

RESOLUTION NO. 2016-29

**RESOLUTION ADOPTING 2016-21 URBAN FOREST MANAGEMENT PLAN,
AS RECOMMENDED BY COMMUNITY FORESTRY COMMISSION**

WHEREAS, the City Council established the Community Forestry Commission to advise on matters related to the urban forest; and

WHEREAS, Municipal Code Section 9.230(4) grants the Community Forestry Commission the duty to advise the City Council on protection of trees in the community; and

WHEREAS, Municipal Code Section 9.230(4) also grants the Community Forestry Commission the duty to make recommendations to City Council for community forestry related programs; and

WHEREAS, the Community Forestry Commission prepared an Urban Forest Management Plan as a strategic framework for ensuring the long-term viability of the urban forest to fulfill the duties of Municipal Code Section 9.230(4); and

WHEREAS, the Community Forestry Commission is recommending the City Council adopt the 2016-21 Urban Forest Management Plan as described in Exhibit A.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY OF FOREST GROVE AS FOLLOWS:

Section 1. The City Council of the City of Forest Grove hereby adopts the 2016-21 Urban Forest Management Plan, dated April 2016, attached as Exhibit A.

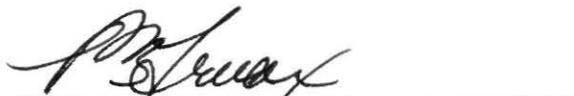
Section 2. This resolution is effective immediately upon its enactment by the City Council.

PRESENTED AND PASSED this 25th day of April, 2016.



Anna D. Ruggles, City Recorder

APPROVED by the Mayor this 25th day of April, 2016 .



Peter B. Truax, Mayor



2016-2021

URBAN FOREST MANAGEMENT PLAN

◆
APRIL 2016
◆



Dates covered by plan:

2016 – 2021

Prepared by:

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Plan adopted:

April 25, 2016

Adopted by:

Forest Grove City Council:

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Acceptance by Forest Grove Parks and Recreation Commission
by unanimous vote on February 16, 2016

Acknowledgements:

Urban Forest Management Toolkit

Executive summary

This document provides an overall framework for managing Forest Grove’s urban and natural forest resources (this plan does not include the Forest Grove City watershed). It is based on the condition of the forest in 2014 and an analysis of trends that have shaped Forest Grove's urban forest to date and will continue to influence it in the future. The major portions of this document are described below.

Tree resource assessment

This section discusses current condition, issues and trends that are likely to impact Forest Grove's tree resources over at least the next 25 to 50 years. Topics include:

- Canopy cover
- Street trees
- Facility trees
- Parking lot trees
- Park trees
- Register/Heritage trees
- Open space trees
- Hazard trees

Community values

This section presents the summary of stakeholder attitudes and perceptions about the urban forest and its management.

Strategic plan

Topics include:

- Issues, trends, and needs
- Goals
- Objectives
- Actions

Implementation plan

Topics include:

- Potential funding sources
- Proposed implementation strategy
- Monitoring plan

Appendix

This section presents several of the inventories and technical guides. Topics include:

- 2011 street tree inventory
- 2014 vegetation assessment and recommendations for City parks
- Tree planting standards
- City list of recommended street trees for planting
- Register of Historic and Significant (Heritage) trees list
- Tree related ordinances (Forest Grove Development Code Article 5 and Municipal Code Chapter 9)
- Chronological public involvement record
- Public survey questions and responses
- Other management plans

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Mission & Vision

Mission statement

The mission of the Forest Grove CFC is to work with the community and government to increase awareness about the importance and values of urban trees. To this end the City Council authorized the CFC to:

1. Maintain the Forest Grove Significant Tree Register (Tree Register) by:
 - a. Recommending to the City Council the designation of properties with significant trees that meet the criteria for designation.
 - b. Recommending removal of trees from the Register
2. Ensure that significant trees are protected and pruned appropriately
3. Review activities proposed by the City and other agencies that may seriously affect Register trees and advise on such matters
4. Perform other activities relating to community trees, including but not limited to:
 - a. Providing public education on the history and importance of the Register trees;
 - b. Providing advice to the City Council and other City boards on protection of trees in the community
 - c. Providing technical information on community tree issues
 - d. Making recommendations to the City Council for community forestry related programs
 - e. Periodically reviewing and making recommendations for updating the Significant Tree Register
 - f. Recommending to the City Council the acceptance of grant funds and donations towards the protection and planting of trees in the community

Vision statement

The Forest Grove Community Forestry Commission (CFC) believes that a healthy and expanding community forest is essential to our community's quality of life and to our environmental and economic wellbeing.

Vision for the Forest Grove Urban Forest in 2020

The health of this urban forest, a mosaic of the planted landscape and the remnant native forest, is a reflection of the city's health, well-being and livability. These trees and other plants are a vital part of the city character, giving it a special sense of place. Forest Grove continues to be recognized as a Tree City USA for the 25th consecutive year in 2015.

The urban forest canopy is cohesive, not fragmented, because development includes trees as part of the total vision for sustainable development. The air and water are cleaner because the trees and other plants remove pollution from the air and reduce runoff. Fish and wildlife have healthy habitats. Open spaces and urban stream corridors define a sense of space in our

communities while providing a quiet respite from hectic urban life. Tree-lined streets offer shade and protect us from inclement weather. Shoppers frequent shaded business districts where trees help save energy, reduce noise and soften the hard edges of structures and paved areas.

Coordinated management of the urban forest occurs because city agencies, businesses, civic organizations and residents have formed partnerships to make a place for trees in the city. Residents recognize trees as a vital, functioning part of the city's infrastructure and ecosystem and provide adequate, stable funding to maintain and enhance the urban forest.

We have achieved a healthy, sustained urban forest, carefully managed and cared for, which contributes to the economic and environmental well-being of the city.

Why we need a plan

Trees provide a variety of important benefits in the urban environment. These benefits include removing carbon from the atmosphere, reducing energy use, improving air quality, moderating storm water flows, protecting water quality, improving economic sustainability, supporting physical and mental health of residents, and providing habitat for wildlife.

The community's trees need to be managed in order to maintain this stream of benefits which are critical to the community's economic well-being and overall quality of life. Unlike most other urban infrastructure, the value of the urban forest generally increases over time. Benefits provided by the urban forest may take years to develop to desired levels, but tree resources can be adversely impacted over short time periods by a lack of timely management or poor management choices. An urban forest management plan helps a community protect the investment it has made in its community forest and provides a blueprint for enhancing and improving that asset to maximize the benefits provided while minimizing costs required to maintain the resource.

Whether for good or ill, the community's trees are being managed in some fashion whether a plan is in place or not. Without a vision and plan for the management of the urban forest as a whole, however, it is unlikely to thrive and provide the benefits that the community desires.

Many benefits provided by trees are listed below:

Benefits provided by trees

- Removing carbon from the atmosphere;
- Producing oxygen;
- Reducing energy use;
- Improving air quality;
- Moderating storm water flows;
- Protecting water quality;
- Improving economic sustainability;
- Increasing property values;
- Supporting physical and mental health of residents; and
- Providing habitat for wildlife

The City's street tree inventory completed in 2011 provided a glimpse into the benefits to the community as a result of our urban forest. For example street trees in Forest Grove remove nearly 8 million pounds of air pollutants per year.

Scope of the plan

This intent of this plan is to provide a strategic framework for managing the urban forest within Forest Grove. Other site specific plans may be developed that address the management of the urban forest in areas such as college campuses, office parks, historical sites, botanical gardens, recreation areas, or other large properties that contain significant amounts of tree canopy. These site specific plans would fit within the strategic framework of the urban forest management plan.

The following types of trees are included in this urban forest management plan:

- Street trees
- Facility trees
- Parking lot trees
- Park trees
- Register/Heritage trees
- Open space trees
- Hazard trees

Planning horizon

Efforts should be made to update the management plan every 5 years, or sooner if the need exists and resources are available.

Relationship to other planning documents

Cities and counties, as well as other public districts, typically have multiple layers of planning documents. This plan will incorporate elements from the following documents (this list will be expanded as necessary):

- Parks and recreation master plan
- Urban renewal plans
- Community sustainability element of the comprehensive plan
- Design and landscaping guidelines and development standards (Public Works Specifications)
- Ordinances, including the local tree ordinance
 - Forest Grove Development Code Article 5
 - Tree Protection
 - Forest Grove Development Code Article 8
 - Landscaping, Screening and Buffering (Parking Lot Trees)
 - Municipal Code Chapter 5
 - Trees and Plants
 - Municipal Code Chapter 9
 - Boards and Commissions (Community Forestry Commission)
 - Street Trees

The Urban Forest

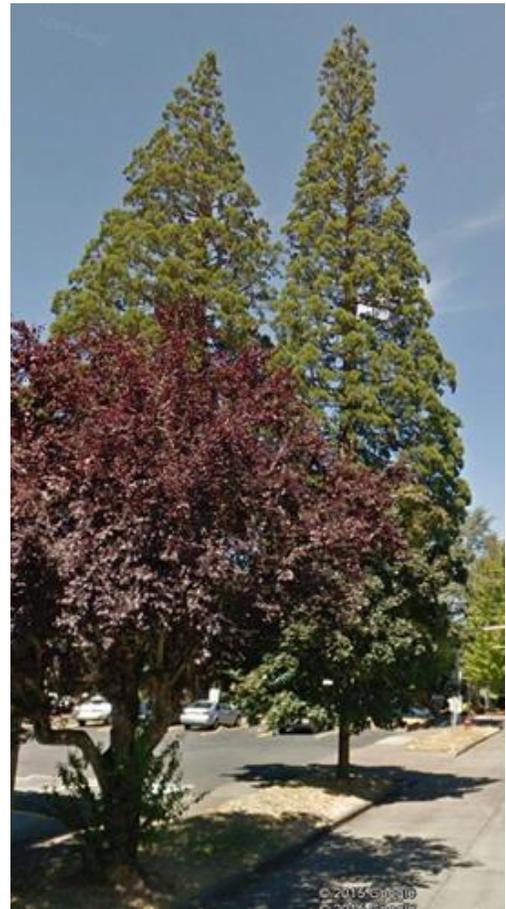
Historical context

Native Vegetation

At the time of European settlement, heavy forests covered most of the region. Stands of Douglas-fir, western hemlock, and western redcedar dominated the landscape. Deciduous bigleaf maple and red alder were intermixed. Wetlands and flood plains along the river supported Oregon ash, willows, and black cottonwood. Oregon white oak and Pacific madrone grew in drier uplands. Understory upland vegetation included vine maple, western hazel, oceanspray, snowberry, thimbleberry, Oregon grape, salal, red huckleberry, ferns and forbs. Wetland species included elderberry, Douglas spirea, dogwood, sedges and rushes.

Much of this forest was cleared for farming beginning in the mid 1800's. The earliest european settlers came to the Tualatin Valley of Oregon as farmers and missionaries in the 1840s. The Native Americans in the region were of various bands of the Tualatin Branch of the Kalapuya Indian Group. Several Native American villages were located along the banks of Gales Creek just south of present day Forest Grove (From Forest Grove Comprehensive Plan (1980) p. IV-1.).

In 1859 the name "Forest Grove" was officially recognized for the area around what is now Pacific University. The name probably referred to the grove of oak trees on and around the University grounds. Several of these trees exist today. According to historical accounts many of the large sequoia trees in Washington County were planted from seed by John R. Porter circa 1870. This includes the sequoia trees located on the Pacific University campus and elsewhere in Forest Grove.



Sequoias at 19th Avenue and Elm Street

Environmental context

Rainfall

Average annual precipitation is 45.12 inches (*Source: Western Regional Climate Center*). Northwest Oregon, including Forest Grove, is susceptible to strong winter storms that are carried along the Jet Stream over the Pacific Ocean. Heavy rain events are not uncommon during the fall, winter and spring months. Such events pose potential risk to the urban forest especially mature Oregon white oak trees.

Temperature

Average Max: 63.6/Average Low: 41.6, Average Range 32.1 to 82.6 (*Source: Western Regional Climate Center*). Northwest Oregon, east of the Coast Range and west of the Cascades, typically experiences moderate temperatures during spring, fall and winter. Summers are characterized by warm to hot days and cool evenings. The summer months are typically dry which can cause considerable stress on certain trees especially non-native varieties.

Climate Zone

USDA Tree hardiness zone 8. USDA developed tree hardiness zones to guide plant selection with an eye toward those which are most likely to survive at a given location. The zones are based on the average annual minimum winter temperature. As the map below indicates, Washington County is located within tree hardiness zone 8.



The Arbor Day Foundation provides information on tree species suitable for the various tree hardiness zones. Popular trees suitable for zone 8 identified by the Arbor Day Foundation include:

- Eastern white pine
- Sugar maple
- Red maple
- Yoshino cherry
- Saucer magnolia
- Dogwood
- Northern red oak
- Black walnut

Soil conditions

Soils in this area are dominated by clays, silts, and loams partially as a result of historic flood events (Lake Missoula 15-20,000 years ago). Soil types found throughout the City have potential shrink-swell and low shear strength problems. Soil is an important factor contributing the growth of tree especially within urban or suburban environments. Research shows that soil compaction is a significant contributor to overall tree health.

Tree resource assessment

Canopy cover

Background

Tree canopy cover refers to the proportion of land area covered by tree crowns, as viewed from the air. Canopy cover is tied to many of the benefits provided by the urban forest.

Existing condition

The tree canopy cover in Forest Grove is estimated to be approximately 23.2 %. (*Source: Portland State University, Regional Urban Forestry Assessment and Evaluation for the Portland-Vancouver Metro Area, Revised June 2010*). This figure is estimated to have increased 2-5% in the past 20 years as former farmland has been developed into new housing areas and trees have been planted.

The organization American Forests recommends tree canopy coverage for urban and suburban areas. American Forests recommends 40% as the goal for urban areas overall and 50% for suburban residential areas in the Pacific Northwest. The City of Vancouver, Washington has set a canopy goal of 28% and the City of Tigard, Oregon has a goal of 32% canopy coverage by 2027.

The Community Forestry Commission recommends the following canopy coverage goals:

Goals/desired condition

- 30% canopy cover by 2025
- 40% canopy cover by 2035

Achieving these goals requires concentrated effort and a clear strategy. This plan provides a framework for setting our community on a path for realizing a viable and sustainable urban forest worthy of a city named Forest Grove.

Street trees

Background

Trees along streets are one of the most visible portions of the urban forest. Due to their location, street trees provide specific benefits not provided by other trees. Benefits include traffic calming and extending the life of roadway pavement. Streets shaded by trees contribute to "sense of place," which can also contribute to increased community pride and property values.

Street trees are often located in very constrained locations. Pavement and utility lines may limit growing space. Other management issues that may be important for street trees include:

- Trees are commonly subject to damage by vehicles and street construction activities.
- Conflicts with utilities, hardscape (especially sidewalks, curbs, and gutters) and other built infrastructure are common.
- Branch, trunk, and root failures commonly have a high potential to cause property damage and/or injury.
- Tree canopies typically need to be maintained for street and sidewalk clearance, visibility issues for motorists, and to minimize risk of branch failures.
- Falling leaves, seeds, and fruits may create hazards on sidewalks and contribute to storm drain clogging.
- Street trees may generate high numbers of service requests and complaints.

Because of these issues, species selection is often a primary consideration. The species used may be specified in a master planting plan or on an approved species list. The palette of potential street tree species may be limited, which can sometimes lead to low species diversity. Low species diversity can pose a risk to the urban forest if one or more common species develop serious problems.



Existing condition

The City of Forest Grove Community Development Department manages the street tree planting program within newly developed areas. Historically, street tree planting was left to home builders. Many trees, however, did not fare well due to improper tree selection and planting in less-than-desirable locations. To address this problem, the City now selects trees with input from homeowners and manages tree planting to ensure proper placement. The street tree planting program is funded through an assessment at time of building permit issuance. The Street Tree Fund contained in the City budget is the collection of these assessments.

A street tree inventory was completed for Forest Grove in 2011 (see appendix). Findings include:

- Over 150 different tree species were found in Forest Grove
- The three most abundant trees are Japanese maple, Japanese flowering cherry, and Norway maple
- Deciduous trees are the dominant tree type, comprising 69% of all street trees
- Greater than half (59%) of the trees are less than 12 inches in diameter
- Street trees comprise approximately 350 acres (10% of the total land area in the City)
- The total replacement value for the street trees is estimate to be \$148 million
- White oak, Douglas-fir, and Sequoia had a higher proportion of observations in the poor to fair condition class than the average for the average of all species surveyed.

Opportunities include

- Identification of unoccupied areas as potential future planting sites
- Include an assessment element of whether the inventoried tree is in an appropriate location (based on potential tree size, crown characteristics, overhead utility location, etc.) in future inventories
- Expand the sample size
- Intensive tree survey along heavy traffic corridors (19th Avenue, Pacific Avenue, B Street, Thatcher Road) to develop long-range management plan to replace aging trees in poor condition
- Identification of street trees causing problems for pedestrians or motorists

Goals/desired condition

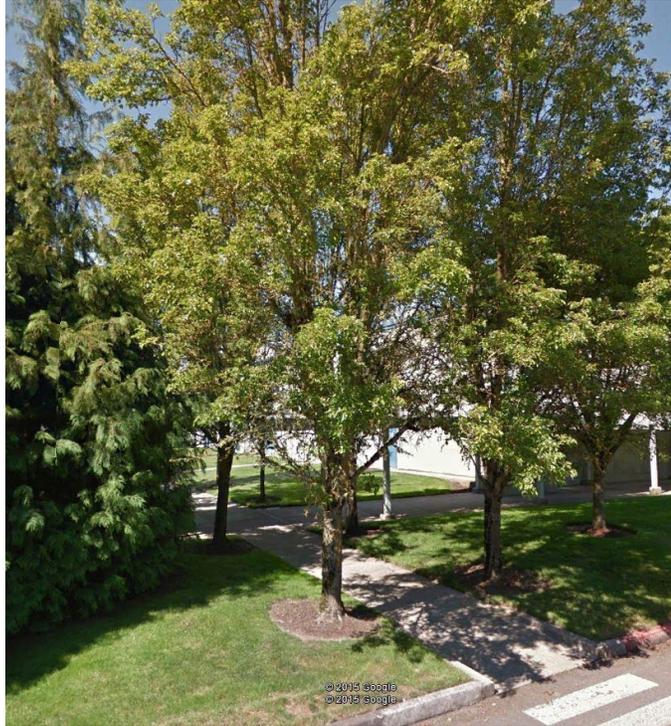
- Mixed age/size classes and species composition
- Retain tree species representing character of Forest Grove (White oak, Douglas-fir, bigleaf maple, sequoia)
- Resistant to insect, disease, environmental damage
- Minimal impact to adjacent utilities (including storm sewer)
- Safe environment for pedestrians, motorists, and home owners
- Efficient to maintain
- Non-invasive species suitable for Forest Grove's climate

Facility trees

Background

Many urban trees fall into the "facility tree" category. These are privately owned and maintained trees around buildings and other built facilities that are not adjacent to streets. Most trees in sites such as office parks or campuses are facility trees. Shade provided by trees near buildings can greatly reduce summer cooling costs. Facility trees also modify the visual impact of structures.

Most facility trees grow where soil volume is restricted by hardscape. They commonly occur in landscape beds near structures. These landscape beds can vary widely in size. Facility trees may also occur in small planters or cutouts in sidewalks or plazas.



Some potential management issues:

- Soil near buildings may be unfavorable due to severe compaction and alkaline residues from concrete, stucco, etc.
- Planting beds may have inadequate drainage or irrigation.
- Competition from other landscape plants may be excessive.
- Reflected heat or excessive shading from structures may affect tree growth and health.
- Pruning may be needed to maintain clearance from buildings and over walkways.
- Potential for root damage to foundations and walkways needs to be considered.
- Underground utility maintenance may damage tree roots.

Existing condition

Notable facility trees include the Oregon white oaks, and Douglas-firs on the Pacific University campus. The university has a draft vegetation management plan for the campus (55 acres) and has recently expanded non-irrigated areas near white oaks to improve tree health.

Goals/desired condition:

- Mixed age classes and species composition
- Resistant to insect, disease, environmental damage
- Minimal impact to adjacent buildings and utilities
- Safe environment for pedestrians, motorists, and home owners
- Efficient to maintain

Parking lot trees

Background

Parking lots can occupy large patches of the urban landscape. Trees in parking plots can help mitigate some of their undesirable characteristics:

- Tree shade helps cool pavement. This helps reduce the urban heat island effect that is associated with paved areas.
- Tree shade cools parked cars. Hydrocarbon vapors emitted by hot cars contribute to photochemical smog formation.
- Trees intercept and channel rainfall, reducing runoff and water pollution associated with runoff from paved surfaces.
- Trees screen and soften the visual blight that parking lots pose



Forest Grove High School Nichols Lane Frontage

Parking lots are typically poor areas for growing trees. Trees are often grown in small cutouts with compacted soils, poor irrigation, and inadequate drainage. Trees may be subject to heat damage from hot pavement and vehicle engines. Trees are also damaged by vehicles and shopping carts. Trees are pruned to provide vehicle clearance and avoid blocking parking lot lighting. Retailers sometimes have trees pruned inappropriately to enhance visibility of signs or buildings from the street. Trees in parking lots can also have undesirable effects such as dripping sap on cars or causing additional maintenance/cleaning of the parking surface.

Existing condition

The Forest Grove development code for parking lots requires:

- At least 8% of the interior parking lot area shall be landscaped (DC 10.8.415(E)(3)).
- One tree shall be required for every 1,600 square feet of interior parking lot area. Trees shall have a minimum 2-inch caliper and 6-foot branch height at time of planting (DC 10.8.415(E)(4)).
- Interior parking area landscaping and trees must be dispersed throughout the parking area. Some trees may be grouped, but the groups must be dispersed. Required trees may be planted within 5 feet of the edges of the parking area (DC 10.8.415(E)(5)).

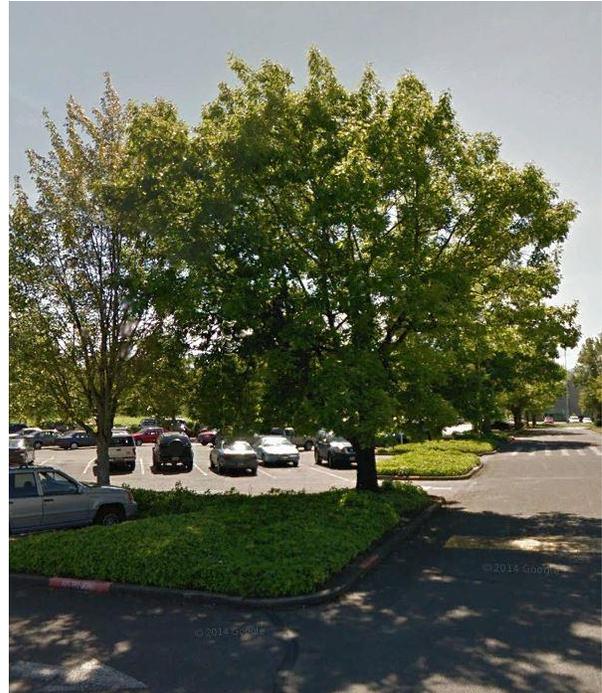
Forest Grove has a variety of parking lots developed over time, some have trees planted in them, and some do not. The recent remodel of Forest Grove High School included the planting of trees within the reconfigured parking lot and along Nichols Lane. The photograph above shows some of the newly planted trees.

Opportunity

Inventory parking lots to identify potential areas for planting, as well as existing plantings that may be incompatible with goals/desired conditions.

Goals/desired condition:

- Mixed age classes and species composition
- Resistant to insect, disease, environmental damage
- Minimal potential impact to vehicles
- Safe environment for pedestrians and motorists
- Efficient to maintain



Example of Well-Maintained Parking Lot Trees



Example of Improper Pruning of Parking Lot Tree

Park trees

Background

Park trees include trees in public parks maintained by the City. Compared with street or facility trees, park trees may have fewer space constraints for both canopies and roots. This can allow the use of a wider range of species and larger trees overall. Tree care, however, may not receive high priority where turf or sports fields are primary uses. Other considerations:

- Trees in or near lawns need to tolerate high amounts of irrigation. Turf can also compete strongly with young trees.
- Soil compaction due to foot and equipment traffic on wet soils may impair root growth and drainage.
- Surface roots in turf may conflict with mowing equipment and may pose tripping hazards.
- Trees can be subject to damage from mowing equipment and park users. This can make it difficult to establish new trees.
- Hazard management may be a primary concern, especially in areas that are heavily used.
- Newly-developed parks often start with even-aged stands of trees. Phased tree replacement and interplanting may be needed to avoid a future replacement of the entire stand.
- Parks may include heritage trees or other old or unique trees with special maintenance needs.



Thatcher Woods



Rogers Park

Existing condition and opportunities

Forest Grove currently has over 20 park sites covering approximately 100 acres. Recent findings from the 2014 City park vegetation assessment include:

- The parks contain a wide variety of planted and native trees
- Significant tree maintenance is occurring
- Opportunities exist to plant additional trees, both to fill in unoccupied space, and to provide for future replacement of existing trees
- Some hazard abatement (dead branches) needs to occur
- May need a regular assessment schedule for overhead hazards?
- Opportunities exist to remove and replant a few smaller trees that appear to be too close to existing structures and utility wires
- Some past plantings need to be thinned to fewer trees on the site because of over crowding

Goals/desired condition:

- Safe environment for park visitors
- Mixed age classes and species composition
- Retain tree species representing character of Forest Grove (Oregon white oak, Douglas-fir, bigleaf maple, sequoia)
- Resistant to insect, disease, environmental damage
- Minimal impact to adjacent utilities
- Efficient to maintain (watering, mowing, etc.)
- Non-invasive species
- Greater coordination between the Community Forestry Commission and Parks and Recreation Commission regarding management of trees within the City's parks and open spaces.

Register trees

Background

Register/heritage trees are trees that are awarded special status due to their

1. Tree size, shape, or location;
2. Botanical significance;
3. Exceptional beauty;
4. Functional or aesthetical relationship to a natural resource.

In Forest Grove these trees are a reminder of the city's namesake and offer historic, aesthetic, environmental, and monetary value to the community. Because these are special trees by definition, they may have special needs relative to tree care activities and inspections.



Register Tree (Goff Oak)

Existing condition

The register tree program in Forest Grove was initiated in the mid-1990s. Approximately 100 trees were identified. Protection ordinances were developed for the register trees. Yearly notices of pertinent tree care information or additional services are sent to homeowners with register trees on their property. The City of Forest Grove requires a permit for activities that will impact heritage trees.

Current summary of Forest Grove's register trees:

Tree Type	Number
Oregon white oak	138
Douglas-fir	15
Giant Sequoia	19
Big leaf maple	2
Ponderosa pine	1
Umbrella tree	1
European beech	1
Western red cedar	2
Deodora cedar	2
Camperdown elm	1

Goals/desired condition

- Safe environment for home owners
- Retain tree species representing character of Forest Grove (White oak, Douglas-fir, Big leaf maple, sequoia)
- Minimal impact to adjacent utilities
- Provide for periodic health inspections
- Have adequate ordinances for protection
- Have adequate process for identification of new candidate register trees

Opportunities

- Increase public awareness of program
- Identification of potential Register tree candidates

Open space trees

Background

Open space trees are often remnants of the native forest found along creeks or on hills. In some areas, some or all of these trees may be exotic species. Management goals and needs will depend on what types of species are present, their condition, and their location.

Tree management in open spaces is usually less intensive than in other parts of the urban forest. In some areas, open space trees may be largely unmanaged. However, these stands can and will change over time. Active management may be needed to:

- Help maintain native stands that have low levels of natural regeneration
- Suppress exotic species that may crowd out native trees in riparian areas
- Replace flammable exotic species with lower risk trees such as native oaks

Existing condition

Open space areas in Forest Grove total approximately 350 acres. Examples of open space trees include:

- Area along Gales Creek near the B Street Trail

Goals/desired condition

- Maintain native species composition
- Maintain conditions reducing threat from wildland fires

Opportunities

- Additional tree plantings along Gales Creek and the B Street Trail.

Hazard trees

Background

Forest Grove is susceptible to strong wind weather events during the winter months. Many older iconic trees in the City are vulnerable to damage. An example of this occurred in March of 2012 when one of the large Oregon white oak trees located in downtown Forest Grove succumbed to the wind. (See photo at right.) Fortunately, the tree fell in the early morning hours and did not cause injury to persons or significant property damage.



Tree Hazard

Many communities have developed programs to mitigate safety risks to persons and property. Some communities perform hazard tree risk assessments based on criteria developed by the International Society of Arboriculture. Such an assessment takes into account factors including history of tree failure, topography, soil conditions, tree foliage, vigor and possible defects, crown size, wind exposure, and conditions of roots. Based on these factors likelihood of failure is categorized. Categories include improbable, possible, probable and imminent. Potential impact and consequences are also assessed.

Existing condition

Hazard trees exist throughout Forest Grove, primarily in the older sections of town, and include the Old Town and Forest Gale Heights neighborhoods.

Goals/desired condition

- Safe environment for residents.

Opportunities

- Develop a hazard tree mitigation program and assessment methodology
- Perform hazard tree assessments

Management of the tree resource

Background

Almost all processes needed to sustain the urban forest – establishment, growth, decline, death, and degradation of trees – require some level of active management. Urban forest managers typically:

- Plan and implement tree plantings
- Maintain existing trees
- Manage hazards associated with declining trees
- Remove trees that have reached the end of their useful life span
- Recycle or dispose of green waste and wood from pruning and removals

Urban forest managers must also deal with problems related to the urban environment. These may include:

- Utility line clearance
- Damage to sidewalks and other hardscape due to tree roots
- Complaints from pedestrians and motorists about trees causing safety (visibility) issues
- Construction damage to tree roots
- Exotic species invading natural areas
- Fire hazards at the urban-wildland interface

Existing condition

Tree maintenance falls to three departments: Public works, Parks and Recreation, and Light and Power. Tree planting is the responsibility of the department undertaking the project. The Community Development Department manages the street tree planting program, issues permits for pruning or removal of protected trees including street trees, Register trees and trees on development sites.

Roles and Responsibilities (*Forest Grove City departments*):

- *Parks and Recreation Department:*
Maintain trees in City parks and on City-owned property, provide tree inspections at request of other departments, and support Community Forestry Commission
- *Community Development Department:*
Manage street tree planting program; review development proposals potentially affecting trees, issue tree pruning and removal permits, enforce tree planting regulations, support Community Forestry Commission.
- *Public Works Department:*
Address tree/sidewalk conflicts, annual fall leaf pick-up, maintenance along rights-of-way to address tree/ public way signage conflicts
- *Light and Power Department:*
Prune trees potentially affecting overhead utilities.

- No lead department/person for coordination of tree related activities between departments .

Forest Grove tree pruning standards prescribe a maximum 20% of tree canopy or 10% of critical root zone system impact. Tree topping prohibited.

Goals/desired condition

- Have adequate ordinances, plans and policies in place to manage tree resource (tree planting standards, pruning standards, protection standards during construction, tree removal permits, street tree species planting list, invasive tree species list)
- Safe environment for pedestrians, motorists, and homeowners
- Recycle (urban forest salvage) or dispose of green waste and wood from pruning and removals
- Adequate training for city and private crews doing tree maintenance work
- Adequate budgets for maintaining city trees
- Adequate coordination between city departments involved with tree related work

Opportunities

- Update tree planting standards
- Update/develop pruning standards
- Develop protection standards for underground utility, sidewalk, or other work that affects tree roots
- Determine if there is adequate coordination between departments for tree maintenance activities
- Identify areas available for additional planting of trees
- Determine adequacy of budgets for current and future maintenance/removal of trees in declining health (especially large trees)
- Surveys to locate trees causing visibility issues for motorists and pedestrians

Community desires, values & concerns

Background

The desires, attitudes, and perceptions of stakeholders and decision-makers can have a large impact on this plan. These potential issues were developed from the results of a 2015 urban forestry survey of Forest Grove residents.

Forest Grove resident concerns/issues include:

- Where to find information on proper tree care
- Cost of planting trees
- Cost of maintaining trees (includes cost of disposing of green material)
- Safety concerns for overhead trees hazards when visiting parks
- Safety concerns when living near large trees

Goals/desired condition

- Adequate information on proper tree care
- Safe environment when recreating or living (includes motorists) near trees
- Cost efficient system for recycling or dispose of green waste and wood from pruning and removals
- Adequate information about tree related ordinances

Strategic Plan

The strategic plan summarizes the issues, trends, goals, objectives, and actions under appropriate topic headings, e.g. Tree Resources, Management, and Community.

Issues and needs categories

- ***Tree needs***
Needs related to the tree resource itself and processes that maintain the urban forest.
 - ***Street trees***
 - ***Facility trees***
 - ***Parking lot trees***
 - ***Register/heritage tree program***
 - ***Park and open space trees***
 - ***Hazard trees***
- ***Management needs***
Needs of the urban forest program and the people involved with the short- and long-term care and maintenance of the urban forest.
- ***Community needs***
Needs related to how the public perceives and interacts with the urban forest and the urban forest management program.

Goals

The goals in this plan are the general outcomes that are sought. Goals may address some or all of the needs identified. They can also address other concerns or desires of the stakeholders.

Objectives

Objectives provide more specificity by breaking goals into the components that make up each goal. Like goals, objectives are desired outcomes, but are more specific and limited in scope.

Actions

An action is something that is done to achieve an outcome - e.g. plant trees, conduct workshops, or enforce regulations.

Tree needs

Issue 1: *Wrong tree in the wrong location rather than right tree in the right location*

Goal

Have minimal conflict between trees and utility lines, buildings, etc.

Objective

Reduce conflicts and improve tree health

Actions

- Expand future street tree surveys to include assessment of whether a tree is in an appropriate location (locates potential sites for correction).
- Review street tree planting list for possible conflicts.
- Increase public awareness about street tree program through expanded information placed on City website (requirement for tree removal permit and recommended list of street trees).
- Review list of recommendations in 2014 parks vegetation survey for specific remedial actions (tree replacement, removal).

Issue 2: *Lack of diversity in Oregon white oak size and age class (Not enough young oaks)*

Goal

Increase the abundance and survival of young white oaks as an element of the urban forest in Forest Grove.

Objective

Continuation of the Oregon white oak as an iconic tree in Forest Grove.

Actions

- Utilize 2014 parks vegetation survey to locate planting sites (open non-irrigated sites).
- Increase public awareness about the health risk to white oaks from watering in the summer.

Issue 3: *Insufficient tree canopy within the city limits*

Goal

Strive to achieve an Increase in tree canopy from 23% to 30% by 2025 and 40% by 2035

Objective

Increase public and private community benefits of trees by increasing tree canopy.

Actions

- Seek funding opportunities to increase tree planting throughout the community
- Establish partnerships between the Community Forestry Commission and other agencies and organizations interested in planting trees in Forest Grove.

Street trees

Issue 1: *Reduce possible impact of disease affecting street trees*

Goal

Increasing street tree diversity and reduce the potential impact of tree diseases

Objective

Effective management of street trees

Actions

- The Community Forestry Commission in conjunction with appropriate City staff should develop street tree management plans for new subdivisions of the City. The management plans should address recommended tree species to plant in the neighborhood.
- Educate property owners about City policies regarding adjacent property owner responsibility for maintaining street trees.
- Prepare an estimate of cost to taxpayers if the City were to undertake complete responsibility for maintaining street trees. The estimate should address staffing levels and required expenditures. The analysis should address equity in terms of not all streets have street trees.
- Utilize grants to assess, plan, and implement tree removal and planting projects as needed.
- Develop risk/age/condition based mapping (GIS) of potential neighborhood needs.

Facility trees

Issue 1: *Educate property owners about proper care of facility trees*

Goal

Promote planting of facility trees and proper facility tree care including pruning

Objective

Improve condition of facility trees throughout the community.

Actions

- Educate property owners about proper tree care and pruning techniques
- Educate property owners about the economic benefits trees provide

Parking lot trees

Issue 1: *Many existing parking lots lack trees*

Goal

Increase tree canopy coverage in existing parking lots

Objective

Bring existing parking lots into compliance with current Development Code standards

Actions

- Educate property owners about the benefits of adding trees to parking lots including increasing pavement life cycle.
- Work with property owners to select appropriate parking lot trees to reduce ongoing maintenance costs
- Work with property owners regarding proper tree pruning techniques.

Register/Heritage Tree Program

Issue 1: *Lack of protection for tree groves*

Goal

Develop tree grove protection program

Objective

Improve the Register/Heritage tree program

Actions

- Improve standards and incentives for tree grove protection
- Preserve existing tree groves
- Create new tree groves

Issue 2: *Lack of recruitment of new register trees into the program*

Goal

Improve community outreach for Register Tree Program

Objective

Encourage property owners to nominate trees to include on the Register/Heritage Tree list

Actions

- Educate community about Register Tree Program and benefits of seeking Register Tree designation

- Implement a “Register Tree of the Year” recognition program

Park and open space trees

Issue 1: *Unfulfilled opportunities for new trees plantings in parks and open spaces*

Goal

Increase tree canopy within open space areas, and insuring “right tree in the right place”.

Objective

Promote trees as an important component of the City’s open space programs.

Action

- The Community Forestry Commission should work with the Parks and Recreation Commission to ensure tree canopy is considered as an integral part of community open space programs.
- Utilize the park vegetation inventory to locate potential opportunities.

Issue 2: *Lack of park specific tree management plans*

Goal

Have plans as needed.

Objective

Develop plans as needed.

Action

- Develop a tree management plan for Thatcher Park.

Management needs

Issue 1: *Survival of planted or maintained trees*

Goal

Have greater than 90 percent survival of planted/maintained trees.

Objective

Encourage proper tree planting and care practices to increase survival rate

Actions

- Update the tree planting standards used by City contractors.
- Develop pruning standards/practices

- Develop inspection schedule for maintenance of downtown street trees (checking metal grates, etc. near street tree boles.)
- Develop/review ordinances/standards for underground utility or other work affecting tree roots.

Issue 2: *Coordination between City departments when working near trees*

Goal

Minimize duplication of efforts and ensure proper techniques to reduce harmful impacts to trees resulting from construction activities.

Objective

Ensure survival of trees near construction areas.

Actions

- Identify lead person or department for coordination on tree related issues.
- Consolidate tree planting and management efforts among City departments
- Designate a lead City staff person to coordinate urban forest management efforts.

Issue 3: *Affordability of City managed trees (maintenance cost)*

Goal

Have an urban forest that is sustainable with a minimal level of investment.

Objective

Reduce costs associated with tree care.

Action

- Review program for activities that have a low cost/benefit ratio.

Issue 4: *Funding*

Goal

Secure ongoing and dedicated funding for the urban forest management program.

Objective

Identify and utilize potential funding sources for urban forestry related programs.

Actions

- Identify possible funding mechanisms to support the urban forest management program
- Seek grant opportunities to implement urban forestry initiatives

- Seek dedicated funding through the City budget process for tree planting efforts by documenting tree related benefits to street preservation, surface water management, and environmental sustainability.

Community needs

Issue 1: *Availability of information related to proper tree care, or tree ordinances*

Goal

Have tree related information readily available through a variety of media.

Objective

Improve the availability of tree related information.

Actions

- Post Forest Grove tree removal permit/ordinance on City website
- Post tree planting and pruning information on City website. (or link to OSU Extension website)
- Post recommended street tree planting list.
- Continue CFC sponsored pruning and planting workshops
- Evaluate need for a City urban forester or arborist

Issue 2: *Affordability of tree maintenance as trees grow larger and older*

Goal

Having an affordable means of managing mature landscaping.

Objective

Mitigate property owner costs associated with retaining large, mature trees

Actions

- Evaluate possibility of expanding street tree leaf pick up to also include leaves/trimmings from other trees (especially in light of possible elimination of backyard burning).
- Increase awareness of urban tree salvagers that may offset cost of total tree removal.
- Establish grant or assistance program for low income home owners for tree maintenance activities.

Issue 3: *Effectiveness of the fall leaf pick-up program*

Goal

Assist property owners with removal of fall leaves.

Objective

Encourage the proper removal of fall leaves. Determine effectiveness of current fall leaf pick-up program.

Action

- Encourage volunteer opportunities to assist property owners with removal of fall leaves, especially elderly property owners.
- Determine effectiveness of current fall leaf pick-up program, and develop alternative strategies if necessary.

Issue 4: *Safety of public while recreating, driving, or living near areas with trees***Goal**

Enhance safety to persons and property by identifying and mitigating potential tree hazards.

Objective

Identify potential tree hazards

Actions

- Develop and maintain criteria for what constitutes a tree hazard using the Tree Risk Assessment methodology available from the Pacific Northwest Chapter of the International Society of Arboriculture.
- Prior to acquisition of land for parks or public places conduct a tree hazard assessment
- Develop and implement a formal emergency response system for tree hazards on City streets, City parks, and greenspaces.
- Utilize 2014 parks vegetation assessment to locate areas needing overhead hazards removed (dead or comprised branches over trails or in heavily used areas).
- Develop schedule to assess and remove hazards.
- Survey to identify potential safety issues to pedestrians, motorists, or cyclists from trees (low hanging branches blocking visibility of signs or crosswalks etc..)
- Develop a hazard tree identification and abatement program

Implementation plan

Funding is a critical component of successful implementation. The following section identifies current and potential sources of funding for sustaining the urban forest.

Urban Forest Funding Sources

Grants

Grants have been used by the Community Forestry Commission to fund inspections of trees on the Register of Significant Trees, street tree infill planting, publication of a tree of the month calendar and publication of a tour of trees brochure. Potential grant funding opportunities include:

- Forest Grove Community Enhancement Program
- Oregon Community Trees
- Alliance for Community Trees
- American Forests

Street Tree Fund

The City's Development Code requires all subdivisions and partitions to install street trees. To prevent trees from being damaged, street trees are not installed until construction is completed. As a result, each development is assessed for the cost of acquisition, installation and one year of maintenance for the street trees required for a project. The Street Tree Fund is the collection of these assessments.

Surface Water Management Fund

The Surface Water Management Fund provides resources for the City's annual fall leaf pick up program. Approximately 1,400 cubic yards of debris is removed from the street to minimize flooding.

Parks and Recreation Fund

A portion of the Parks and Recreation Fund is used to provide landscaping around City facilities and some non-park areas. In addition, this fund is used for street plantings and trimming trees for street clearance.

Light and Power Fund

The Light and Power Department funds two journeyman tree trimmers with responsibility for tree care near overhead power lines.

Proposed Implementation Strategy

- Develop standards and procedures for tree code enforcement
- Develop standards and procedures for tree protection related to public improvement projects and subdivision development
- Develop and maintain as part of the City's GIS and permit systems a publicly accessible inventory of protected trees
- Develop a hazard tree identification and abatement program
- Improve coordination among City departments related to the urban forestry program
- Identify and secure long term funding sources for urban forestry projects.
- Take advantage of the Community Forestry Commission area of the City's website as a way to distribute educational information about tree selection, care and permit requirements.
- Improve public outreach related to the benefits of the Register Tree program
- Develop site specific park/open space plans as needed.
- Assess effectiveness of current leaf/limb removal program.
- Develop an inventory (condition & opportunity) and mapping (GIS) of potential areas for street tree improvement projects.

Monitoring plan

Monitoring is key to the success of any planning effort. Monitoring ensures desired outcomes are met or to make changes if something isn't working well.

Data will be collected as resources allow. Such resources include volunteer efforts, availability of grant resources, and how often data provided by outside organizations is updated. Whenever possible, field inventories should be conducted during the summer months

Register of Historic and Significant Trees

Inventory trees listed on the Register of Historic and Significant Trees as resources permit. The purpose of the inventory is to confirm the trees presence and identify general condition.

Street tree

Inventory street trees to determine overall health and viability of individual species. This data will be used to help guide selection of tree species used for street tree planting projects.

Park trees

Monitor the ongoing condition of trees located in the City's parks

Tree canopy

Assess tree canopy every two to five years. To minimize costs, tree canopy assessment should be based on data provided by regional, state or federal agencies.

Available tools

The City is in the process of developing an enterprise GIS system that could be used to advance the City's efforts to manage the urban forest. Integrating urban forest data with the GIS database will promote data sharing across departments and the general public. Data collection efforts should be done in a way that facilitates use of GIS.

A variety of free software tools, developed by the USDA Forest Service is available, at no charge, to anyone interested in analyzing forest resources. This tool, called I-Tree allows for assessment of tree canopy coverage using Landsat imagery. I-Tree allows for linking urban forest management activities with environmental quality and community livability. I-Tree provides a way to analyze data to demonstrate the value of the urban forest and set priorities for more efficient decision making.

Appendices

- Appendix A: Forest Grove park 2014 vegetation assessment
- Appendix B: Technical guides and standards
- Appendix C: Chronological record of public involvement
- Appendix D: Public survey questions and summary of results
- Appendix E: Summary of other related planning documents
- Appendix F: Ordinances
- Appendix G: Additional related resources

Appendix A:

2014 Forest Grove parks vegetation assessment and recommendations

Park and Trail Property Addresses

B Street Trail	1910 16 th Ave
Bard Park	2921 22 nd Avenue, 22 nd & Kingwood
East Entrance	Yew St between Adair and Baseline
Forest Glen Park – lower	101 Gales Creek Road, south end of Lavina
Forest Glen Park – upper	3250 Forest Gale Drive, corner of Circle Crest
Forest Glen Trail	101 Gales Creek Rd to Ridge Point Dr. Parallels Gales Creek Rd over an existing sewer easement
Hazel Sills Park	1627 Willamina Avenue
Joseph Gale Park	3014 18 th Avenue, 18 th and Maple
Knox Ridge Park	2422 Strasburg Drive, corner of Strasburg Drive and Kalex Lane
Lincoln Park	2725 Main Street, Between Main and Sunset Drive North of Aquatic Center
North Entrance	Beale Rd.
Reuter Farm Green Space	480 Willamina
Rogers Park	2421 17 th Avenue, 18 th and Elm
Stites Park (future)	2324 26 th Ave
Talisman Park	1210 Willamina Avenue
Thatcher Park	750 David Hill Road

B Street Trail

Size	.73 miles (16 th av to highway 47)
Location	1910 16 th Ave
Facilities (general overview)	Trailhead, paved bike and walking trail, tables, benches, pedestrian bridge over Gales Creek
Irrigated?	Yes, at trailhead
General vegetation overview	Mowed grass and planted young trees at trailhead. Planted trees along some of the trail. Natural vegetation along Gales creek portion of the trail (big leaf maple, ash, white oak, red osier dogwood, cottonwood)
Overstory trees	Young planted ash, red oak, cedar, locust at trailhead. A few planted cottonwood, Douglas-fir, willow along the trail

Understory trees	Douglas-fir, ash.
Understory shrubs	Snowberry, ribes, willow, beaked hazel
Past vegetation work (planting, thinning, etc.)	A variety of shrubs and trees were planted by Metro (about 2011) in the Gales Creek floodplain area east of the north portion of the trail. Species planted include: cottonwood, willow, dogwood, etc. Trees and grass/shrubs (ash, red oak, locust, cedar, grass, shrubs?) planted at the time of establishment of the trailhead (2010.)
Existing maintenance needs/recommendations	<ul style="list-style-type: none"> • A few of the planted cedar along the fence at the trailhead are probably too close to the fence, and if so, it would be cheaper to replace them now instead of waiting until they are larger • There may be opportunities to plant additional cottonwood, willows, ash, Oregon white oak, Douglas-fir directly adjacent to the portion of the trail south of the Gales Creek bridge (will depend on how wide the right-of-way is)

Bard Park

Size	2.75 acres
Location	2921 22nd Avenue, 22 nd & Kingwood
Facilities (general overview)	Includes picnic shelter, tables play equipment, basketball court, paved trail
Irrigated?	Yes
General vegetation overview	Mowed and watered park grass with scattered mid-age planted trees
Overstory trees	Mid-age maples, Scotch pine, lodgepole/shore pine, sycamore, sequoia, and walnut
Understory trees	N/A
Understory shrubs	Mowed grass
Past vegetation work (planting, thinning, etc.)	No recent plantings
Existing maintenance needs/recommendations	<ul style="list-style-type: none"> • Continue lower crown pruning/lifting for access of mowing equipment • Monitoring for removal needs of dead branches in crown

East Entrance

Size

Location	Yew St between Adair and Baseline
Facilities (general overview)	No recreational structures in park. Entry sign for City of Forest Grove (other entities listed on sign?? Didn't write this down). Doesn't appear to get much use, just drive by viewing, no parking except along road
Irrigated?	Yes
General vegetation overview	Watered and mowed area indicating entry point into Forest Grove, several different species of planted trees
Overstory trees	<p>Generally younger-mid age planted trees including, small clump of birch, several Oregon white oak (planted in an area that doesn't appear to be watered- good job!), sequoia, cedar, spruce, lodgepole pine, Douglas-fir, small ornamental Nyuzen Japan (sister city) town tree along east edge of site- very poor condition- much of the cambium rotted away</p> <p>Several areas along the north edge are too crowded and very close to the utility lines. Douglas-fir along north edge competing with a young white oak; the fir should be removed</p>
Understory trees	N/A
Understory shrubs	Watered/mowed grass, clumps of fescue in bark mulched area, dogwood, vine maple, Japanese maple
Past vegetation work (planting, thinning, etc.)	Plantings at establishment of area. Some general maintenance and pruning of lower branches has occurred
Existing maintenance needs/recommendations	<ul style="list-style-type: none">• Check birch for top die back (birch bore?)• Evaluate dense band of trees along south edge for thinning to reduce density• Opportunity to remove several fir that are competing with the white oak• Several trees (lodgepole pine, Douglas-fir) under the utility lines should be removed or pruned

Forest Glen Park – lower

Size	11 acres
Location	Gales Creek Road, south end of Lavina
Facilities (general overview)	Open space park with a paved and gravel trail around perimeter. Basketball court, tables, benches, and baseball field. Very little parking other than adjacent side streets.
Irrigated?	No
General vegetation overview	Mowed (infrequent) grass with a few remnant walnut trees and large white oaks along park edge.
Overstory trees	A few walnut and white oak.
Understory trees	N/A
Understory shrubs	Mowed grass
Past vegetation work (planting, thinning, etc.)	None
Existing maintenance needs/recommendations	<ul style="list-style-type: none">• Evaluate dead/rotten tree branches overhanging the paved trail along west edge of park

Forest Glen Park – upper

Size	
Location	3250 Forest Gale Drive, corner of Circle Crest
Facilities (general overview)	Small neighborhood park with play structure.
Irrigated?	Yes
General vegetation overview	Mowed and watered grass with a few planted trees.
Overstory trees	Mid-age big leaf maple, white oak, Douglas-fir, Ohio buckeye, flowering pears, ginko, young white oak.
Understory trees	N/A
Understory shrubs	Mowed grass
Past vegetation work (planting, thinning, etc.)	Trees in the slump appear to have been planted
Existing maintenance needs/recommendations	<ul style="list-style-type: none">• Monitor slump along edge of park for movement• Monitor overstory trees along edge of park for overhead

hazard (dead/weak branches)

- Don't water the young white oak along west edge of the park

Forest Glen Trail

Size

Location	101 Gales Creek Rd to Ridge Point Dr. Parallels Gales Creek Rd over an existing sewer easement
Facilities (general overview)	Paved trail through a Steep wooded area along Gales creek road, which connects Ridge Point Drive and Lower Forest Glen Park. Also includes a low use gravel trail along a small drainage connecting Upper and Lower Forest Glen Park.
Irrigated?	No
General vegetation overview	Mixed species native trees
Overstory trees	Mature overstory of Douglas-fir, Oregon white oak, big leaf maple, Oregon ash. A few alder in the drainage bottom. Several dead trees and dead branches adjacent to, and hanging over the paved trail.
Understory trees	Bigleaf maple, cherry
Understory shrubs	Snowberry, service berry, beaked hazel, ocean spray, poison oak, black berry, ivy, Oregon grape.
Past vegetation work (planting, thinning, etc.)	The area along the lower portion of the drainage was planted (ponderosa pine, madrone, white oak, thimble berry, others.) in 2014 by SOLVE and Clean Water Services.
Existing maintenance needs/recommendations	<ul style="list-style-type: none">• Evaluate overstory along trail for hazard trees• Remove dead branches hanging over the trail, including several partially decayed large oak branches directly over the trail (eastern portion of the trail on the knob along the edge of Lower Forest Glen park• Continue spraying poison oak directly adjacent to trail• Blackberry spraying?• Ivy removal?• Opportunity for wood placement in drainage bottom to stop down-cutting• Opportunity to plant several white oak near the small grove of mature white oak along the eastern portion of the trail

Hazel Sills Park

Size	.5 acres
Location	1627 Willamina Avenue
Facilities (general overview)	Small neighborhood park. Play equipment.
Irrigated?	Yes
General vegetation overview	Mowed grass with a few recently planted trees
Overstory trees	Young ponderosa pine, maple, cedar
Understory trees	N/A
Understory shrubs	Mowed grass
Past vegetation work (planting, thinning, etc.)	Removal of existing overstory Douglas-fir, and planting of new trees
Existing maintenance needs/recommendations	<ul style="list-style-type: none">• Pruning and shaping of young trees to facilitate mowing.

Joseph Gale Park

Size	3.6 acres
Location	3014 - 18 th Avenue, 18th and Maple
Facilities (general overview)	Developed park adjacent to Joseph Gale school. Includes play structures, ball fields, horseshoe pits, picnic tables, bathroom.
Irrigated?	Yes
General vegetation overview	Mowed grass with medium sized scattered trees
Overstory trees	Silver maples, sweetgum, spruce, Norway maple, lodgepole, sequoia, flowering plum, birch
Understory trees	N/A
Understory shrubs	Mowed grass
Past vegetation work (planting, thinning, etc.)	
Existing maintenance needs/recommendations	<ul style="list-style-type: none">• Crown cleaning of dead branches (especially in the silver maples)

- Continued pruning of lower branches to facilitate mowing

Knox Ridge Park

Size	0.4 acres
Location	2422 Strasburg Drive, corner of Strasburg Drive and Kalex Lane
Facilities (general overview)	Small neighborhood park with play structures and picnic table
Irrigated?	Yes
General vegetation overview	Watered and mowed grass with a few young, planted trees
Overstory trees	Planted white cedar, maples, and flowering pears
Understory trees	N/A
Understory shrubs	Mowed grass
Past vegetation work (planting, thinning, etc.)	Tree planting
Existing maintenance needs/recommendations	<ul style="list-style-type: none"> • Pruning of lower branches • Evaluate cedar along edge of park for proximity to fence... looks too close to me. Evaluate for removal and re-planting of something else.

Lincoln Park

Size	18.9 acres (owned by city)
Location	2725 Main Street, Between Main and Sunset Drive North of Aquatic Center
Facilities (general overview)	Large City park with football/soccer/track field, toilet, skate board park, picnic tables and shelter structure. Paved walking trail around perimeter. Several parking lots.
Irrigated?	Yes
General vegetation overview	Scattered mid-age and mature trees with mowed and watered grass
Overstory trees	Cedar, lodgepole, scotch pine, red oak, ash, flowering pear, sycamore, basswood
Understory trees	N/A

Understory shrubs	Mowed grass
Past vegetation work (planting, thinning, etc.)	Tree planting
Existing maintenance needs/recommendations	<ul style="list-style-type: none"> Continued pruning of lower branches to facilitate mowing and walking on path Continued evaluation of overhead hazard (dead branches) Possible opportunities for plantings as the open lot (recently acquired) to the north and east gets developed

North Entrance

Size	Less than 1 acre
Location	Beale Rd.
Facilities (general overview)	Entrance sign for north entrance to Forest Grove. Several ponds, sidewalk, viewing structure, and table/bench.
Irrigated?	
General vegetation overview	Wetland vegetation surrounding the ponds
Overstory trees	Young planted willow, big leaf maple, white pine, Douglas-fir, ponderosa pine, lodgepole pine
Understory trees	N/A
Understory shrubs	Willow, dogwood
Past vegetation work (planting, thinning, etc.)	Tree/shrub planting
Existing maintenance needs/recommendations	<ul style="list-style-type: none"> Thin vegetation near the viewing area (trail/sidewalk and shelter) to improve views of the pond Needs a sign indicating the name of the park

Reuter Farm Green Space

Size	
Location	480 Willamina
Facilities (general overview)	Several picnic tables on the back side of the hill overlooking a pond
Irrigated?	No

General vegetation overview	Mature grove of Oregon white oak with a mowed grass understory
Overstory trees	Approximately twenty large mature white oak with an open, mowed (not watered) grass understory.
Understory trees	N/A
Understory shrubs	Mowed grass
Past vegetation work (planting, thinning, etc.)	Removal of several overstory oaks. Trimming of lower branches that appear to have been decayed.
Existing maintenance needs/recommendations	<ul style="list-style-type: none"> • Continue monitoring overstory oaks for overhead hazards (dead/decaying branches) • Possible opportunity to plant several white oaks along the edge of the park

Rogers Park

Size	3.6 acres
Location	2421 - 17 th Avenue, 18th and Elm
Facilities (general overview)	Heavily developed park. Includes play structures, tennis courts, picnic shelter and tables, portable toilets.
Irrigated?	Available but not used
General vegetation overview	Dominated by a grove of mature Oregon white oaks with a mowed grass understory
Overstory trees	Dominated by mature white oaks with a few Douglas-fir. Mature sweetgum trees along Elm Street. A few scattered yew, cedar, redwood, holly, Japanese maple.
Understory trees	Planted flowering plums, red oak, white oak, tulip tree
Understory shrubs	Mowed grass
Past vegetation work (planting, thinning, etc.)	Arbor Day tree plantings
Existing maintenance needs/recommendations	<ul style="list-style-type: none"> • Opportunities to plant a few white oaks • Monitor overhead hazards in oaks • Install interpretative sign about white oaks and why the City is not watering the park?

Stites Park (This area was not visited. Access uncertain.)

Size	9.9 acres
Location	2324 26 th Ave
Facilities (general overview)	
Irrigated?	
General vegetation overview	
Overstory trees	
Understory trees	
Understory shrubs	
Past vegetation work (planting, thinning, etc.)	
Existing maintenance needs/recommendations	

Talisman Park

Size	2.5 acres
Location	1210 Willamina Avenue
Facilities (general overview)	Play structure, picnic table and shelter. Paved path around the park and connecting to Gales Creek Road.
Irrigated?	Yes
General vegetation overview	Former wetland that has been filled in and planted with a variety of trees
Overstory trees	One large, open grown white oak is a focal point for this park. A variety of other tree species (oaks, maples, etc.) have been planted along the perimeter of the park. Each of the trees has a numbered post at the base that corresponds to a list of the species.
Understory trees	N/A
Understory shrubs	Mowed and watered grass.
Past vegetation work (planting, thinning, etc.)	Tree planting. Tree pruning workshop site

- Existing maintenance needs/recommendations**
- Continue pruning of lower tree branches to facilitate mowing
 - Evaluate for overhead hazards
 - Update and re-post the numbered key to the tree species in this park

Thatcher Park

Size	15.4 acres
Location	750 David Hill Road
Facilities (general overview)	Baseball/soccer fields, paved walking path, un-paved path through the forested portion of park, picnic table and shelter, toilet, dog park.
Irrigated?	Partial (ball fields)
General vegetation overview	The park includes two different areas. One is a 5-10 acres heavily forested area with a walking trail. The second area is the heavily developed park with mowed lawn, planted young trees, and developed facilities.
Overstory trees	Overstory of mature Douglas-fir (80-90 percent), with scattered big leaf maple, white oak, and cherry. The overstory appears to be fairly even aged (age??). Approximately 25-50 percent of the Douglas-fir are infected with heart rot (species??... The understory trees include big leaf maple, cherry, and holly. Shrub species include snowberry, blackberry, holly, elderberry, ivy, beaked hazel, willow, serviceberry.
Understory trees	Mowed and watered grass with planted oak), ash, Douglas-fir.
Understory shrubs	
Past vegetation work (planting, thinning, etc.)	Removal of hazard trees. Holly removal. Blackberry spraying. Removal of brush in riparian area along east side.
Existing maintenance needs/recommendations	<ul style="list-style-type: none"> • Continued evaluation of Douglas-fir heart rot and potential overhead hazards • Removal of existing dead branches hanging over the forested portion of the trail • Blackberry and ivy removal? • Opportunities to convert portions (mostly along the forest edge) to white oak through planting

Appendix B:

Technical guides and standards

1. Field Guide for Hazard-Tree Identification and Mitigation on Developed Sites in Oregon and Washington Forests. 2014 USDA Forest Service. Forest Health Protection. Pacific Northwest Region. Portland, OR. R6-NR-TP-021-2013
2. Dunster, J. 2009. Tree Risk Assessment in Urban Areas and The Urban/Rural Interface. Course Manual. Silverton, OT. Pacific Northwest Chapter, International Society of Arboriculture
3. Urban Tree Risk Management (A community guide to program design and implementation). USDA Forest Service. State and Private Forestry. Northeastern Area. NA-TP-03-03.
4. Urban Forestry Best Management Practices for Public Works Managers. Urban Forest Management. APWA press.

Appendix C:

Chronological record of public involvement

January 2014	Initiate project
January 2014	Draft outline following Urban Forest Planning Toolkit
Early 2014	Gather background data and produce first rough draft
Spring 2014	Inventory parks and open areas, list opportunities
Summer 2014	Outreach to public at farmers market
Fall 2014	Second and third draft
Fall 2014	Outreach to city commissions (parks, sustainability, CCI)
December 2014	Develop survey questions
January 2015	Refine survey questions with CCI commission
March 2015	Send out survey in March utility bills and post on-line
March 2015	Outreach to newspaper to produce article about plan and survey
April 2015	Review survey and use to modify draft plan
May 2015	Meet with city departments (parks, planning, public works) about tree management
June-July 2015	Revised draft of plan
July-August 2015	Outreach to public at farmers market
September 2015	Next draft of plan
2016	Review plan with public during Parks/Recreation master plan update public meeting
April 2016	Review with city and council
2016	Final draft
2016	Final plan recommendations to city council

Appendix D:

Public survey questions and summary of results



CFC Urban Forest Management Planning Survey

The Forest Grove Community Forestry Commission (CFC) is working on a plan to guide and manage trees within the City. Trees provide a variety of important benefits in the urban environment. Without a vision and plan for the management of the urban forest as a whole, however, it is unlikely to thrive and provide the benefits that the community desires. We will look at **what we have now** for tree resources, determine **what we want** in the future, and make recommendations for **how we get there**. More details of the scope of the project can be found online at [Community Forestry Commission](#).

Trees included in an urban forest management plan may include the following:

- o Street trees (those directly adjacent to streets)
- o Heritage/special trees (those with special status)
- o Facility trees (those near public buildings)
- o Parking lot trees
- o Park trees
- o Open space trees (those in natural areas)

The Commission invites you to help develop the plan by answering the following questions. This survey is also available [online](#).

Questions 1-3 pertain to tree care in parks, trails, or open space areas. Please rank on a scale of 1 to 5 with (1) being "Very Satisfied" and (5) being "Very Dissatisfied".	Very Satis Bed	Satis Bed	Neither	Dissatis Bed	Very Dissatis Bed
	1	2	3	4	5
1. How satisfied are you with the quantity and quality of trees in parks, along trails, or in open space areas?					
2. How satisfied are you with the care of trees in parks, along trails, and/or in open space areas?					
3. How satisfied are you with pedestrian safety near large trees?					
Questions 4 –13 ask how much you agree with a given statement regarding street trees, parking lot trees, register trees, and/or facility trees. Please rank on a scale of 1 to 5 with (1) being "Strongly Agree" and (5) being "Strongly Disagree".	Strongly Agree	Agree	Neither	Disa gree	Strongly Disa gree
	1	2	3	4	5
4. I am satisfied with the quantity and quality of street trees, parking lot trees, registry trees, or facility trees.					
5. I am satisfied with the care of street trees, parking lot trees, registry trees, or facility street trees.					
6. Trees positively contribute to the value of a home.					
7. More trees would be good for the City.					
8. I believe it would benefit the City if more resources were directed towards maintenance and protection of existing trees.					
9. The City should require the protection of old, healthy trees on sites that are being developed.					
10. The City should require the planting of new trees on sites that are being developed.					
11. The condition of the urban forest has improved over the last 10 years.					
12. The large oak trees in town are an important cultural element in Forest Grove.					
13. I am satisfied with the pruning of street trees for utility lines.					

Questions 14 – 18 ask about your awareness of City policy and programs relating to urban trees. Please rank on a scale of 1 to 3 with (1) being fully aware and (3) being unaware.	Fully Aware	Some what Aware	Unaware
	1	2	3
14. I have adequate information about how to maintain trees on my property.			
15. Property owners are responsible for care and maintenance of street trees.			
16. Property owners need to have a free City permit before pruning or removing street trees.			
17. A replacement street tree may need to be planted if one is removed.			
18. Forest Grove has a tree registry/significant tree program.			

The following questions encourage further comments about Forest Grove’s Urban Forest.

19. What could be done to improve the quantity or quality of trees in Forest Grove?

20. What are other issues related to trees?

21. What is the best method(s) to get you additional information about trees (website link, newsletter, email, other)?

Please return this survey with your utility bill payment or in person to Forest Grove City Hall, Community Development Department, at 1924 Council Street or by mail at PO Box 326, Forest Grove, OR, 97116. You may also email to driordan@forestgrove-or.gov. THANK YOU!

Please consider becoming a member of the Community Forestry Commission. Applications available online at www.forestgrove-or.gov/b&c or at City Hall.

Did you know that . . .

- The top three most abundant trees are Japanese maple (*Acer palmatum*), Japanese flowering cherry (*Prunus serrulata*), and Norway maple (*Acer platanoides*).
- The total replacement value for Forest Grove’s street trees is estimated at \$148,273,010.
- Street trees remove nearly 8 million pounds of air pollutants per year, a service worth more than \$72 thousand.
- Forest Grove residents save close to \$69,000 per year in avoided energy costs from the shading and wind calming effects of street trees.
- Street trees provide more than \$1.2 million in property resale value per year.

Survey Results

RESPONSE %					
	1	2	3	4	5
	Very Satisfied	Satisfied	Neither	Dissatisfied	Very Dissatisfied
Q1	26.29%	52.99%	11.16%	7.97%	1.59%
Q2	26.10%	53.41%	13.65%	4.42%	2.41%
Q3	28.23%	49.60%	13.71%	6.05%	2.42%
	Strongly Agree	Agree	Neither	Disagree	Strongly Disagree
Q4	19.28%	48.19%	16.47%	14.46%	1.61%
Q5	21.58%	45.23%	18.26%	12.86%	2.07%
Q6	64.68%	24.60%	5.56%	2.78%	2.38%
Q7	50.40%	21.77%	16.13%	6.45%	5.24%
Q8	33.60%	38.40%	17.60%	6.40%	4.00%
Q9	56.75%	25.40%	9.92%	2.78%	5.16%
Q10	54.98%	26.69%	5.98%	5.58%	6.77%
Q11	9.29%	28.76%	49.12%	10.62%	2.21%
Q12	56.52%	28.85%	8.70%	3.56%	2.37%
Q13	25.59%	42.91%	17.32%	9.06%	5.12%
	Fully Aware	Somewhat Aware	Unaware		
Q14	31.20%	42.80%	26.00%		
Q15	38.31%	31.45%	30.24%		
Q16	31.30%	23.98%	44.72%		
Q17	34.55%	26.02%	39.43%		
Q18	22.95%	22.95%	54.10%		

Appendix E:

Summary of other related planning documents

Forest Grove:

- Parks and recreation master plan
- Urban renewal plans
- Community sustainability element of the comprehensive plan
- Design and landscaping guidelines and development standards (Public Works Specifications)

Other:

- Regional Urban Forestry Assessment and Evaluation for the Portland-Vancouver Metro Area. Portland State University. June 2009.
- Regional Conservation Strategy for the Greater Portland-Vancouver Region. The Intertwine Alliance 2012.
- Greenspaces Policy Advisory Committee. Vision, Outcomes, objectives and means. Metro. 2005.
- Protecting and Developing the Urban Tree Canopy. The United States Conference of Mayors. 2006.
- The Road to a Thoughtful Street tree Master Plan. University of Minnesota. 2008.
- Urban Forest Management Planning Toolkit. USDA Forest service.

Appendix F:

Ordinances

Forest Grove Development Code

(www.forestgrove-or.gov/city-hall/planning-division/community-development-planning-zoning-information.html)

- Forest Grove Development Code Article 5
 - Tree Protection
- Forest Grove Development Code Article 8
 - Landscaping, Screening and Buffering (Parking Lot Trees)

Forest Grove City Code

(www.forestgrove-or.gov/city-hall/city-manager/community-development-planning-city-code.html)

- Municipal Code Chapter 5
 - Trees and Plants
- Municipal Code Chapter 9
 - Boards and Commissions (Community Forestry Commission)

Appendix G:

Additional related resources

Additional related resources available on the Community Forestry Commission portion of the City of Forest Grove's website (forestgrove-or.gov/city-hall/citizen-boards-commissions/citizen-bac-community-forestry-commission.html).

- 2011 Forest Grove street tree inventory and assessment
- Suggested street tree list
- Register of significant trees
- Tree trimming information
- Tree pruning or removal permit (for street trees or historic/significant trees only)