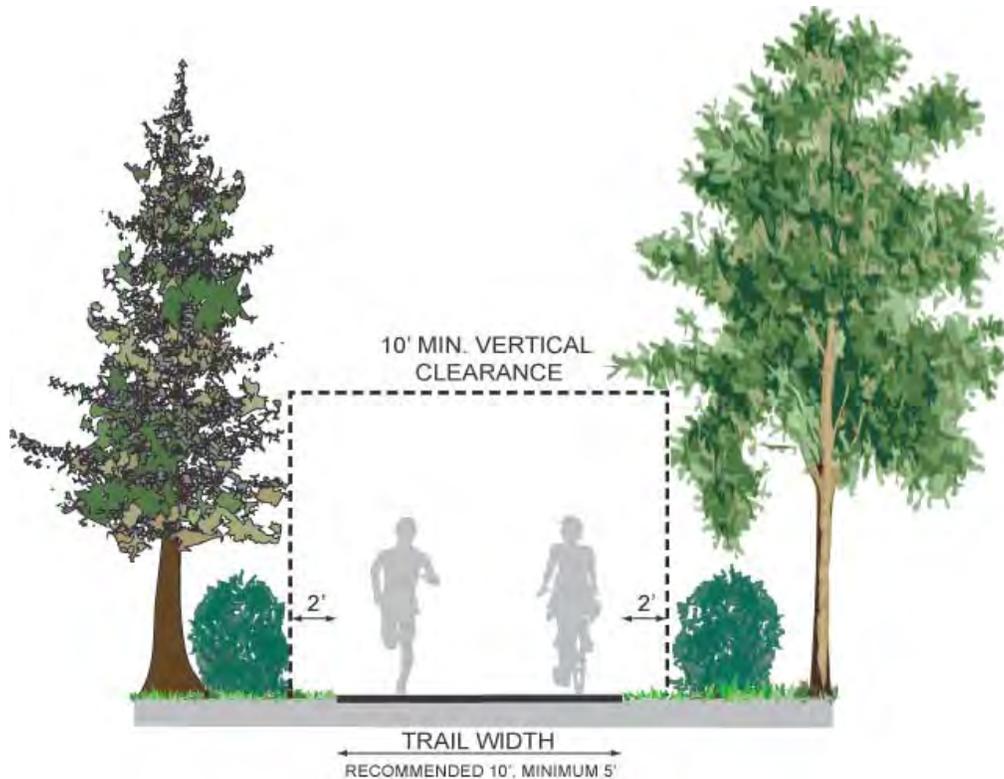
Vegetation

In general, visibility between plantings at trailside should be maintained so as to avoid creating the feeling of an enclosed space. This will also give trail users good, clear views of their surroundings, which enhances the aesthetic experience of trail users. Under-story vegetation within the trail right-of-way should not be allowed to grow higher than 36 inches and should be two feet away from the trail edge. Trees species selection and placement should be made which minimize vegetative litter on the trail as well as root uplifting of pavement. Vertical clearance along the trail should be periodically checked, and any overhanging branches over the trail should be pruned to a minimum vertical clearance of 10 feet.

Surfacing

Asphalt is the recommended surface material for the Mountain Park trail system. Cracks, ruts and water damage will need to be repaired periodically.

Where drainage problems exist along the trail, ditches and drainage structures will need to be kept clear of debris to prevent wash outs along the trail and maintain positive drainage flow. Checks for erosion along the trail should be made during the wet season, and immediately after any storm that brings flooding to the local area.



The ideal trail width for trails in Mountain Park should be 10 feet. Ideal clearance for safe use of trails includes a 10 foot vertical clearance and 2 feet on both sides of the trail.

The trail surface should be kept free of debris, especially broken glass and other sharp objects, loose gravel, leaves and stray branches. Trail surfaces should be swept periodically. Soft shoulders should be well maintained to maximize their usability.

Pest and Vegetation Management

Basic measures should be taken to protect the trail investment. This includes a bi-annual mowing along both sides of the trail to prevent invasion of plants into the pavement and shoulder areas. The recommended time of year for mowing is fall and spring. Wherever possible, vegetation control should be accomplished by mechanical means or hand labor. Some species may require spot application of state-approved herbicide.

Litter and Illegal Dumping

Staff or volunteers should remove litter along the trail. Litter receptacles should be placed at access points such as trailheads.

Illegal dumping should be controlled by vehicle barriers (bollards), regulatory signage and fines as much as possible. When it does occur, it should be removed as soon as possible in order to prevent further dumping. Neighborhood volunteers, friends groups and alternative community service crews should be considered in addition to maintenance staff.

Signage

Signs should be repaired or replaced along the trail on an as-needed basis.

Flooding

Portions of trails are adjacent to streams and thus are subject to periodic flooding. Debris accumulated on the trail surface should be removed after each recession of water. Debris should be periodically removed from the waterway under any bridge structure.

The Table below summarizes maintenance recommendations for the Mountain Park trail system:

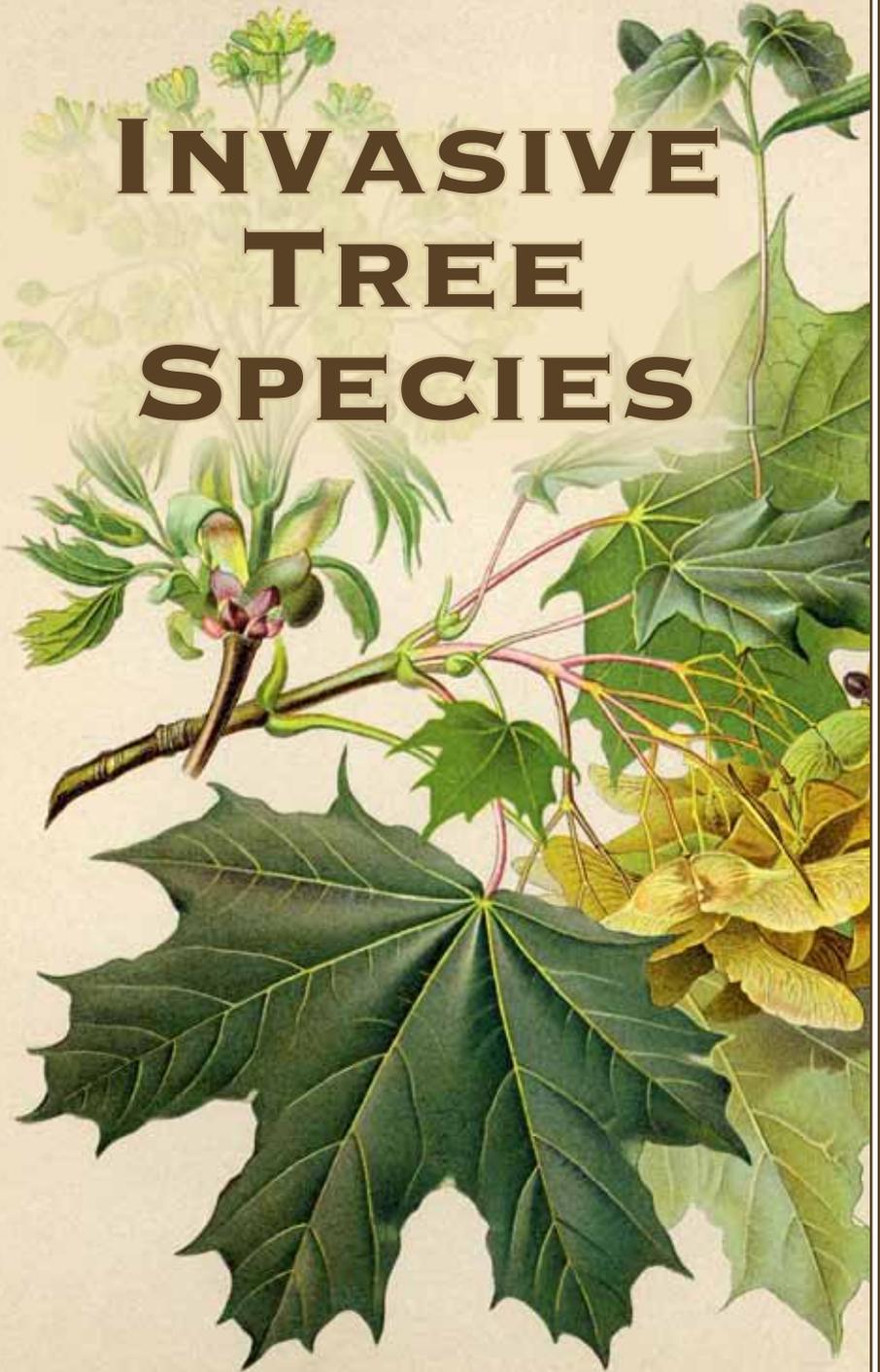
Maintenance Task	Suggested Frequency
Inspections	Seasonal – at both beginning and end of summer
Sign repair/replacement	1-3 years
Site furnishings; replace damaged components	As needed
Fencing repair	Inspect monthly for holes and damage, repair immediately
Pavement markings replacement	1-3 years
Pavement sweeping/blowing	As needed; before high use season
Pavement sealing; pothole repair	5-15 years
Lighting repair	Annually
Introduced tree and shrub plantings, trimming	1-3 years
Shrub/tree irrigation for introduced planting areas	Weekly during summer months until plants are established
Shoulder plant trimming (weeds, trees, branches)	Bi-annual (Fall or Spring)
Major damage response (fallen trees, washouts, flooding)	As needed
Culvert inspection	Before rainy season; after major storms
Maintaining culvert inlets	Inspect before onset of wet season
Waterbar maintenance (earthen trails)	Annually
Trash disposal	Weekly during high use; twice monthly during low use
Litter pick-up	Weekly during high use; twice monthly during low use
Graffiti removal	Weekly; as needed

Typical maintenance vehicles for the trails should be light pick-up trucks and occasionally heavy dump trucks and tractors. A mechanical sweeper is recommended to keep the trail clear of loose gravel and other debris. Care should be taken when operating heavier equipment on the trail to warn trail users and to avoid breaking the edge of the trail surface.

Appendix A: Maps

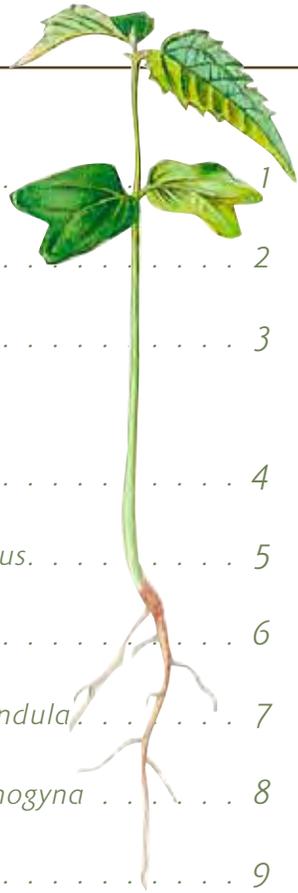
Appendix C

INVASIVE TREE SPECIES



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INVASIVE TREE SPECIES

are broadly defined as tree species that were introduced by humans to locations outside of their native range that spread and persist over large areas, outcompeting native species.

Invasive species negatively impact natural ecosystems by displacing native species, reducing biological diversity, and interfering with natural succession.

Twelve tree species, listed here, are known to be invasive in our region.

The City encourages the removal of invasive tree species by offering an expedited invasive tree species removal permit at no cost. The City does not require the removal of invasive tree species, but offers an easy and efficient process for property owners wanting to do so.



REMOVAL PERMIT PROCESS

The City may issue an invasive tree species removal permit at no cost for a tree that is on the Invasive Tree Species List upon demonstrating compliance with the criteria in LOC 55.02.050(1)(a).

The Invasive Tree Species Removal application form (available online and at the City Hall Planning Department) requires the following information:

1. Photograph(s) which positively identify the tree species;
2. The number, DBH*, species and location of trees to be removed on a site plan or aerial photograph of the property;
3. Whether the tree is located in a public right-of-way, Resource Conservation or Protection District, or if the tree is part of an approved landscape or mitigation plan;
4. Mitigation plan, if required pursuant to LOC 55.02.084(2), with information showing any proposed planting of any new trees to replace the trees to be removed; and,
5. Signature(s) of the property owner(s).

Invasive Tree Species Removal Permits do not expire.

* Diameter at Breast Height (DBH), determined by measuring the circumference of the main trunk 4.5' above ground, then dividing the circumference by pi (3.14).



MITIGATION

Mitigation for Invasive Tree Species removal is required when tree removal is:

- From a public right-of-way,
- From a Resource Conservation or Resource Protection District, or
- If a tree was planted as part of a previously approved landscape or mitigation plan.

The applicant must illustrate the location and type of mitigation trees on the site plan.

One replacement tree is required for each tree removed. The replacement tree must be either a minimum 2" caliper deciduous tree or a 6-8' tall evergreen tree. However, a minimum ½" caliper tree is permitted for replacement of invasive trees removed in Resource Conservation or Resource Protection Districts.

Replacement trees must be planted according to the specifications in the City Tree Planting and Maintenance Guidelines.





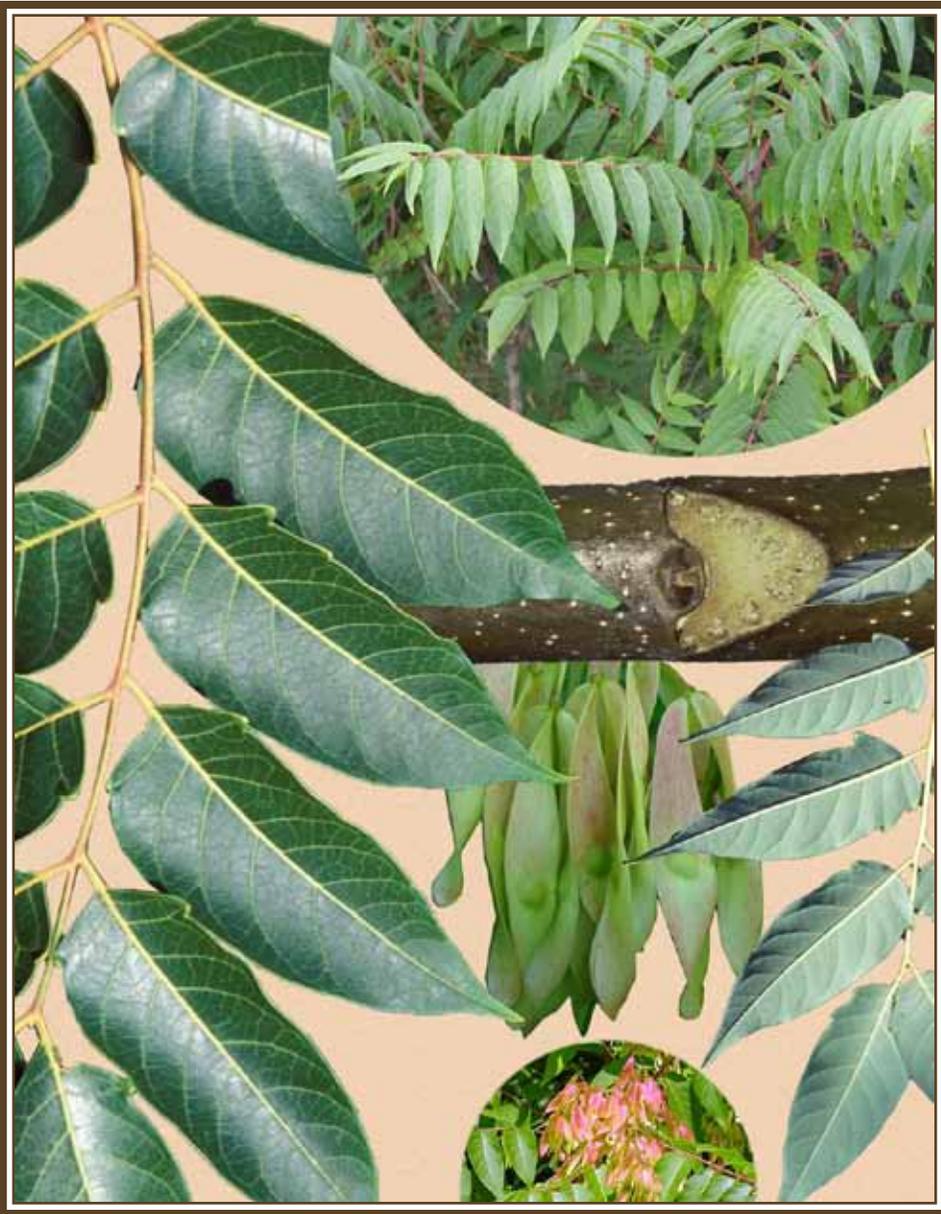
NORWAY MAPLE - *Acer platanoides*

Broken leaf stems of Norway maple ooze white sap (bigleaf maple does too, but bigleaf maple leaves are larger, 6-12" wide rather than 4-6" Norway maple leaves). The angle of seed wings of Norway maple is approximately 180°. Bark is regularly grooved. Flowers appear in early spring before leaves.



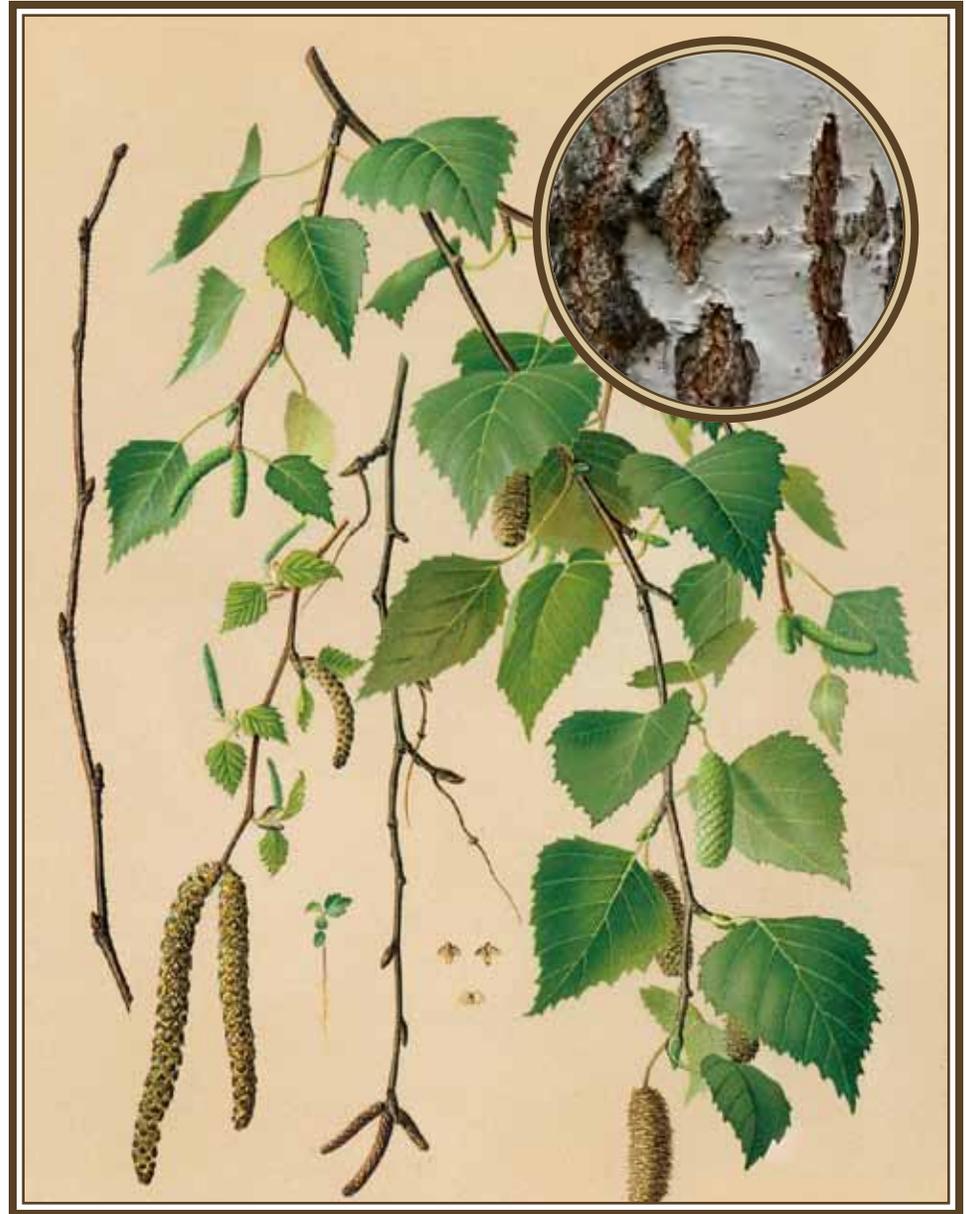
SYCAMORE MAPLE - *Acer pseudoplatanus*

Five lobed leaves with lightly serrated edges like most maples, but leaves are typically 3-6" wide, have deep veining and feel a bit leathery. The bark is gray-brown to red-brown and typically breaks into large scales that often exfoliate to reveal orange as the tree grows.



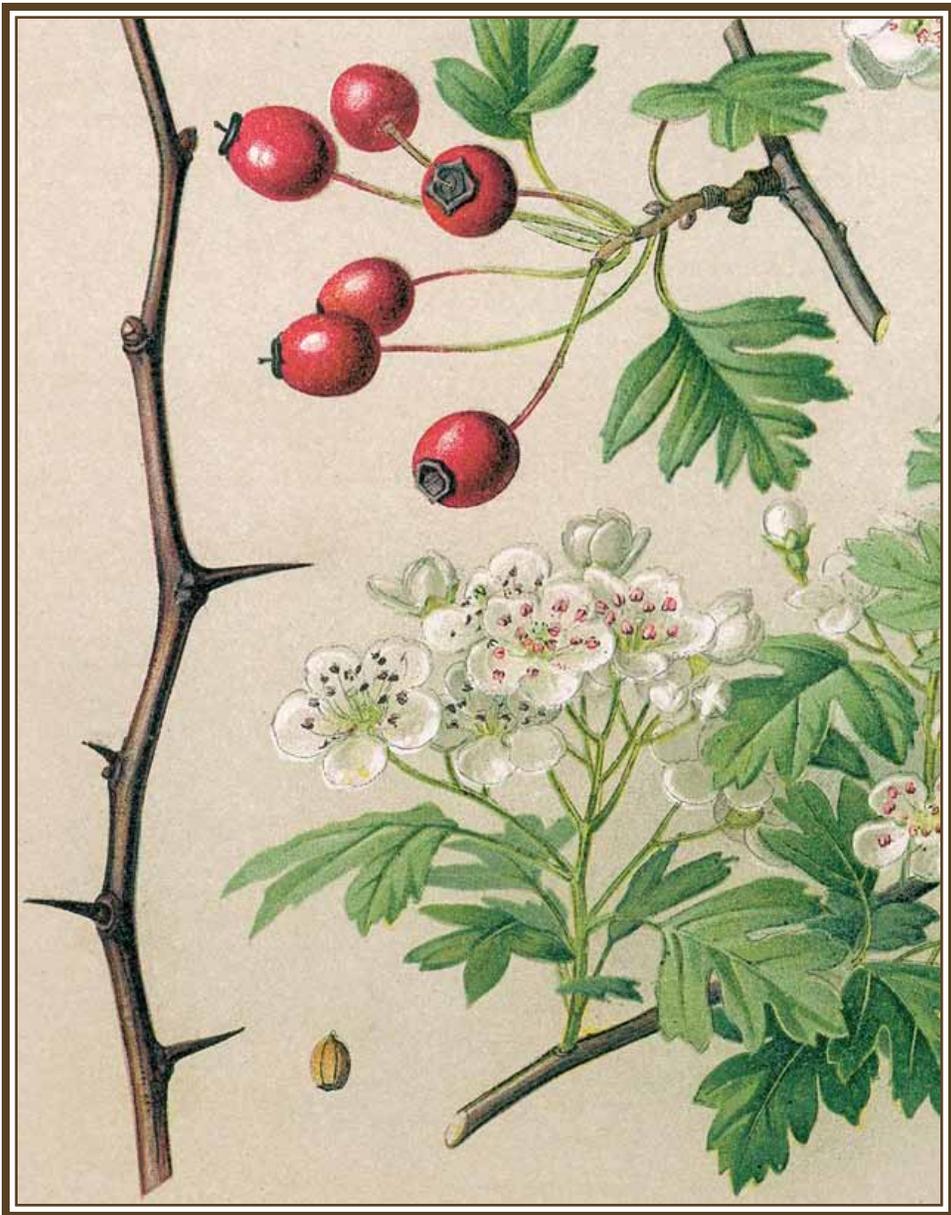
TREE-OF-HEAVEN - *Ailanthus altissima*

Leaves are 1- 4' in length with 10 to 41 leaflets. Resembles sumac and hickories, but distinguished by the notched base on each leaflet and large leaf scars on the twigs that look like the letter D. When broken, the twigs may have a strong peanut butter-like odor. Fruit is an oblong, twisted samara hanging in long clusters.



EUROPEAN WHITE BIRCH - *Betula pendula*

Smooth twigs. Triangular leaves with double serration on the edges. Bright white bark often with scattered black fissures. Buds are slender, pointed, green and brown.



ENGLISH HAWTHORN - *Crataegus monogyna*

Deeply lobed leaves. Thorns. White or pink flowers appear in spring. Fruit is a red pome with one seed inside which ripens in early fall.



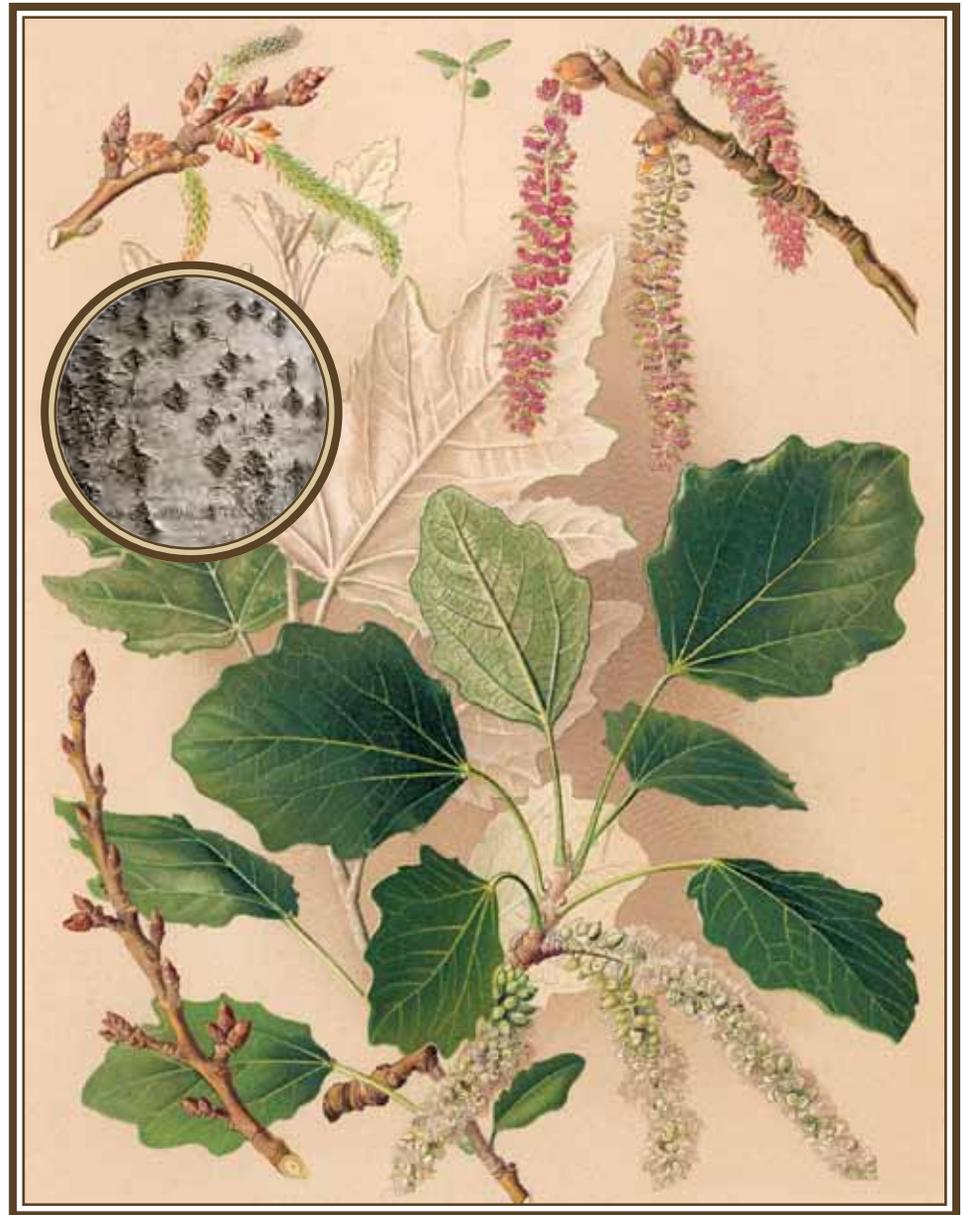
ENGLISH HOLLY - *Ilex aquifolium*

Leaves are thick, glossy, dark green and wavy, 1-3" long with sharp, stout spines along edges (edges may be smooth on older branches). Bunches of red, yellow or orange berries appear on female trees in winter.



PRINCESS TREE - *Paulownia tomentosa*

Leaves are 6-12" long, heart-shaped and hairy on the underside. In the spring, 2" long tube-shaped purple flowers develop in upright clusters. The fruit is an oval shaped capsule that stays on the tree well into winter.



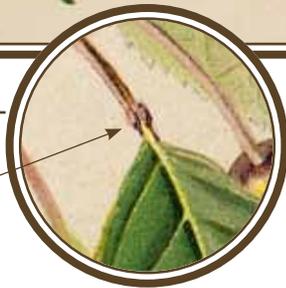
WHITE POPLAR - *Populus alba*

Leaves are coarsely toothed, 2-4", with shiny, dark green topsides and silvery-white and hairy undersides. Bark on young trees is smooth and greenish white becoming gray and wrinkled with age.



SWEET CHERRY - *Prunus avium*

Leaves are alternate, 2-5" long, and oval with serrated edges and two obvious red glands at the base of the leaf. White flowers appear in early spring.



BLACK LOCUST - *Robinia pseudoacacia*

Leaves are 8-14" long with 7-20 small round leaflets per leaf. A pair of long spines are located at the base of most leaves. Showy fragrant white to yellow flowers give way to smooth 2-4" seed pods. The bark of black locust is light brown, rough, and becomes furrowed with age.





EUROPEAN MOUNTAIN ASH - *Sorbus aucuparia*

Leaves are 5-8" long with 1" long individual leaflets that are serrated on their upper halves. Clusters of bright deep orange $\frac{3}{8}$ " diameter pomes ripen in fall.



SIBERIAN ELM - *Ulmus pumila*

Leaves are less than 3" long, singly-serrate, and dark-green in color with a nearly equilateral base. The bark is light gray with irregular furrows. Fruits are flat, circular and $\frac{1}{2}$ " wide with a notch at the top.

BACKYARD HABITAT CERTIFICATION PROGRAM

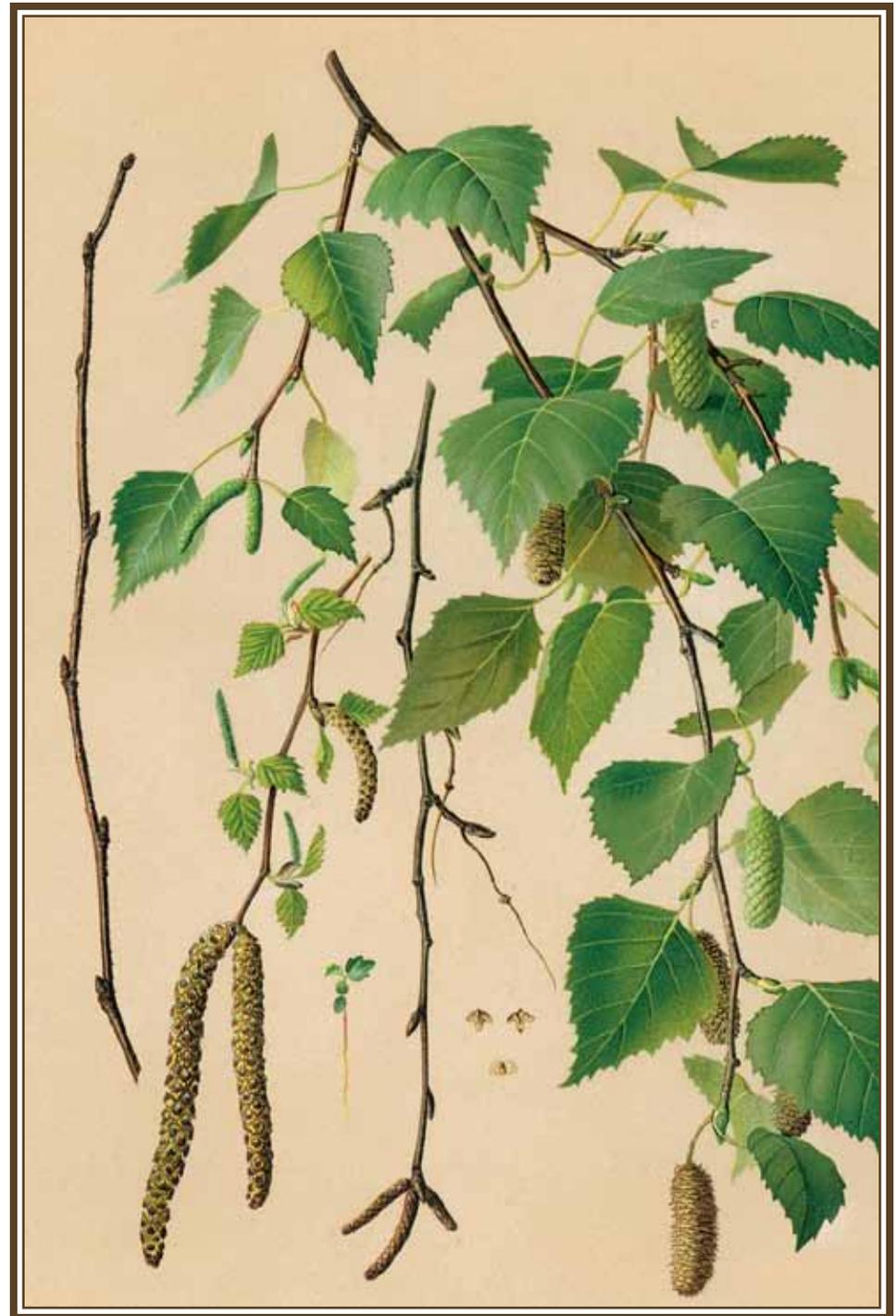
This program provides assistance and incentives to residents with small lots (an acre or smaller) who seek to restore native wildlife habitat to their backyards.

The program assists property owners through three levels of habitat restoration:

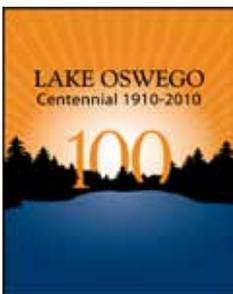
- Removal of aggressive weeds and naturescaping with native plants.
- Reducing water usage and managing stormwater runoff.
- Wildlife stewardship.

Lake Oswego's Backyard Habitat Certification Program was launched in 2011 by the Friends of Tryon Creek in partnership with the Audubon Society and Columbia Land Trust.

For more information visit: <http://audubonportland.org/backyardwildlife/backyardhabitat/BackyardLakeOswego>



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**CITY OF LAKE OSWEGO
PLANNING & BUILDING SERVICES**

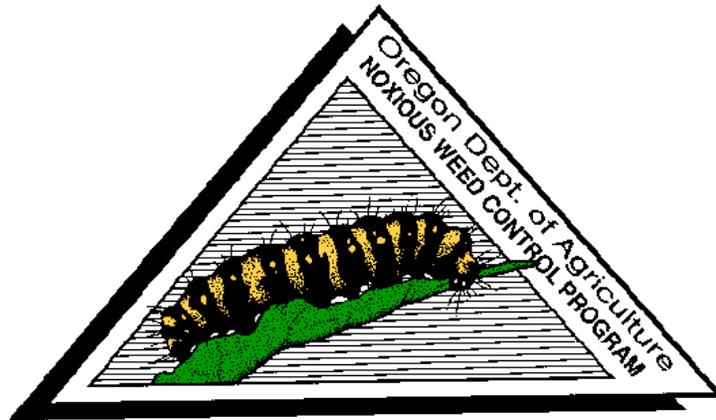
www.ci.oswego.or.us

Ph 503.635.0290 Fx 503.635.0269

380 A Avenue, 3rd Floor
Post Office Box 369
Lake Oswego, OR 97034

Appendix D

Noxious Weed Policy and Classification System 2012



Oregon Department of Agriculture
Noxious Weed Control Program

635 Capitol Street NE, Salem, Oregon 97301-2532, Tel (503)-986-4621
www.oregon.gov/ODA/PLANT/WEEDS

Mission Statement:

To protect Oregon's natural resources and agricultural economy from the invasion and proliferation of exotic noxious weeds.

Program Overview

The Oregon Department of Agriculture (ODA) Noxious Weed Control Program provides a statewide leadership role for coordination and management of state listed noxious weeds. The state program focuses on noxious weed control efforts by implementing early detection and rapid response projects for new invasive noxious weeds, implementing biological control, implementing statewide inventory and survey, assisting the public and cooperators through technology transfer and noxious weed education, maintains noxious weed data and maps for priority listed noxious weeds, and provides assistance to land managers and cooperators with integrated weed management projects. The Noxious Weed Control Program also supports the Oregon State Weed Board with administration of the OSWB Grant Program, developing statewide management objectives, developing Weed Risk Assessments and maintaining the State Noxious Weed List.

Tim Butler
Program Manager
tbutler@oda.state.or.us
503-986-4621

**Oregon Department of Agriculture
Noxious Weed Control Policy
and
Classification System
2012**

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Noxious Weed Control Policy and Classification System

DEFINITION:

“Noxious Weed” means any plant classified by the Oregon State Weed Board that is injurious to public health, agriculture, recreation, wildlife, or any public or private property.

Noxious weeds have become so thoroughly established and are spreading so rapidly on private, state, county, and federally owned lands, that they have been declared by ORS 569-350 to be a menace to public welfare. Steps leading to eradication, where possible, and intensive control are necessary. It is further recognized that the responsibility for eradication and intensive control rests not only on the private landowner and operator, but also on the county, state, and federal government.

WEED CONTROL POLICY

Therefore, it shall be the policy of the Oregon Department of Agriculture (ODA) to:

1. Rate and classify weeds at the state level.
2. Prevent the establishment and spread of noxious weeds.
3. Encourage and implement the control or containment of infestations of designated weed species and, if possible, eradicate them.
4. Develop and manage a biological weed control program.
5. Increase awareness of potential economic losses and other undesirable effects of existing and newly invading noxious weeds, and to act as a resource center for the dissemination of information.
6. Encourage and assist in the organization and operation of noxious weed control programs with government agencies and other weed management entities.
7. Develop partnerships with county weed control officers, universities, and other cooperators in the development of control methods.
8. Conduct statewide noxious weed surveys and weed control efficacy studies.

WEED CLASSIFICATION SYSTEM

The purpose of this Classification System is to:

1. Act as the ODA’s official guideline for prioritizing and implementing noxious weed control projects.
2. Assist the ODA in the distribution of available funds for Oregon State Weed Board grants and county noxious weed control requests.
3. Serve as a model for the private and public sectors in developing noxious weed classification systems.

Criteria for Determining Economic and Environmental Significance of Noxious Weeds is Based Upon:

DETRIMENTAL EFFECTS

1. A plant species that causes or has the potential to cause severe production losses or increased control costs to the agricultural and/or horticultural industries of Oregon.
2. A plant species that has the potential to or does endanger native flora and fauna by its encroachment into forest, range, and conservation areas.
3. A plant species that has the potential or does hamper the full utilization and enjoyment of recreational areas.
4. A plant species that is poisonous, injurious, or otherwise harmful to humans and/or animals.

PLANT REPRODUCTION

1. A plant that reproduces by seed capable of being dispersed over wide areas or that is long-lived, or produced in large numbers.
2. A plant species that reproduces and spreads by tubers, creeping roots, stolons, rhizomes or other natural vegetative means.

DISTRIBUTION

1. A weed of known economic importance which occurs in Oregon in small enough infestations to make eradication/containment possible; or not known to occur, but its presence in neighboring states makes future occurrence seem imminent.
2. A weed of economic or ecological importance and of limited distribution in Oregon.
3. A weed that has not infested the full extent of its potential habitat in Oregon.

DIFFICULTY OF CONTROL

A plant species that is not easily controlled with current management practices such as chemical, cultural, biological, and physical methods.

Noxious Weed Control Classification Definitions

Noxious weeds, for the purpose of this system, shall be designated “A” or “B” and may be given the additional designation of “T” according to the Oregon State Weed Board’s Noxious Weed Classification System.

- **“A” Designated Weed** – a weed of known economic importance which occurs in the state in small enough infestations to make eradication or containment possible; or is not known to occur, but its presence in neighboring states make future occurrence in Oregon seem imminent (Table 1).

Recommended action: Infestations are subject to eradication or intensive control when and where found.

- **“B” Designated Weed** – a weed of economic importance which is regionally abundant, but which may have limited distribution in some counties (Table 2).

Recommended action: Limited to intensive control at the state, county or regional level as determined on a site specific, case-by-case basis. Where implementation of a fully integrated statewide management plan is not feasible, biological control (when available) shall be the primary control method.

- **“T” Designated Weed** – a priority noxious weed designated by the Oregon State Weed Board as a target for which the ODA will develop and implement a statewide management plan. “T” designated noxious weeds are species selected from either the “A” or “B” list (Table 3).

Table I: “A” Designated weeds as determined by Oregon State Weed Board

Common name	Scientific name
African rue	<i>Peganum harmala</i>
Camelthorn	<i>Alhagi pseudalhagi</i>
Coltsfoot	<i>Tussilago farfara</i>
Common reed	<i>Phragmites australis, ssp. australis</i>
Cordgrass Common Dense-flowered Saltmeadow Smooth	<i>Spartina anglica</i> <i>Spartina densiflora</i> <i>Spartina patens</i> <i>Spartina alterniflora</i>
European water chestnut	<i>Trapa natans</i>
Flowering rush	<i>Butomus umbellatus</i>
Giant hogweed	<i>Heracleum mantegazzianum</i>
Goatgrass Barb Ovate	<i>Aegilops triuncialis</i> <i>Aegilops ovata</i>
Goatsrue	<i>Galega officinalis</i>
Hawkweed King-devil Meadow Mouse-ear Orange Yellow	<i>Hieracium piloselloides</i> <i>Hieracium pratense</i> <i>Hieracium pilosella</i> <i>Hieracium aurantiacum</i> <i>Hieracium floribundum</i>
Hydrilla	<i>Hydrilla verticillata</i>
Japanese dodder	<i>Cuscuta japonica</i>
Kudzu	<i>Pueraria lobata</i>
Matgrass	<i>Nardus stricta</i>
Oblong spurge	<i>Euphorbia oblongata</i>
Paterson’s curse	<i>Echium plantagineum</i>
Purple nutsedge	<i>Cyperus rotundus</i>
Silverleaf nightshade	<i>Solanum elaeagnifolium</i>
Squarrose knapweed	<i>Centaurea virgata</i>
Starthistle Iberian Purple	<i>Centaurea iberica</i> <i>Centaurea calcitrapa</i>
Syrian bean-caper	<i>Zygophyllum fabago</i>
Thistle Plumeless Smooth distaff Taurian Wooly distaff	<i>Carduus acanthoides</i> <i>Carthamus baeticus</i> <i>Onopordum tauricum</i> <i>Carthamus lanatus</i>
White bryonia	<i>Bryonia alba</i>
Yellow floating heart	<i>Nymphoides peltata</i>
Yellowtuft	<i>Alyssum murale, A. corsicum</i>

Table II: “B” designated weeds as determined by the Oregon State Weed Board

Common name	Scientific name
Armenian (Himalayan) blackberry	<i>Rubus armeniacus (R. procerus, R. discolor)</i>
Biddy-biddy	<i>Acaena novae-zelandiae</i>
Broom	
French*	<i>Genista monspessulana</i>
Portuguese	<i>Cytisus striatus</i>
Scotch*	<i>Cytisus scoparius</i>
Spanish	<i>Spartium junceum</i>
Buffalobur	<i>Solanum rostratum</i>
Butterfly bush	<i>Buddleja davidii (B. variabilis)</i>
Common bugloss	<i>Anchusa officinalis</i>
Common crupina	<i>Crupina vulgaris</i>
Creeping yellow cress	<i>Rorippa sylvestris</i>
Cutleaf teasel	<i>Dipsacus laciniatus</i>
Dodder	<i>Cuscuta spp.</i>
Dyers woad	<i>Isatis tinctoria</i>
English ivy	<i>Hedera helix (H. hibernica)</i>
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
False brome	<i>Brachypodium sylvaticum</i>
Field bindweed*	<i>Convolvulus arvensis</i>
Garlic mustard	<i>Alliaria petiolata</i>
Geranium	
Herb Robert	<i>Geranium robertianum</i>
Shiny leaf geranium	<i>Geranium lucidum</i>
Gorse*	<i>Ulex europaeus</i>
Halogeton	<i>Halogeton glomeratus</i>
Houndstongue	<i>Cynoglossum officinale</i>
Johnsongrass	<i>Sorghum halepense</i>
Jointed goatgrass	<i>Aegilops cylindrica</i>
Jubata grass	<i>Cortaderia jubata</i>
Knapweeds	
Diffuse*	<i>Centaurea diffusa</i>
Meadow*	<i>Centaurea pratensis</i>
Russian*	<i>Acroptilon repens</i>
Spotted*	<i>Centaurea stoebe (C. maculosa)</i>
Knotweeds	
Giant	<i>Fallopia sachalinensis (Polygonum)</i>
Himalayan	<i>Polygonum polystachyum</i>
Japanese	<i>Fallopia japonica (Polygonum)</i>
Kochia	<i>Kochia scoparia</i>
Lesser celandine	<i>Ranunculus ficaria</i>
Mediterranean sage	<i>Salvia aethiopsis</i>
Medusahead rye	<i>Taeniatherum caput-medusae</i>
Old man's beard	<i>Clematis vitalba</i>
Parrot's feather	<i>Myriophyllum aquaticum</i>

* Indicates weeds targeted for biocontrol agents

Continuation of “B” designated weeds	
Perennial peavine	<i>Lathyrus latifolius</i>
Perennial pepperweed	<i>Lepidium latifolium</i>
Poison hemlock	<i>Conium maculatum</i>
Policeman’s helmet	<i>Impatiens glandulifera</i>
Puncturevine*	<i>Tribulus terrestris</i>
Purple loosestrife*	<i>Lythrum salicaria</i>
Ragweed	<i>Ambrosia artemisiifolia</i>
Rush skeletonweed*	<i>Chondrilla juncea</i>
Saltcedar*	<i>Tamarix ramosissima</i>
Small broomrape	<i>Orbanche minor</i>
South American waterweed	<i>Egeria densa (Elodea)</i>
Spanish heath	<i>Erica lusitanica</i>
Spikeweed	<i>Hemizonia pungens</i>
Spiny cocklebur	<i>Xanthium spinosum</i>
Spurge laurel	<i>Daphne laureola</i>
Spurge	
Leafy*	<i>Euphorbia esula</i>
Myrtle	<i>Euphorbia myrsinites</i>
St. Johnswort*	<i>Hypericum perforatum</i>
Sulfur cinquefoil	<i>Potentilla recta</i>
Swainsonpea	<i>Sphaerophysa salsula</i>
Tansy ragwort*	<i>Senecio jacobaea</i>
Thistles	
Bull*	<i>Cirsium vulgare</i>
Canada*	<i>Cirsium arvense</i>
Italian	<i>Carduus pycnocephalus</i>
Milk*	<i>Silybum marianum</i>
Musk*	<i>Carduus nutans</i>
Scotch	<i>Onopordum acanthium</i>
Slender-flowered*	<i>Carduus tenuiflorus</i>
Toadflax	
Dalmatian*	<i>Linaria dalmatica</i>
Yellow*	<i>Linaria vulgaris</i>
Velvetleaf	<i>Abutilon theophrasti</i>
Water primrose	<i>Ludwigia peploides, L. hexapetala, L. grandiflora ssp.</i>
Whitetop	
Hairy	<i>Lepidium pubescens</i>
Lens-podded	<i>Lepidium chalepensis</i>
Whitetop (hoary cress)	<i>Lepidium draba</i>
Yellow archangel	<i>Lamium galeobdolon</i>
Yellow flag iris	<i>Iris pseudacorus</i>
Yellow nutsedge	<i>Cyperus esculentus</i>
Yellow starthistle*	<i>Centaurea solstitialis</i>

* Indicates weeds targeted for biocontrol agents

Table III: “T” or target weeds designated by Oregon State Weed Board

ODA annually develops a target list of weed species that will be the focus for prevention and control by the Noxious Weed Control Program, sanctioned by the Oregon State Weed Board. Because of the economic threat to the state of Oregon, action against these weeds will receive priority.

Common name	Scientific name
African rue	<i>Peganum harmala</i>
Common bugloss	<i>Anchusa officinalis</i>
Cordgrass Common Dense-flowered Saltmeadow Smooth	<i>Spartina anglica</i> <i>Spartina densiflora</i> <i>Spartina patens</i> <i>Spartina alterniflora</i>
Dalmatian toadflax**	<i>Linaria dalmatica</i>
Field bindweed**	<i>Convolvulus arvensis</i>
Garlic mustard	<i>Alliaria petiolata</i>
Giant hogweed	<i>Heracleum mantegazzianum</i>
Gorse	<i>Ulex europaeus</i>
Hawkweed Meadow Orange Yellow	<i>Hieracium pratense</i> <i>Hieracium aurantiacum</i> <i>Hieracium floribundum</i>
Knapweed Spotted Squarrose	<i>Centaurea stoebe (C. maculosa)</i> <i>Centaurea virgata</i>
Kudzu	<i>Pueraria lobata</i>
Leafy spurge**	<i>Euphorbia esula</i>
Matgrass	<i>Nardus stricta</i>
Paterson’s curse	<i>Echium plantagineum</i>
Perennial pepperweed	<i>Lepidium latifolium</i>
Portuguese broom	<i>Cytisus striatus</i>
Rush skeletonweed	<i>Chondrilla juncea</i>
Saltcedar**	<i>Tamarix ramosissima</i>
Starthistle Iberian Purple	<i>Centaurea iberica</i> <i>Centaurea calcitrapa</i>
Tansy ragwort**	<i>Senecio jacobaea</i>
Thistles Plumeless thistle Taurian Woolly distaff	<i>Carduus acanthoides</i> <i>Onopordum tauricum</i> <i>Carthamus lanatus</i>
Yellowtuft	<i>Alyssum murale, A. corsicum</i>

Indicates the majority of efforts are **focused on use of biocontrol agents



Appendix E

100 Most Dangerous Invaders To Keep Out of Oregon in 2012

[Note: Species in bold are those species that have had risk assessments completed.]

Micro-Organisms

alder root rot	<i>Phytophthora alni</i> subsp.
bacterial blight of grape	<i>Xylophilus ampelinus</i>
blackberry yellow vein disease, blackberry yellow vein-associated virus (BYVaV) and blackberry virus Y (BVY)	
chronic wasting disease	CWD prion
elm yellows	elm yellows phytoplasma
hazelnut bacteria canker	<i>Pseudomonas avellanae</i> /
infectious salmon anemia virus	ISAV
oak wilt	<i>Ceratocystis fagacearum</i>
<i>Phytophthora</i> taxon C	<i>Phytophthora kernoviae</i>
plum pox	plum pox potyvirus (PPV)
poplar canker	<i>Xanthomonas populi</i>
potato cyst nematodes	<i>Globodera rostochiensis</i> and <i>G. pallida</i>
potato wart	<i>Synchytrium endobioticum</i>
blueberry hill carlavirus - New Jersey strain	(BBScV-NJ)
Southern wilt, bacteria wilt	<i>Ralstonia solanacearum</i> Race 3 Biovar 2
viral hemorrhagic septicemia virus (VHSV)	<i>Novirhabdovirus</i> spp.
whirling disease	<i>Myxobolus cerebralis</i>**
willow watermark disease	<i>Brenneria salicis</i>

Aquatic Plants

algae, toxic (golden, toxic cyanobacteria)	<i>Prymnesium parvum</i>, <i>Cylindrospermopsis raciborskii</i>
African waterweed	<i>Lagarosiphon major</i>
Asian kelp	<i>Undaria pinnatifida</i>
caulerpa seaweed	<i>Caulerpa taxifolia</i>
common reed	<i>Phragmites australis</i>
cordgrasses	<i>Spartina alterniflora</i>*, <i>S. densiflora</i>, <i>S. anglica</i>, <i>S. patens</i>**
dead man's fingers	<i>Codium fragile tomentosoides</i>
European water chestnut	<i>Trapa natans</i>
flowering rush	<i>Butomus umbellatus</i>
giant salvinia	<i>Salvinia molesta</i>
hydrilla	<i>Hydrilla verticillata</i>
rock snot	<i>Didymosphenia geminate</i>
yellow floating heart	<i>Nymphoides peltata</i>**

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Land Plants

African rue
***Alyssum* spp.**
camelthorn
coltsfoot (not *Petasities frigidus*)
giant hogweed
goatgrasses (barbed, ovate)
goat's rue
hawkweeds (king-devil, meadow,
mouse-ear, orange, yellow)
Japanese dodder
kudzu
matgrass
oblong spurge
Paterson's curse
purple nutsedge
silverleaf nightshade
squarrose knapweed
starthistles (Iberian, purple)
Syrian bean-caper
thistles (plumeless, smooth
distaff, woolly distaff, **taurian**)

white bryonia

Peganum harmala**
***Alyssum* spp.**
Alhagi pseudalhagi
Tussilago farfara**
Heracleum mantegazzianum**
Aegilops triuncialis, *A. ovata*
Galega officinalis
Hieracium piloselloides, *H. pratense***, *H. pilosella*,
*H. aurantiacum***, *H. floribundum*
Cuscuta japonica
Pueraria lobata**
*Nardus stricta***
Euphorbia oblongata
Echium plantagineum**
Cyperus rotundus
Solanum elaeagnifolium
*Centaurea virgata***
Centaurea iberica**, ***C. calcitrapa*****
Zygophyllum fabago
*Carduus alanthoides***, *Carthamus*
baeticus, *Carthamus lanatus***, ***Onopordum***
tauricum
Bryonia alba

Aquatic Invertebrates

Asian clam
Asian tapeworm
Japanese shore crab
Leidy's comb jelly
mitten crabs
New Zealand sea slug
Orconectes virilis (virile crayfish),
Procambarus sp. (marbled crayfish
or "marmorkrebs")
sea squirt
transparent tunicate
club tunicate
veined rapa whelk
waterflea (fishhook, spiny)
zebra mussel, quagga mussel

Potamocorbula amurensis
Bothriocephalus acheilognath
Hemigrapsus sanguineus
Mnemiopsis leidyi
Eriocheir* spp.
*Philina auriformis***

Didemnum* sp.*
Ciona savignyi
*Styela clava**
Rapana venosa
Cercopagis pengoi, *Bythotrephes cederstroemi*
Dreissena polymorpha*, *Dreissena rostriformis
bugensis

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Land Invertebrates

Africanized honey bee

Argentine ant

Asian longhorned beetles

bean plataspid

brown spruce longhorn beetles

emerald ash borer

European chafer

European corn borer

European woodwasp

granulate ambrosia beetle

gypsy moths (European, Asian,
pink, nun moth)

imported fire ants (red, black)

Japanese beetle

Japanese wax scale

khapra beetle

light brown apple moth

Mexican bean beetle

old world bollworm

Oriental beetle

plum curculio

Siberian moth

silver Y moth

spruce bark beetle

Swede midge

White garden snail, vineyard snail, and heath snail (terrestrial snails)

Apis mellifera scutellata

*Linepithema humile**

Anoplophora glabripennis*, *A. chinensis

Megacopta cribraria

Tetropium fuscum, *T. castaneum**

Agrilus planipennis

Rhizotrogus majalis

Ostrinia nubilalis

Sirex noctilio

*Xylosandrus crassiusculus**

*Lymantria dispar***, *L. mathura**, *L. monacha*

Solenopsis invicta**, *S. richteri

*Popillia japonica***

Ceroplastes japonicus

Trogoderma granarium*

Epiphyas postvittana

Epilachna varivestis

Helicoverpa armigera

Anomala orientalis

Conotrachelus nenuphar

Dendrolimus superans

Autographa gamma

Ips typographus

Contarinia nasturtii

Theba pisana*, *Cernuella virgata*, *Xerolenta obvia

Fish

Amur goby, round goby, Shimofuri goby

Asian carp (bighead, silver), black carp

Atlantic salmon

golden Shiner

muskellunge, northern pike, tiger muskie

ruffe

snakeheads

threadfin Shad (yellow tails, shad and
shad minnow)

Rhinogobius brunneus, *Neogobius melanostomus*,
Tridentiger bifasciatus

Hypophthalmichthys nobilis*, *H. molitrix*, *Mylopharyngodon piceus

*Salmo salar****

Noteigonus crysoleucas

Esox spp.*

Gymnocephalus cernuus

Channa spp.

Dorosoma petenense

Birds — mute swan

Cygnus olor**

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Mammals —feral swine

*Sus scrofa***

Reptiles — eastern snapping turtle

Chelydra serpentine serpentina

Changes that were made to the 100 Worst List from 2011 to 2012:

Micro-organisms

1. Remove ramorum canker and blight (SOD is here to stay and we've switched to a defensive, slow-the-spread strategy).

Land Invertebrates

2. Add Bean plataspid—it is spreading rapidly and causing significant damage to legumes in the SE.

Other changes:

1. Two asterisks were added to *Didemnum* because this species exists in Winchester and Coos Bays in Oregon.

2. One asterisk was added to club tunicate because it was previously detected in Oregon, but was eradicated or did not establish.

Changes that were made to the 100 Worst List from 2010 to 2011:

Land Plants

The following were removed from the list:

1. Skeletonleaf bursage was removed from the list because the Oregon State Weed Board removed it from its "A" list and placed it on a watch list. It is present in the bordering county of Nez Perce, Idaho, but there is no eminent threat to Oregon.

2. Texas blueweed was removed from the list because the Oregon State Weed Board removed it from its "A" List and placed it on a watch list. It is present in Yakima County, WA (under control). Washington is one year from eradicating this plant, and there is no eminent threat to Oregon.

The following was added to the list:

1. Alyssum species because of their ability to outcompete native forbs and plants.

Aquatic Plants

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1. Asian kelp (*Undaria pinnatifida*) was added to the list because of its threat to Oregon waters (based on proximity to Oregon – it is in several bays in California) and its ability to outcompete native algae and other important species.

Aquatic Invertebrates

The following were added to the list:

1. Two crayfish species were added to the list to replace the invasive crayfish that have become established in the state.

The following were removed from the list:

1. The red swamp crayfish and rusty crayfish now have established populations in Oregon, and have been removed from the list.

Changes that were made to the 100 Worst List from 2009 to 2010:

Aquatic Plants

Two species were combined to create an algae category:

1. Golden alage and toxic cyanobacteria were combined under algae, toxic.

One species was added to the list:

2. Common reed was added to the list.

Land Plants

One species was added to the list:

1. Japanese dodder was added to the list.

Aquatic Invertebrates

Two species were combined to create one waterflea category:

1. Spiny waterflea and fishhook waterflea were combined under waterflea.

Changes that were made to the 100 Worst List from 2008 to 2009:

Micro-organisms

The following were removed from the list:

1. cherry leaf roll nepovirus (CLRNV) is found in Oregon, although on an alternate host. It has failed to move to cherries. Also, like pear trellis rust, the damage it is capable of causing is significantly less than the new species we added to the list.

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2. pear trellis rust (*Gymnosporangium fuscum*) is established in WA and is a manageable disease. Also, it is not fatal to its host, unlike the others.

The spelling was corrected:

1. sudden oak death *Phytophthora ramorum*** (corrected spelling)

There was a name change for:

1. Sheep pen hill virus blueberry hill carlavirus - New Jersey strain (BBScV-NJ) carlavirus
(BBScV-NJ) (corrected name change)

The following were added to the list:

1. blackberry yellow vein disease, blackberry yellow vein-associated virus (BYVaV) and blackberry virus Y (BVY) (this disease is caused by the two viruses acting synergistically) (Nancy K. Osterbauer, ODA)

2. bacterial blight of grape *Xylophilus ampelinus*

Aquatic Plants

The following were added to the list:

1. Flowering rush, *Butomus umbellatus*—Montana is asserting that this plant could eventually spread through much of the Columbia Basin. It's not far from the northeast and southeast Oregon borders

Land Plants

The following were removed from the list:

1. mile-a-minute weed (*Polygonum perfoliatum*)* This species is not listed in either Oregon or Washington.
2. Portugese broom (*Cytisus striatus*)** (Note: *Note this would be a removal because it "got away," and therefore would count against our benchmark.) This plant is a "B" rated plant in Oregon. Though Portuguese broom is a high priority for protection of our forest lands in the state, programs implementing control projects have moved from eradication mode into containment mode with this plant.

The following were added to the list:

1. white bryonia (*Bryonia alba*)—White bryonia is a vigorous herbaceous perennial vine resembling kudzu in appearance and growth habit. Infestations will overgrow and smother small trees and shrubs forming dense mats which shade out all the vegetation it grows upon. If established in areas with no structure to climb, it will form a dense mat covering the ground. Vines emerge each spring from a large fleshy parsnip-shaped tuber and grow rapidly, sometimes to 30 feet. Populations are documented from south-east Washington State, Idaho, Utah and Montana. Should white byronia become established in Eastern Oregon it poses a huge threat for forest and range land, not to mention ecosystems of the Hells Canyon/Snake River area.
2. goat's rue, *Galega officinalis*—Goat's rue, *Galega officinalis*.L., is a USDA federally listed noxious weed. A member of the legume family, it was introduced into Utah in 1891 as a potential forage crop. Escaping cultivation, it now occupies in excess of 60 square miles in Cache, County, Utah. Within this area, goat's rue infests cropland, fence lines, pastures, roadsides, waterways, and wet, marshy areas (Evans and Ashcroft 1982). The plant's stems and leaves contain a poisonous alkaloid, galegin, which renders the plant unpalatable

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to livestock, and toxic in large quantities. It is particularly lethal to sheep. Because of these issues, goat's rue invasion can reduce forage availability and quality.

3. oblong spurge, *Euphorbia oblongata*—Oblong spurge is a weedy escaped ornamental species of *Euphorbia* known from only one site in Salem, Oregon. Suspected to have been introduced from California in contaminated flax or machinery that was used at the State Penitentiary flax mill in the early part of the 1900's, it has slowly expanded its territory on the penitentiary property. Growing up to 3' tall, this species is capable of forming dense stands in more arid climates and could be expected to be a troublesome weed to control should it spread and establish in eastern Oregon.

Aquatic Invertebrates

The following were removed from the list:

1. Unnamed estuarine snail (Coos Bay), *Assimineia* sp. (Increasingly widespread establishment is one of our criteria for bumping a species off the 100 worst list. The small brackish water snail we saw on the rip-rap of the Yaquina river, capable of carrying the human liver flukes parasite is *Assimineia* parasitological.

The following was added to the list (with other nonnative crayfish):

1. Red swamp crayfish (Louisiana crayfish), *Procambarus clarkia*— Native to south central United States, this species has been found in California, Idaho, Oregon and Washington. Noted for its burrowing activity which could damage dams, levees, and water control structures. Introduced into Oregon as a bait species and releases from classroom science experiments.

Land Invertebrates

The following were removed from the list:

1. pine shoot beetle (*Tomicus piniperda*) PSB does not appear to present a threat to forest ecosystems, primarily being a threat to Christmas tree plantations. Granted, the latter commodity is important, but pines are being phased out as Christmas trees in favor of other species which are not hosts known to support PSB reproduction.
2. sawyers (*Monochamus urussovi**, *M. alternatus*)* (I think there is too little information) to support the two *Monochamus* spp. as major threats to our forests).

The following were added to the list with the other terrestrial snail:

1. vineyard snail, *Ceruella virgata* and *heath snail*, *Xerolenta obvia*—These two snails have the potential to be pests of many more commodities (cereals, forage crops, grapes, orchards, etc.) and would greatly increase molluscicide use. They are certainly much more difficult to control or eradicate than PSB and probably more so than *Monochamus* species. The technologies for detection and delimitation are also much less effective (try "primitive"). At least one of these species can also vector human and animal parasites and both can vector plant diseases.

Fish

The following was grouped with other non-native carp:

1. black carp (*Mylopharyngodon piceus*) (Move black carp with Asian carp to group like species).

The following were added to the list:

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1. Threadfin Shad (yellow tails, shad and shad minnow), *Dorosoma petenense*— Native to the south-central United States and introduced into parts of the northern United States. Arizona and California as a forage and baitfish for warm water fish species such as largemouth bass, crappie and walleye. Feeds on zooplankton, and breeds quickly.

2. Golden Shiner, *Noteigonus crysoleucas*— Native to eastern United States. Introduced as a baitfish, ornamental and forage fish. Impact to Oregon is through competition with native fish for food and habitat. Lays up to 200, 000 eggs and may spawn more than once during a breeding season.

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