CITY OF GRESHAM

ADOPTED JULY 19, 2011

URBAN FORESTRY MANAGEMENT PLAN

"Trees are one of the most important amenities associated with any type of project, whether it be industrial, retail or residential, that you can have in a community."

– Gresham resident Fred Bruning

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VISION

Gresham's trees are recognized as integral to the quality of the City's urban character and natural environments. A healthy urban forest remains a longstanding community priority and will be thoughtfully managed in a way to maximize a range of public benefits including a thriving ecosystem, a vibrant economy and a livable community.

Urban Forestry Subcommittee - 2010

Introduction

The Gresham Urban Forestry Management Plan (UFMP) is the City's first comprehensive, sustainable and integrated approach to management of trees in Gresham.

Gresham is a place where trees have long formed the community's identity. The area has evolved from a predevelopment landscape of forested buttes and agricultural fields to the community it is today: a place characterized by both tree-lined streets and largely tree-less neighborhoods.

The benefits of trees in the urban environment are well-documented and clear, ranging from reduced energy consumption and lower crime to increased property values, flood mitigation and improved health and wellness.

Trees provide a connection to nature that can be hard to find in urban centers. They considerably reduce the cost of delivering clean air and water, stormwater retention and other municipal services. They also yield economic benefits: For example, a study done in Vancouver, Washington indicates that for every $1 spent on a community's urban forestry program, that community receives about $2.50 in tree benefits.

Street trees, forested buttes, trees in parks and other natural areas, and trees on private property collectively form Gresham's urban forest. The urban forest is a reflection of the city's health, well-being and livability.

Many residents and business owners who live and work in Gresham enjoy the iconic backdrop of forested buttes. However, some neighborhoods are more treed than others, residents complain when neighbors remove trees on their property, property owners struggle with the consequences of not planting the right tree in the right place and street corridors that connect business districts often lack trees.

Trees in urban and natural settings require varying levels of management. Without ongoing maintenance, Gresham's publicly owned trees are not as healthy and vigorous as they could be. Consequently, trees grow slower, die faster and are much more susceptible to injuries and diseases requiring premature removal. Gresham is still a developing community. Management of trees must therefore also accommodate future development, including incentives and strategies to maximize the long-term tree canopy.

Urban forest management goals, such as increasing tree canopy, must be balanced with other urban priorities. Toward that end, the Urban Forestry Management Plan works to integrate management of Gresham's natural systems, tree resources, public infrastructure and urban development, considering both issues and opportunities.

Maple in full fall color.

URBAN FORESTRY GOALS

GOAL 1 - Create a High-Quality Urban Forest in Gresham

GOAL 2 - Establish Proactive Public Tree Maintenance and Management Practices

GOAL 3 - Promote Community Partnership and Education Opportunities for Urban Forestry

PURPOSE OF THE PLAN

A broad spectrum of community stakeholders, residents and City staff set out to create a long-range Urban Forestry Management Plan that is grounded in science, economics and current best management practices (BMPs).

The purpose of the UFMP is to improve and coordinate management and administration of the urban forest by developing a comprehensive, sustainable and integrated approach to tree management. This Plan, once adopted, would be implemented over a period of 20 years, and therefore must respond to the needs of both today and tomorrow.

Principle 6: Healthy trees make neighborhoods more livable.

URBAN FORESTRY GUIDING PRINCIPLES

The following principles were used as guidelines for the process and structure of the UFMP. These principles can also be used to shape future implementation of Gresham's Urban Forestry Management Plan. They are more fully described in the Chapter 1 Introduction and were developed in collaboration with the Urban Forestry Subcommittee, Natural Resources and Sustainability Committee, the general public and City staff.

Principle 1. Tree regulations should be easily understood by the public and implementable by City staff, and should be consistent with other City codes and practices.

Principle 2. The City should seek out and collaborate with tree partners throughout the community to complete Action Items.

Principle 3. An adaptive management approach should be taken with regard to the urban forest.

Principle 4. A long-term approach should be taken to plan for and maintain Gresham's trees.

Principle 5. The benefits of the urban forest should be used to inform and support other City planning goals, and the urban forest should be a recognized asset in Gresham's Community Development Plan.

Principle 6. Healthy trees make neighborhoods more livable.

Principle 7. Design standards should incorporate the philosophy: "Make the place right for trees and pick the right trees for the place."

Together, the vision and guiding principles provide the policy framework for the Urban Forestry Management Plan.

RECOMMENDATIONS AND IMPLEMENTATION OF THE PLAN

The Urban Forestry Management Plan provides a range of actions to develop a comprehensive, sustainable and integrated management approach for Gresham's urban forest. Chapter 6 on Goals, Policies and Action Items serves to guide plan implementation and ultimately provide a critical path towards achieving a healthy urban forest.

The Action Items listed below support or fulfill the three key Goals identified in this Plan. All actions were prioritized with input from the public, advisory committees and staff, and then organized as short-term and longer-term actions. Time frames for completion are not included since implementation is contingent upon availability of funding and staffing levels.

Short-term action items: to be implemented in the near term without adding resources.

Action 1: Simplify and consolidate tree codes, making them clearer to the public and implementable by City staff.

Action 2: Update the City's Street Tree List to reflect "Right Tree, Right Place" strategies and species diversity.

Action 3: Promote educational offerings and informational materials.

Action 4: Develop a process to establish meaningful tree-canopy coverage goals throughout the City, taking into account community desires, tree function and habitat needs/species diversity.

Action 5: Hold quarterly meetings between City department representatives and the Urban Forestry Subcommittee at City Hall. Connect with citizens by hosting a citywide celebration of Gresham's urban forest every two years, in addition to the annual Tree City USA celebration.

Longer-term action items: to be considered in the future as resources allow, and at the discretion of the Gresham City Council. These reflect best practices and community input.

Develop incentives for tree-planting and retention. Encourage the growth and retention of large-canopy trees within areas determined to be appropriate. Large-canopy trees – those with a high crown of foliage and significant shade-producing potential – have been shown to provide the greatest public benefit. Protect native trees (such as the Hogan Cedar) on public and private lands to enhance historical identity and wildlife habitat in the City. Property owners who plant or retain trees could potentially receive a discount on their monthly stormwater utility fee. Create a Tree Mitigation Plan Manual to provide clear and easy options for public and private development projects.

Enhance partnerships through expanded volunteer opportunities and community outreach. Partner with tree contractors to distribute informational materials. Work with the Urban Forestry Subcommittee to develop a prioritized list of urban forest enhancement projects and other outreach materials. Partner with service organizations such as Friends of Trees to plant street and open space trees. Define neighborhoods visually by working with residents to identify optimal tree types to be planted in public rights of way. Enhance public awareness of tree species by providing interpretive labeling at Gradin Sports Park arboretum, Center for the Arts Plaza, key pedestrian streets and other popular areas. Improve customer service with a Tree Hotline and easily accessible print and online materials answering the most frequently asked tree-related questions.

A walk in the arboretum.

Collect data. Inventory publicly owned trees. Conduct a tree-health assessment to identify trees that will survive Gresham's urban environment, strong east winds and winter weather conditions. Develop a methodology to assess the carbon offset from Gresham's trees, and calculate the economic benefit of those trees in Gresham. This and other data could be presented in a "State of Gresham's Urban Forest" report, to be updated every five years.

Coordinate City policies and operations and boost the City's arborist-related capabilities. Provide technical arborist expertise for development and tree-removal permit review, responding quickly to inquiries about tree health and hazard issues. Work with City departments to make tree preservation and planting a priority in their plans and operations. Review the Public Works Standards and City Operations policies related to trees. Develop design phase and pre-construction coordination protocols to ensure the "Right Tree is installed in the Right Place." Develop and implement an invasive species control strategy citywide to safeguard the tree canopy. Establish new maintenance funding sources for public trees such as partnerships, grants, a Gresham Tree Foundation, Friends of the Arboretum and sustainable harvesting.

Design and construct tree amenities. Create prominent tree amenities in public parks, such as the Arboretum at Gradin Sports Park. Partner with schools, nurseries or other landowners to construct tree-species test plots. Consider development of an Arterial Street Tree Plan to enhance the visual appeal of the City's corridors linking shopping, employment and civic districts.

Invasive species, such as English ivy, can wreak havoc with native plants. This ivy grows so thick and heavy that it often topples trees. On the ground, it crowds out native plants, eliminating food and cover for wildlife.

SUMMARY AND CONCLUSION

Urban forests are a strategic public and private investment, vital to livability and the economy, and an important natural resource, as reflected in this plan. To thrive, Gresham's urban forest must remain a high community priority, attracting both public-private partnerships and the resources required to address our built environment and our natural environment. Proper consideration of trees during the planning and design phase of development will translate into lower future maintenance needs and costs. This Plan balances regulatory and aspirational goals, providing a series of actionable steps for the next two decades.

CHAPTER 1

INTRODUCTION

VISION

Gresham's trees are recognized as integral to the quality of the City's urban character and natural environments. A healthy urban forest remains a longstanding community priority and will be thoughtfully managed in a way to maximize a range of public benefits including a thriving ecosystem, a vibrant economy and a livable community.

Urban Forestry Subcommittee - 2010

Gresham is a place where trees have long formed the community's identity. Over time the area has evolved from a predevelopment landscape of forests and meadows, to agricultural fields and farms, and eventually to the urban area of today. Much of the forested buttes, creekside riparian woods and cottonwood forest along the Columbia River bottomlands remain today. Gresham became known as a place where trees could be grown commercially for export around the world. Gradually, tree nurseries and strawberry fields were developed into a thriving downtown, new residential subdivisions and industrial uses.

As urban areas such as Gresham develop, trees remain an important link to nature. The retaining of key species in the city's core, and in larger groves in parks and open spaces, has helped keep a historical link to Gresham's past alive. This link also exists in several residential neighborhoods and parks, as existing stands of nursery trees were retained and integrated into the design as street trees or park features, such as found in Red Sunset Park.

Hogan Cedars were first discovered as a natural variation along Johnson Creek in Gresham and were prized in the urban landscape for their narrow upright form and effectiveness when planted as a dense evergreen screen. Beginning in 1993, Significant Trees around the city were identified by citizens for protection on both public and private property, with almost 50 trees or groves currently identified.

As early as 1990, residents began to notice declines in the number, health and size of trees. The rapid growth of the city in the last decade of the 20th century and the first decade of the 21st resulted in a city of more than 100,000 residents. Not surprisingly, the areas of the most recent and intense development were the ones that quickly went from areas shaded by tall Douglas-firs, to areas with fewer and smaller trees.

Red Sunset Park. © Nancy J. Smith

Residents began to voice concerns to the City about trees being felled in their neighborhoods without a plan for replacement of their beneficial functions, and the City Council responded. In 2002, the Tree Removal Standards Task Force recommended that the City develop an Urban Forestry Master Plan. This led to the October 2004 adoption of Action Measure 19: Develop an Urban Forestry Management Master Plan and ultimately implement a citywide urban forestry management plan (City of Gresham Comprehensive Plan). In 2009, the Council authorized the hiring of staff to develop the City's first Urban Forestry Management Plan (UFMP) to evaluate the issues and provide a vision and a "road map" to arrive at the destination: a place where trees help create a community that is a desirable place to live, work and play. This document is the fulfillment of that initiative.

Above: Looking south from City Hall. Johnson Creek.

Right: Columbia View Park.

WHAT IS THE URBAN FOREST?

Urban Forestry is the study and management of a city's trees, consisting of those along streets and trails, within parks and natural areas, and on other public and private property.

An American Planning Association report defines urban forestry as *"a planned and programmatic approach to the development and maintenance of the urban forest, including all elements of green infrastructure within the community, in an effort to optimize the resulting benefits in social, environmental, public health, economic and aesthetic terms."* [1]

Gresham's urban forest consists of both public and private trees. These trees are located within specific urban environments that have particular physical characteristics, provide various benefits and serve different needs. The health and quality of trees on both public and private land depends on the knowledge, skills and involvement of the owners and managers.

[1] *Planning Advisory Service Report Number 555: Planning the Urban Forest: Ecology, Economy, and Community Development, James C. Schwab (American Planning Association, 2009), p. 3*

Public trees can be highly visible and valuable components of the urban forest. Public tree owners include the City, School Districts, Metro, and Multnomah County. Public trees are located in following areas of the city:

- Parks, public plazas and trails
- Natural areas and stream corridors in publicly owned open space
- Street medians
- Civic institutions such as schools, City Hall, and fire stations
- Vegetated public stormwater facilities such as ponds and wetlands

Although generally located within public street rights-of-way, like sidewalks, private property owners are the caretakers of trees located along the sides of streets.

About 70 percent of the Gresham urban forest is located on private property. Private property owners are the chief stewards of trees located on private lands in a variety of environments:

- Residential areas including both single-family and multifamily landscapes
- Commercial and industrial areas
- Parking lots
- Golf courses
- Along stream corridors on private property
- Privately owned undeveloped land

WHY IS IT IMPORTANT?

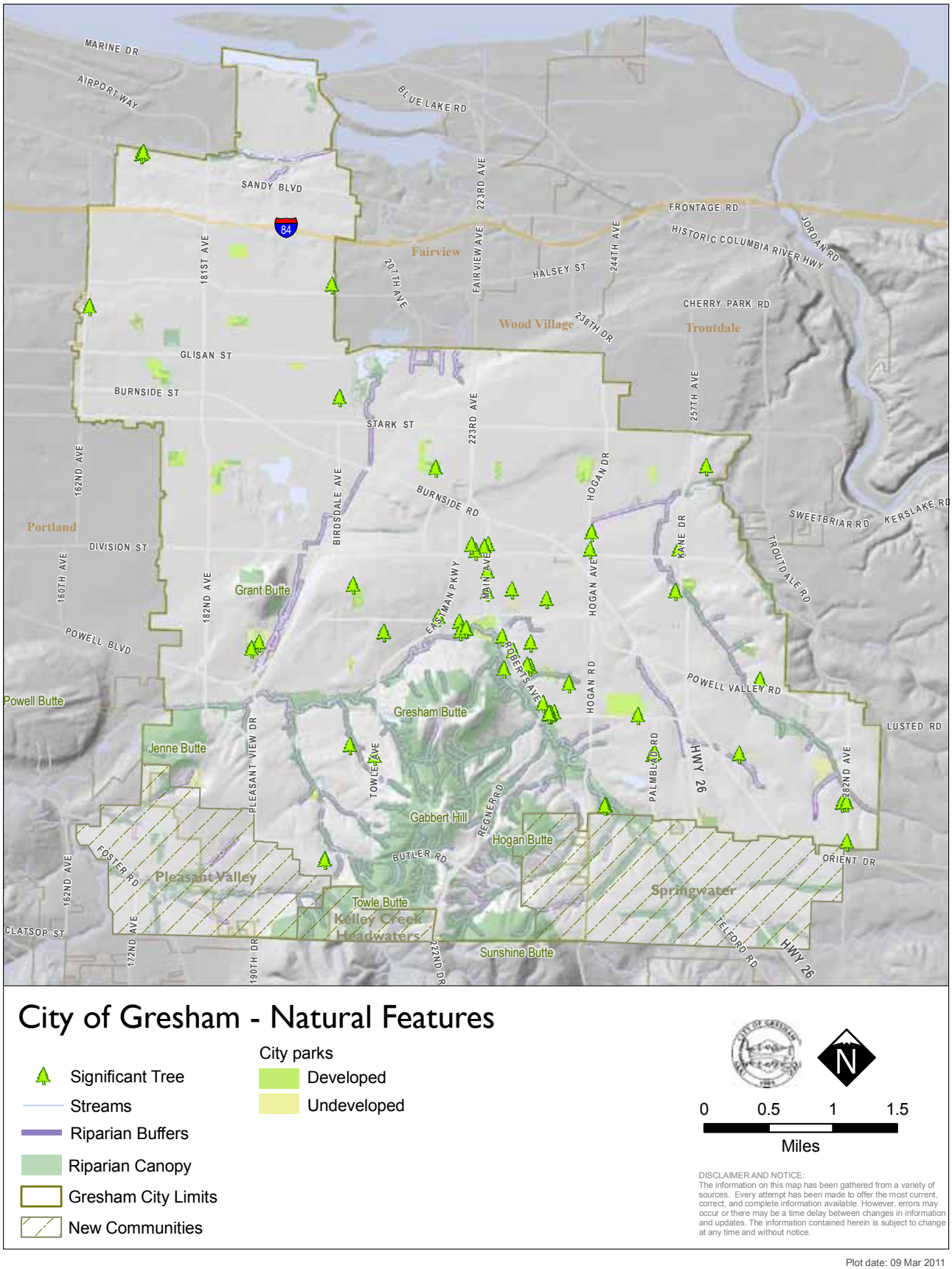
Trees affect the community and local economy in many ways. According to Dr. Robert Young, a nationally renowned expert from the University of Oregon, trees provide a range of public benefits; can make a considerable contribution to public service cost reductions; and are a sound investment in the delivery of municipal goods and services such as clean air and water, parks, recreation, tourism, energy conservation, stormwater retention and walkable streets.

The City of Gresham covers a land area of about 23 square miles and includes natural features that are important to the local community and to the region, such as Johnson Creek, Fairview Creek and the buttes, as shown in Map 1.

A resource of this size and scale requires careful management to ensure its preservation, restoration and enhancement. While Gresham has a long history of protecting the natural environment, the development of an Urban Forestry Management Plan is the City's most comprehensive approach to establishing long-term, proactive management of the entire urban forest.

Aerial view of Gresham's buttes, looking east to Mt. Hood.
© Bruce Forster

Map 1. City of Gresham Natural Features



City of Gresham - Natural Features

- Significant Tree
- Streams
- Riparian Buffers
- Riparian Canopy
- Gresham City Limits
- New Communities

City parks
- Developed
- Undeveloped

N

0 0.5 1 1.5

Miles

DISCLAIMER AND NOTICE:
The information on this map has been gathered from a variety of sources. Every attempt has been made to offer the most current, correct, and complete information available. However, errors may occur or there may be a time delay between changes in information and updates. The information contained herein is subject to change at any time and without notice.

Plot date: 09 Mar 2011

Source: City of Gresham, GIS, 2008.

Trees in urban and natural settings require different types of management. Urban forest management goals such as increasing tree canopy, adopting best management practices and providing educational opportunities must be balanced with other community priorities. For the sake of efficiency and cost-effectiveness, the Urban Forestry Management Plan attempts to integrate management of the many issues and opportunities presented by Gresham's natural systems, tree resources, public infrastructure and urban development.

An improved urban forest will increase property values and help the city attract and retain residents and businesses. The overall wealth, health and welfare of the community can be enhanced with an optimized urban forest.

Purpose of the Plan

A broad spectrum of community stakeholders, residents and City staff set out to create a long-range Urban Forestry Management Plan (UFMP) that is grounded in science, economics and current best management practices.

The purpose of the UFMP is to improve and coordinate the management and administration of the Gresham urban forest by developing a comprehensive, sustainable and integrated approach to tree management. An improved urban forest will increase property values and help the city attract and retain residents and businesses. The overall wealth, health and welfare of the community can be enhanced with an optimized urban forest. This plan is envisioned to be implemented over a period of 20 years, and therefore must respond to the needs of both today and tomorrow.

The planning process included an extensive public involvement effort and comprehensive research and analysis of tree issues and opportunities.

URBAN FORESTRY GUIDING PRINCIPLES

The following principles were developed in collaboration with City Council, the Urban Forestry Subcommittee, Natural Resources and Sustainability Committee, the public and City staff. They were used as guidelines for the process and structure of the Urban Forestry Management Plan, and can also be used for future implementation of the Plan.

Principle 1. Tree regulations should be easily understood by the public and implementable by City Staff, and should be consistent with other City codes and practices.

Principle 2. The City should seek out and collaborate with tree partners throughout the community to complete action items. These partners could include: residents, business owners, the nursery and tree industry, watershed councils, neighborhood associations, developers, schools, nonprofits (Friends of Trees), adjacent municipalities and other stakeholders.

Principle 3. An adaptive management approach, where resource managers can incorporate new findings into best practices, should be taken with regard to the urban forest.

Principle 4. A long-term approach should be taken to planning and maintaining Gresham's trees.

Principle 5. The benefits of the urban forest should be used to inform and support other City planning goals, and the urban forest should be a recognized asset in Gresham's Community Development Plan. Other City planning goals may include:

- Defining a sense of place
- Promoting aesthetics
- Creating walkable neighborhoods
- Improving community health
- Improving traffic safety
- Advancing air, water and conservation goals
- Attracting and retaining businesses

Principle 6. Healthy trees make neighborhoods more livable by creating quality streetscapes, neighborhoods and parks; by softening the built environment; and fostering safer and more sociable neighborhoods.

Principle 7. Design standards should incorporate the philosophy "Make the place right for trees and pick the right trees for the place."

Together, the vision and guiding principles provide the policy framework for the Urban Forestry Management Plan.

Principle 5: City planning goals.

Top to bottom: Snow blankets trees. Flowering trees enhance a sidewalk. Trees create a walkable downtown. Bella Vista park.

CHAPTER 2

HISTORICAL BACKGROUND

GRESHAM'S TREES: THE EARLY YEARS

Gresham's Historically Forested Landscape

Historically, Gresham was dominated by conifer forests that provided habitat for bear, wolves, cougar, deer, elk, bald eagles and many other species. Prior to the early 1850s, the Gresham area was virgin, fir-covered wilderness and the land consisted of many small creeks. The largest of those creeks, once called Panther Gulch, is well known today as Johnson Creek. [1]

Pre-Settlement

Sketch by Alfred A. Agate on Wilkes Expedition, 1841.

The first documented inhabitants of the Gresham area were local bands of the Kalapuya Native tribe. The land was abundant with natural resources and the indigenous tribes subsisted primarily on fish, game animals, camas root, fern and local berries. Approximately 3,500 years ago, the Kalapuya began managing the forests of the Willamette Valley using fire to maintain open tall grass prairie areas for game and edible plants such as camas. [2]

Early Settlement

When the first white settlers arrived in the Gresham area they found most of it covered in a thick forest primarily made up of Douglas-fir and cedar trees. Some of the trees were noted to be from 6 to 10 feet in diameter. In between sections of forest were flat grasslands dotted with occasional Oregon white oaks.

Early Gresham

In the mid-1800s, the current site of Gresham was known as Powell's Valley, named after The Powells: Dr. John P. Powell, Jackson Powell and James Powell. [3] They settled in what we know today as the historic downtown core of Gresham. Other early developers of business and agriculture in Gresham included the Lewis C. and Samuel W. Metzger families. Early settlers cleared the thick wooded areas to build cabins and schools and to establish trails. The grassland areas were the first sections of land to be claimed and settled with buildings and farms. Once the grassland areas became scarce, forestlands were then claimed, cleared and settled. Later, people came primarily for the trees and their associated profits from timber. Subsequently, people often settled on the cleared land.

In 1884, this rich agricultural area was named Gresham after Walter Quinton Gresham, the United States Postmaster General. Gresham was incorporated as a municipality in 1905 with a population of 365. [4]

1 Gresham . . the friendly city. Howard Archer published for the Gresham Historical Society, 1967.

2 The Kalapuya People: Stewards of a Rich Land and Culture. Sonja Gray, 2008. Accessed via www.washingtoncountymuseum.org/localhistory/kalapuya.php website on November 19, 2010.

3 Gresham . . the friendly city. Howard Archer published for the Gresham Historical Society, 1967, p.8.

4 Accessed via www.pdxhistory.com/html/gresham.html website on November 1, 2010.

A Changing Community

Gresham would grow from a berry grower's town of 3,000 in the mid-1950s to become the fourth-largest city in Oregon, and by 2010 had 105,594 estimated residents. Over the past 150 years, Gresham's landscape has changed from a quiet berry-farming community to a busy city with a wide variety of neighborhoods and a growing civic and cultural center.

Above: Modern Gresham.

Today, some of the most-noticeable vestiges of the forestry and agricultural economy that remain are the upland open space buttes and treed riparian open spaces. These areas also contain the most-common native plant communities remaining within Gresham.

Gresham's population growth results not only from residential development, but also from land annexations into the City limits. Map 2 shows how, over time, land has been annexed into Gresham. Until the 1960s, few land annexations occurred, and the City was a 2-square-mile area as shown in the darkest area in the center of Map 2.

In the 1970s considerable annexation took place east and south as the new Urban Growth Boundary was established. In the 1980s the mid-Multnomah County Sewer annexations brought in much of west and north Gresham.

Additionally, in 1998 and 2004, the rural lands of Pleasant Valley, Springwater and Kelley Creek Headwaters south of Gresham were added to the Urban Growth Boundary. About 2,200 acres of these new community areas were added to the City's Urban Services Boundary (USB). Gresham is responsible for planning for future development within its USB and has adopted urbanization plans for these three areas. In the mid-2000s, 521 acres of Pleasant Valley were annexed into the City as well as some lands within Springwater.

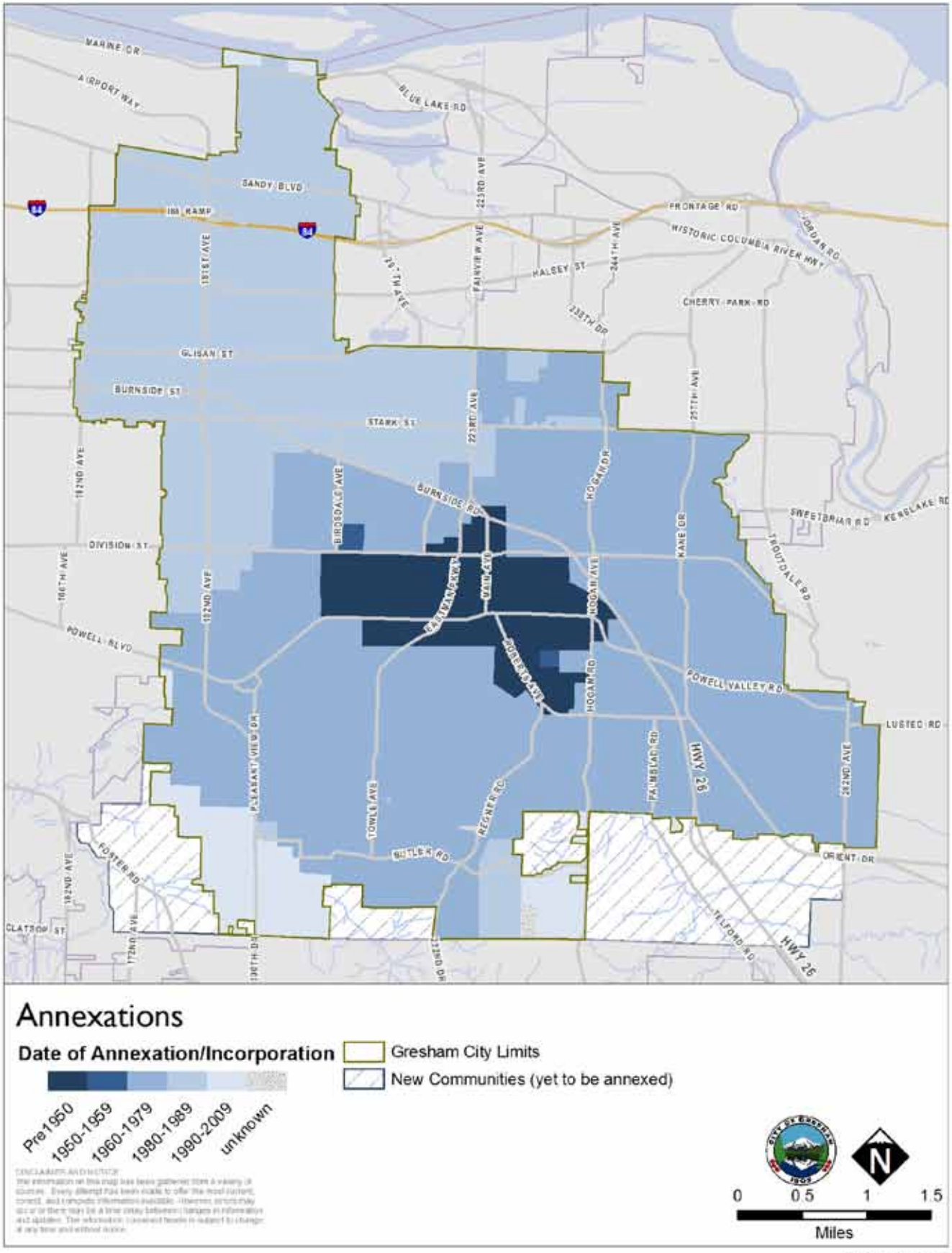
Similarly, Gresham's population has grown. The Census population count in 1980 was 33,005. This increased to 68,235 in 1990, to 80, 835 in 2000 and to 105,594 in 2010. Over the past 20 years Gresham's population has increased by 55 percent. Some of this population increase has been due to annexation but most has been due to new residents moving in as residential subdivisions and multifamily development have been constructed.

Gresham has a long history of public support for the protection of its diverse natural features, including wetlands, riparian areas, forested uplands and buttes. Gresham's buttes provide scenic views, important wildlife habitat and are treasured natural landmarks.

The upland forests on Gresham's buttes are all second-growth forests, grown after the old-growth conifers were logged. Dominant species now are Douglas-fir, red alder and bigleaf maple. Gresham's riparian forests and wetlands exist primarily along Johnson, Butler, Kelley and Fairview creeks. These riparian forest areas are dominated by deciduous trees, including black cottonwood, red alder and Oregon ash. Douglas-fir and western redcedars can also be found along these corridors. Upland habitat within Pleasant Valley includes deciduous and conifer forests. Some of the Springwater riparian reaches have relatively intact diverse, mature riparian growth. These forested areas and tree groves provide valuable wildlife habitat, recreation and aesthetic resources. However, there are other areas that lack high-quality riparian vegetation.

As Gresham's urban landscape has grown, many trees have been planted within the city's built and natural environment. Landscaping and tree plantings on private and public property have enhanced the aesthetic character of Gresham and have provided other benefits such as shade, wind blockage, wildlife habitat, buffering and screening between different types of land uses, carbon sequestration, cleaner air and stormwater run-off reduction.

Map 2. Gresham Annexations



Source: City of Gresham, 2010.

Urban Forestry Management Timeline

Over time, Gresham's elected officials and residents have been actively involved in protection and management of trees and forested parklands. Rapid growth in the 1980s accelerated efforts to preserve Gresham's urban forest. The following highlights how urban forestry management evolved over the past four decades in Gresham.

GRESHAM'S TREES: THE 1970s

The Community Organizes to Preserve Parkland and Trees

- **1970** - Gresham adopted and developed its first park, Main City Park, which is 21.6 acres of parkland adjacent to Johnson Creek. It formerly served as a landfill.

Soon afterward, the City of Gresham acquired additional parkland that would become Thom Park and Bella Vista Park. Acquisition of Main City and Thom Park protected property and tree resources along Johnson Creek. These parks were developed through donations, volunteer labor and service organizations. [5]

- **1970** - Local residents expressed an interest in protecting the Hogan Cedar tree, identified as unique to the Gresham area, and protested a possible new highway that would cut through a grove of more than 100 Hogan Cedars in the Ambleside area near Hogan Road (242nd).

Left: Hogan Cedar grove. Right: Red Sunset Park.

- **1974** - Students and teachers of West Gresham Grade School held a demonstration to protest the proposed removal of a large Bigleaf maple in the public right-of-way along Powell Boulevard, which was an Oregon State Highway.

GRESHAM'S TREES: THE 1980s

Gresham's Population Greatly Expands and Tree Provisions Emerge

- **1980** - The Gresham City Council adopted the Gresham Community Development Plan. In the Plan, Gresham Butte, Jenne Butte and Grant Butte are identified as visual and scenic resources that serve as a backdrop to the community. It was also at this time that new code language was developed:[6]

- Requiring street trees for new subdivisions
- Requiring parking lot planter strips with trees
- Including trees within buffer requirements

During this same era City policy was adopted to protect Hogan Cedar trees and encourage protection of the 30-acre Hogan Cedars stand at "Ambleside"; to require Design Review approval for removal of Hogan Cedars; and to commit the City to seeking out other ecologically or scientifically significant areas.

[5] Historical Reconstruction of the Gresham Area Emphasizing Vegetation and Tree Protection. Debbie Leek, College Student Research Paper, 2004.

[6] Leek, 2004.

GRESHAM'S TREES: THE 1990s

Buttes and Significant Trees are Protected and Tree Committees Form

- **1990** - The City Council recognized the importance of trees to the well-being of the community. New code language was adopted creating a process to protect Gresham's "Significant Trees."

Significant Trees are those that are recognized by the City, with the approval of the property owner, as trees of significance to the city. The significance may be related to a historic event, uniqueness of shape or species, location, age or functionality.

- **1990** - Additional tree regulations were adopted in the Gresham Development Code, including requirements for Significant Trees, development review, design adjustments, tree removal, education and civil penalties.

This was in response to community concerns about clear-cutting in advance of development or removing iconic trees. Provisions were developed: 1) for the Significant Tree process; 2) limiting the number of trees removable without a permit; and 3) protecting trees during the construction process.

- The Tree Preservation Council Advisory Committee was also established in 1990 with the purpose of making recommendations to the Planning Commission about upkeep of the Significant Tree List. It also advised the Commission and City Council on issues relating to preserving and protecting trees. The Committee was also charged with educating the public on these issues.

- **1990** - Gresham voters approved $10.3 million in general-obligation bonds to purchase park sites, wetlands, buttes, greenways and creek corridors for preservation. Significantly, this was the first open-space bond measure approved by any community in the Portland metropolitan area.

- **1993** - The first Significant Tree Inventory was adopted and since then, almost 50 trees have been recognized as historically important "heritage markers."

- **1998** - City Council passed a "Trees-First Policy" in response to plans to remove a 30-inch diameter tree for a road improvement project near Bella Vista Park. This policy addressed public trees that were 30 inches in diameter or larger, primarily located in a dedicated right-of-way.

This policy was drafted in response to concerns raised by residents and the City Council regarding the removal of large trees for the purpose of installing public utilities within public rights-of-way and easements.

Above: Trail in open space near Hogan Butte.

Left: Old trees, such as this one along the same trail, provide homes and food for wildlife, such as the pileated woodpecker.

Center: Pileated woodpeckers make long, large holes in search of food or a place to nest. *Dominic Sherony*

GRESHAM'S TREES: THE 21ST CENTURY

Tree Protection Goals, Recognition and Long-Range Plans Come Together

- **2001** - City Council formed the"Tree Removal Standards Task Force" to evaluate the City's tree protection/removal standards and criteria as well as recommend potential code and policy revisions related to tree removal. The Task Force included developers, realtors, nursery professionals, an urban forestry inspector, residents and City staff.

- **2001** - The Tree Preservation Committee began to sponsor the pruning of a Significant Tree as an educational community event.

- **2002** - The Tree Removal Standards Task Force presented short- and long-term tree protection goals to City Council. Short-term goals included: tree protection incentives, stronger deterrents to tree removal, clear and enforceable standards and the elimination of conflicts in City codes. Long-term goals included developing an Urban Forestry Management Master Plan that would:

- Create a baseline tree canopy inventory
- Create programs to ensure canopy replacement
- Protect public trees
- Encourage green infrastructure, which is defined as the green elements in a city that are composed of trees, wetlands, shrubs, grass and vegetation, that interact with other natural systems of air, water and soil.
- Develop funding for urban forestry management
- Allow the city to become a Tree City USA

- **2003** - A grant from the Oregon State Department of Forestry allowed the Tree Preservation Committee to sponsor the City's first Arbor Day celebration.

Arbor Day celebration.

- **2004** - The tree code was reorganized to make it more accessible, and provisions were added to increase enforcement. Tree planting and vegetative protection measures were upgraded with the adoption of the Stormwater Management Manual.

- **2004** - The City Council enacted a new goal, policies and action measures regarding trees and other vegetation as part of a larger project to update Volume 2 – Policies of the Gresham Community Development Plan.

The adopted Goal was:
Protect and enhance the environmental and aesthetic contribution of trees and other vegetation.

There were 11 policies and 22 action measures to support this goal, which were added with Ordinance No. 1592 and effective on 10/7/2004.

The Goal included Action Measure 19: Develop an Urban Forestry Management Master Plan and ultimately implement a citywide urban forestry management program, as well as Action Measure 21: Develop tree-mitigation regulations / standards to guide the City in assessing fees or compelling compensatory action resulting in violation of its tree protection standards.

- **2005** - The City adopted urbanization plans for the Pleasant Valley and Springwater communities, adding about 2,500 acres to the City's Urban Service Boundary area.

- **2006** - In 2006, the City and Metro jointly acquired privately owned property on Gabbert Hill as part of the passage of Metro's Natural Areas Program bond. Prior to the purchase, a 37-acre parcel had been slated for the 82-lot Darby Ridge subdivision.

- **2007** - Mayor Shane T. Bemis signed onto the U.S. Mayors Climate Protection Agreement, spearheading the City's effort to reduce greenhouse gas emissions to 7 percent below 1990 levels by 2012. Trees, which use up excess carbon dioxide in the atmosphere and turn it into life-giving oxygen, are an important part of this goal.

- **2007** - Persimmon Development Group sold 92 forested acres of private property in the East Buttes to the City as part of the 2006 Metro Natural Areas Program bond, with the idea that the trees be preserved as open space. [7] The land went for a reduced $5 million, though it had an approximate appraised value of $9 million.

- **2008** - People for Parks organized the East County Parks and Tree Summit, held at Gresham City Hall. The summit explored important links between urban parks, trees, public safety and economic vibrancy in East County.

- **2008** - The Council Work Plan called for the establishment of a full-time Natural Resources Planner dedicated to the development and implementation of an Urban Forestry Management Plan.

- **2008** - The City reconstituted its Tree Preservation Committee, renaming it the Urban Forestry Subcommittee (UFS) to the Natural Resources and Sustainability Council Advisory Committee (NRSC).

- **2008** - Gresham was recognized as a Tree City USA community by the National Arbor Day Foundation. The City earned this honor by making a special effort to preserve its street trees and manage the City's urban forest.

- **2009** - Gresham received recertification as a Tree City USA.

- **2009** - The City adopted an urbanization plan for Kelley Creek Headwaters, adding 220 acres to the City's Urban Services Boundary area.

- **2010** - City Council enacted new design standards for multifamily development that included additional tree standards for required landscaping and incentives for preserving existing regulated 'major trees' (over 12-inch diameter).

- **2010** - Urban Forestry Community Tree Forum participants proposed development of an educational arboretum at Gradin Community Sports Park. A landscaping plan was subsequently created with the potential for about 400 trees and a contractor was hired to plant the first phase of this plan as shown in Appendix A.

- **2010** - Gresham received recertification as a Tree City USA.

This plan provides an opportunity to build on past efforts in a more planned and programmatic way.

Left: Gresham is a recognized Tree City USA.

Above: Participants at the Tree Forum suggest ideas for the arboretum.

[7] Accessed via www.oregonmetro.gov website on November 4, 2010.

CHAPTER 3

BENEFITS OF THE URBAN FOREST

Trees, especially as part of a regional and urban "green infrastructure" system, help create a better quality of life. Specifically, the retention of trees in historically wooded areas and the establishment of trees along street corridors help to soften urban development, screen unattractive areas, block wind, cool streets and buildings, reduce stormwater run-off, filter noise and air pollution, and promote soil stability. This "green infrastructure" provides important ecological and social functions that translate into direct cost-savings to local governments and indirect stimulation of the local economy. [1]

Urban forests require comprehensive management to ensure healthy vegetation over time, and community-wide support is essential to supplement public management efforts. The goal of a sustainable urban forest is to maintain a maximum level of net economic, community and environmental benefits over time. In other words, long-term management of natural assets brings a higher return than their short-term elimination. [2]

[1] *Vancouver Urban Forestry Management Plan, 2007. p.7.*

[2] *Renton Urban and Community Forestry Development Plan, 2009, p. 13.*

[3] *According to a nation urban forestry expert in an excerpt from "Planting the Living City", Dr. Robert Young and Dr. Greg McPherson, 2010. (in review)*

[4] *International Society of Arboriculture, Pacific Northwest Chapter 76. Western Washington and Oregon community tree guide: benefits, costs, and strategic planting, Silverton, OR. McPherson, E.G., S.E. Maco, J.R. Simpson, P.J. Peper, Q. Xiao, A.M. VanDerZanden, and N. Bell, 2002.*

[5] *Alliance for Community Trees: The Value of Trees Fact Sheet located at www.actrees.org/files/resources/ValueofTrees_FactSheet.pdf*

[6] *Ibid.*

[7] *Landscape and Urban Planning. Trees in the city: valuing street trees in Portland. p. 77-83. Geoffrey H. Donnovan and D.T. Butry, 2010.*

ECONOMIC BENEFITS

Urban Forests are a Strategic Public and Private Investment

Healthy mature trees are a major economic asset for attracting and retaining residents, businesses and visitors. *Money spent on trees is a good investment and adds to the overall value of the community.* [3]

Many Pacific Northwest communities are quantifying the benefits of trees so they can evaluate how growing their tree canopy can stimulate the local economy. For instance, the City of Vancouver, Washington, calculates that for every dollar spent on tree planting and maintenance, the City receives a 250 percent return on investment in terms of total services provided by those trees at maturity. In other words, for every $1 spent on a community's urban forestry program, the community receives about $2.50 in tree benefits. [4]

Increased Property Values

- Trees add to property values and have been shown to increase the resale value of a home 3 to 7 percent. [5]
- Studies report that landscaping speeds the sale of a home by four to six weeks. [6]
- Street trees positively influence the price of neighboring houses within a 100-foot radius. [7]

Trees increase property values, Whitefish Bay, WI.

Maintenance of Economic Stability

- Trees also enhance commercial and retail district appeal, offering higher occupancy and rental/lease rates and contributing to community economic stability.
- Tree-lined streets create more enjoyable shopping experiences, bringing more dollars into the community.
  - A study conducted by the University of Washington showed that consumers were willing to pay 9 percent more in small cities and 12 percent more in large cities for equivalent goods and services in business districts having trees. [8]
- Money spent on trees can be a very good investment.
  - Trees reduce the necessary size and costs of conventional infrastructure, such as stormwater pipes and ponds, by soaking up and storing water run-off in their leaves, trunks and root systems.
  - Trees contribute to reduced energy usage (typically from reduced air conditioner use and wind buffering) by providing shade and screening. They also reduce air pollution by absorbing gaseous pollutants such as ozone, nitrogen oxides and sulfur dioxide, leading to reduced healthcare-related costs.
  - Trees increase the life of pavement along our public rights-of-way. Tree shade increases pavement life by 40 to 60 percent based on reduced daily heating and cooling (expansion/contraction). [9]
  - Trees help protect water quality by filtering run-off through their leaves and root systems and contribute to regional tourism that involves outdoor recreation.
- Urban forests help moderate global climate change and can be a cost-effective method of greenhouse gas reduction. Trees remove carbon dioxide from the atmosphere and then store it in the tree structure (roots, trunk, branches and leaves), in a process called *carbon sequestration*.
  - The cost of planting and maintaining trees to remove a metric ton of carbon can be as low as $5. [10]

Top: Tree-lined streets create a more attractive shopping experience along Main Street, downtown Gresham.

Bottom: Urban forests enhance property values.

[8] Main Street News, The Monthly Journal of the National Trust Main Street Center, Trees Mean Business: City Trees and the Retail Streetscape, Kathleen Wolf, Ph.D., University of Washington, No. 263 August 2009.

[9] Ibid, p. 9

[10] City of Gresham Inventory of Greenhouse Gas Emissions and Recommended Reduction Strategies Report, 2010.

COMMUNITY BENEFITS

Urban Forests are Vital to Livability

Trees are place-makers, vital to livability and give a community visual character, unity and identity. Trees preserve and enhance quality of life by offering a sense of place on a daily basis and the opportunity to embrace nature.

In 1990, the Gresham City Council recognized the importance of trees to community well-being by passing an ordinance to protect "significant trees." Since then, more than 50 trees have been adopted as trees of significance to the City. The Urban Forestry Management Plan is an opportunity to strengthen the community's past efforts to protect significant trees and Gresham's forested buttes, and to maintain Tree City USA status.

Improve Safety, Personal Health and Enjoyment

- Trees enhance public health and safety by providing a natural physical barrier along transportation corridors, reducing traffic speeds by narrowing drivers' field of vision, and creating walkable neighborhoods.
  - Trees and landscaping lower crime primarily by bringing people together outdoors, increasing surveillance and discouraging criminals. [11]
  - Trees placed at the street bring speeds down 7 to 8 mph. [12]
  - Trees provide a sense of enclosure, allowing pedestrians to feel fully separated from traffic.
  - Trees stabilize hillsides by supporting the soil with their root systems and breaking the fall of raindrops with their leaves.
  - Street trees create pedestrian-friendly streets, increasing the attractiveness of walking and active living.
- Trees are important to human health and help purify air by absorbing pollutants.
  - 100 trees remove 5 tons of carbon dioxide and up to 1,000 pounds of pollutants (including 400 pounds of ozone and 300 pounds of particulates) per year. [13]
- Trees can provide edible fruit, supporting the local food movement.
- Trees cool air by giving shade and releasing moisture.

Enhance the Aesthetic of the Community and its Neighborhoods

- Healthy mature trees establish the community's character and identity, which strengthen ties among neighbors.
- Trees increase the attractiveness of neighborhoods and build neighborhood pride. Regional neighborhood examples include: Irvington, Ladd's Addition, Laurelhurst, Eastmoreland, Lake Oswego's First Addition and the Villebois Community in Wilsonville.
- Trees soften severe building lines and large expanses of pavement, making urban environments more pleasant.
- Trees improve community appeal, attracting businesses, shoppers and homeowners.

Gresham's award-winning Yamhill Green Street project diverted sidewalks around existing trees.

11 Environment and Crime in the Inner City: Does Vegetation Reduce Crime? Environment and Behavior, 33(3), 343-367, Kuo, F.E., and Sullivan, W.C. (2001)

12 Glatting, Jackson, Walkable Communities, Inc.: Urban Street Trees: 22 Benefits and Specific Applications, Dan Burden, 2006.

13 McPherson et. al. 1999.

ENVIRONMENTAL BENEFITS

Urban Forests are an Important Natural Resource

A healthy urban forest contributes valuable ecosystem services for watershed protection, reducing flood potential and stream erosion while improving water quality. More trees are capable of removing a greater percentage of toxins from the air, thereby decreasing air pollution.

Protect Air and Water Quality, Reduce Flooding and Enhance Wildlife Habitat

- Trees improve ecological and watershed health.
- Trees reduce air pollution by absorbing gaseous pollutants such as ozone, nitrogen oxide and sulfur dioxide; they also filter particulate matter such as dust, ash, pollen and smoke – which contributes to improved public health.
- Trees reduce the amount of water-borne pollutants that reach streams and rivers.
  - 100 mature trees intercept about 250,000 gallons of rainwater per year, reducing stormwater run-off and providing clean water.
  - Street trees 32 feet tall can reduce stormwater run-off by 327 gallons per year.

- Trees provide habitat for birds and other wildlife, even in urban areas.

[14] *Center for Urban Horticulture, University of Washington, Kathleen Wolf, Ph.D., November 1998.*

[15] *Glatting Jackson, Walkable Communities, Inc.: Urban Street Trees: 22 Benefits and Specific Applications, Dan Burden, 2006.*

Energy Conservation

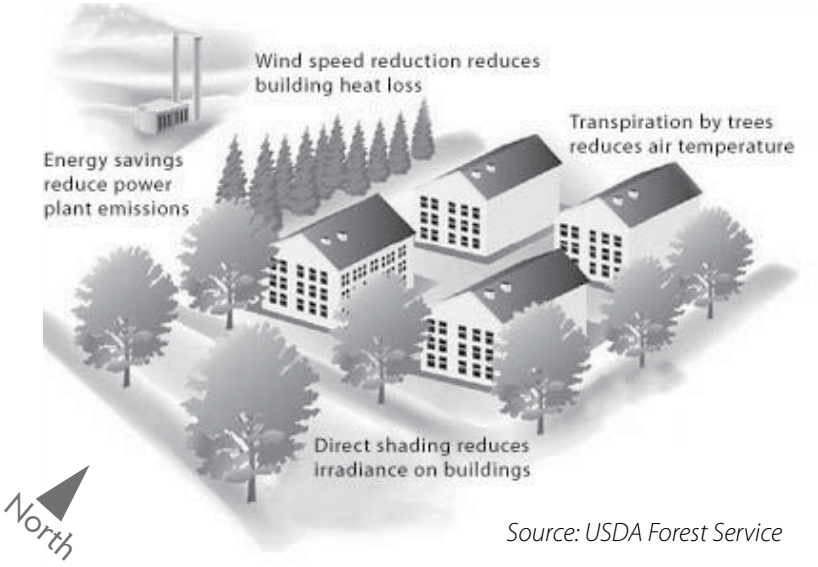
- Trees conserve resources by reducing energy costs, both in summer and winter. Figures 1 and 2 show how tree placement can affect energy savings.
  - Trees provide cooling shade in the summer and buffer the wind in the winter. For example, trees planted within 20 feet of any side of a home provide insulation benefits in the winter.
  - Trees within 60 feet of the west side of a home can reduce electricity used for air conditioning in the summer.
  - If properly placed, a tree with a 25-foot diameter crown reduces annual heating and cooling costs of a typical residence by 8 to 12 percent. [14]
- Trees cool cities by reducing heat generated by buildings and paved surfaces.
- Temperature differentials of 5 to 15 degrees are felt when walking along tree-canopied streets. [15]

Left: Pair of bald eagles at their nest. USFWS.

Above: Bull Run headwaters.

'Right Tree in the Right Place' Concept

Figure 1. Trees Sited Optimally for Shading



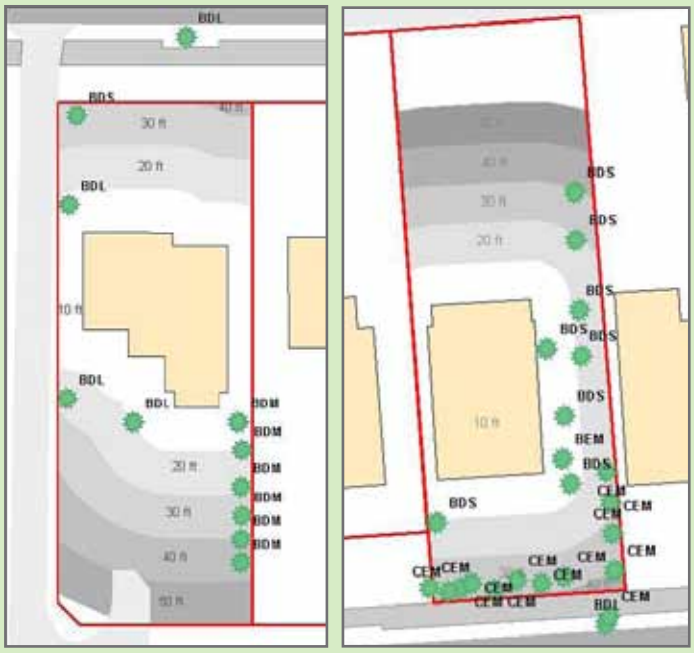
Source: USDA Forest Service

Note: Trees sited optimally for shading produce significantly more energy benefits than trees planted with no regard to location.

Medium or large deciduous trees are typically considered optimal if they are planted on the east, southeast, southwest or west sides of homes.

Source: Casey Trees, Washington D.C.

Figure 2. Tree Placement and Energy Savings



A: Significant Energy savings

B: Increased Energy Use

Plant on the West and East, but Avoid the South

In the summer most solar energy hits the east and west walls of buildings. In the winter most solar gain is received on the south wall.

- West shading is most important because peak demand for energy occurs in the afternoon.
- Deciduous trees that drop their leaves in the winter are most appropriate on the south to allow for the winter sun to provide heat.

Source: ICLEI's Urban Forestry Toolkit for Local Governments.

Note: In these maps B = Broadleaf, C = Coniferous; D = Deciduous, E = Evergreen; and S, M, L = Small, Medium, and Large. Note all of the "CEM" trees on the south side of the home on the right (B). These will block the warming, winter sun.

Source: Casey Trees, Washington D.C.

QUANTIFYING BENEFITS AND COSTS

Recent studies quantify the total dollar value of a tree by identifying the associated costs and benefits and estimating what each is worth. One such study focused on the Northwest climate of Oregon and Washington, which includes Gresham. The purpose of this study was to create a guide providing information about the benefits and costs of trees in yard, park and street locations. Understanding and comparing the benefits and costs of trees can inform the City's decision-making regarding public trees, enhance communication between the City and property owners and foster public/private partnerships on urban forest projects.

The study identified a number of ***benefits*** from trees that can be quantified by dollar figures. These benefits include:

- Energy conservation from tree-shading and tree windbreaks;
- Reduction in atmospheric carbon dioxide;
- Improved air quality;
- Reduced stormwater run-off; and
- Other aesthetic and economic benefits related to retail settings, public safety and property values.

The study also identified the ***costs*** associated with trees. These include planting and maintaining the trees, conflicts with traditional infrastructure and cleaning up leaf litter. The dollar values associated with both benefits and costs were collected from private and public sources in western Oregon and Washington. The communities included Tigard, Albany, Portland, Olympia, Longview and Seattle.

The study found three variables that affect the dollar value of a tree. One is the size of the tree: On average a small tree has one-tenth to one-third the value of a medium tree, and a medium tree has one-third to one-half the value of a large tree. Another variable is the tree species relative to its location – what we refer to as "the right tree, in the right place." For example, a tree species that has low maintenance costs may be most valuable in a residential setting.

Table 1 compares the benefits and costs of planting 100 street trees in a community such as Gresham. The comparison in this hypothetical example is made over a period of 40 years as that is the nominal lifecycle of an urban tree. The total includes 50 large, 30 medium and 20 small trees to demonstrate the differing values of variously sized trees.

Table 1. General cost savings from trees in the Pacific Northwest

Costs = $84,000	Benefits = $202,000
Planting, pruning	Energy conservation
Removal/disposal	Air quality
Irrigation	Reduced run-off
Sidewalk repair	Real estate (aesthetics)
Leaf litter	
Legal/administrative	

Net Economic Benefit: $118,000

Source: US Forest Service Pacific Northwest Climate Region, 2009

As Gresham looks forward to managing its public trees and facilitating stewardship of trees on private lands, such cost-benefit comparisons can help decide how best to use limited resources and to focus educational and partnership opportunities.

Clockwise from above:

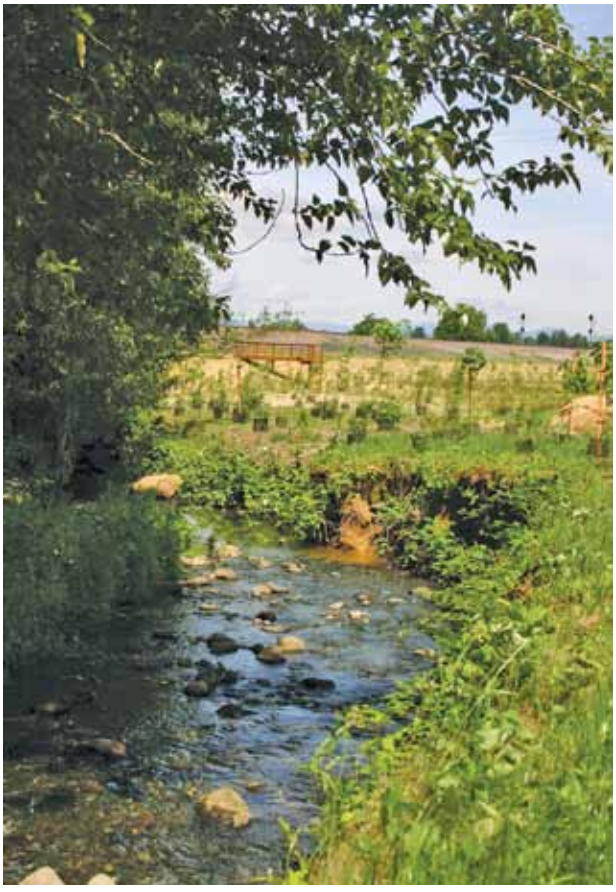
Ginkgo, a Significant Tree, at Gresham High.

Trees shade and cool the stream as it flows into the Columbia Slough Regional Stormwater Treatment Facility.

Playing in the creek. © Nancy J. Smith.

Fall in Main City Park.

A variety of neighborhood trees frame a view of Mt. Hood.



CHAPTER 4

CURRENT STATE OF THE FOREST

This chapter provides an initial overview of the general condition and regulatory framework of Gresham's urban forest. A more extensive field inventory and assessment process is needed to fully evaluate the current state of the forest.

The urban forest is one reflection of the city's health, well-being and livability. Many residents and business owners who live and work in Gresham enjoy the iconic backdrop of forested buttes. However, some neighborhoods are more treed than others; residents complain when neighbors remove trees on or near their properties; property owners, including the City, struggle with the consequences of not planting the right tree in the right place; and the street corridors that connect business districts and neighborhoods often lack trees.

Without ongoing maintenance, Gresham's publicly owned trees are not as healthy and vigorous as they could be. Consequently, trees grow slower, die faster and are much more susceptible to injuries and diseases that require premature removal. Urban forests support a dynamic mix of people, wildlife and trees. The current state of Gresham's forest is described in the following sections:

- Trees in the Urban Environment
- Tree Canopy
- Assessment Needs
- Existing City Practices, Provisions and Plans
- Regulatory and Community Partnership Framework
- Gresham's Existing Tree Codes

TREES IN THE URBAN ENVIRONMENT

The urban forest lives and grows in the built and natural environment where both are constantly evolving over time due to changing demographic, development, climatic and technological circumstances. [1] About 55 percent of Gresham's land base is privately owned and includes land-use types that range from residential to commercial and industrial. About 10 percent of Gresham's land base includes street right-of-way.

While some of the city enjoys proximity to nearby forested buttes, parks and green corridors, there are other neighborhoods that are defined by scattered stands of tall Douglas-fir trees. Some neighborhoods to the north have little mature tree canopy. Regardless of location, there are opportunities throughout the city to plant new trees and enhance tree canopy.

Downtown Gresham.

[1] Planning Advisory Service Report Number 555: Planning the Urban Forest: Ecology, Economy, and Community Development, James C. Schwab (American Planning Association, 2009), p. 43.

Gresham requires trees in new multifamily, commercial and industrial developments. However, specific tree provisions vary for industrial, Downtown, Civic Neighborhood, Rockwood, Station Centers, residential multifamily, single-family attached, commercial and parking lot landscapes in the City, as described below.

- **Industrial Development**
  Industrial development sites must provide 15 percent of the area as landscaping, yet there are no specific requirements for trees.

- **Downtown**
  Within Downtown, 15 percent or more of a site area must be landscaped and, in addition to street trees, site trees are required at one tree per 3,000 square feet of gross site area. Existing major trees (12-inch diameter, or greater, at breast height) can count towards two Downtown site trees.

- **Civic Neighborhood, Rockwood and Station Centers**
  There are no specific requirements for trees or minimum site area landscaping in the Civic Neighborhood, Rockwood or Station Centers, other than required street trees.

- **Multifamily**
  Landscaping is required on 20 percent of the net site area of a residential multifamily property. Yard setbacks must be landscaped with five deciduous shade trees per 100 lineal feet. Site trees must be planted at a rate of one per 3,000 square feet of gross site area. One canopy tree is required per every 35 lineal feet along interior drives.

- **Single-Family**
  Landscaping is required on 20 percent of the gross site area of single-family attached developments. There are also street tree requirements and a requirement that site trees be provided at one tree per 2,000 square feet of gross site area.

- **Corridor Design District Commercial**
  Community Commercial and Moderate Commercial development must include 15 percent of the site area as landscaping. There are also provisions for trees in parking lot entries, areas adjacent to streets, parking bays and landscape islands within the site.

- **Parking Lots**
  High-canopy trees are required in parking lot entryways, in parking bays and as perimeter screening for new industrial and commercial development.

Regardless of where trees are located in the urban environment, proper maintenance contributes to a healthy urban forest. In addition to the benefits the property owner incurs (see Chapter 3 – Benefits of Trees), the entire community benefits when property owners invest in proper, routine maintenance of their trees.

TREE CANOPY

Tree canopy cover is defined as the amount of land that falls under the shade of a tree. It is one of the most-common metrics that communities use, as shown in Table 2, to evaluate the health of urban forests and their associated benefits.

Many communities set aspirational tree canopy goals, such as those shown in Table 2, to prioritize City investments that will create the greatest tree canopy gain. Tree canopy goals assist in understanding:

- Current canopy cover and canopy gain and loss
- Impacts of development and redevelopment
- Planting potential
- Baseline data to monitor progress against canopy-cover goals.

A 2006 study managed by the Johnson Creek Watershed Council recommended that Gresham develop a preferred level of canopy coverage to ensure higher protection of tree canopy and to better meet local water quality and natural resource goals. [2]

Gresham's tree canopy has three major landscape features: One is the urban landscape – the areas of the City where living, working, shopping and playing take place. The second is the natural area landscape – the areas of the City where streams and wetlands provide clean water, flood mitigation and wildlife and plant habitat. The third is the street right-of-way landscape – the medians and planter areas lining the City's streets. A description of the canopy associated with these three major landscapes follows.

Table 2. Regional Canopy Coverage and Targets

	Portland, OR	Tigard, OR	Vancouver, WA	Bellevue, WA	Seattle, WA
Current Canopy	26.3%	24.5%	19.7%	36%	18%
Target Canopy	33%	40% by 2047	28%	40%	30%

Source: Regional Urban Forestry Plans compiled by City of Gresham staff.

American Forests Tree Canopy Recommendations

Metropolitan Areas in the PNW

Average tree cover all zones	40%
Suburban residential	50%
Urban residential	25%
Central business district	15%
Parks	25%

[2] *Gresham Code Review Project prepared by the Johnson Creek Watershed Council, Lori Faha, P.E. Water Resources Engineer, 2006.*

Urban Canopy

Maps 3 and 4 illustrate the City's tree canopy. Both maps show the City limits, neighborhood boundaries and the new communities of Pleasant Valley, Springwater and Kelley Creek Headwaters. Map 3 shows the areas of the City that are shaded by trees (and large shrubs) based on aerial orthophotographs taken in 2007. Map 4 converts the shading to a percentage of each neighborhood's total area, with darker shading indicating a higher percentage of canopy.

The City's canopy, when measured in 2007, was 28.1 percent. Map 3 illustrates that the heaviest canopy coverage is concentrated on the butte areas, such as Gresham Butte, and along stream corridors. This map also shows that the canopy is more dispersed in the developed parts of the city (the white areas of the map). Additionally, this map can help determine where there may be gaps or deficiencies in the canopy.

Table 3 shows canopy cover throughout the City and for seven land-use categories within the urban forest that include: single-family residential, commercial/multifamily, industrial, mixed-use centers, developed parks, natural areas and rights-of-way.

It is important to note how Gresham's forested buttes and dense riparian corridors heavily influence the citywide canopy coverage figure of 28 percent. For example, Map 3 illustrates how the Gresham Butte and Kelley Creek Headwaters neighborhoods both contain approximately 70 percent canopy cover within their boundaries. By removing the natural areas within these two neighborhoods, as well as other publicly designated natural areas citywide (i.e. Habitat Conservation Areas), the 28 percent citywide canopy coverage figure is reduced to approximately 22 percent, as shown in Table 3.

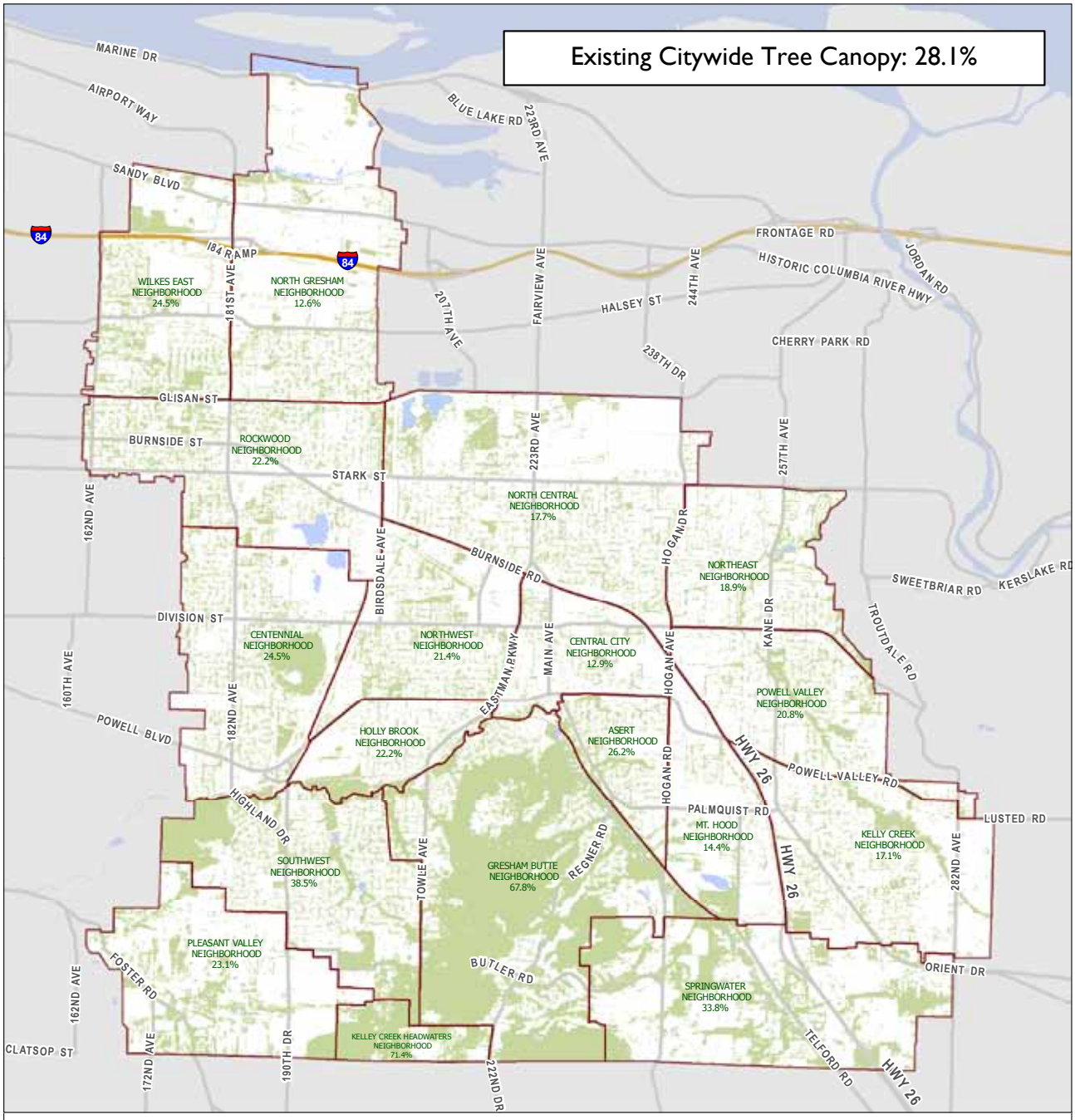
Next Steps: *Setting target canopy goals is recommended as Action Item 4. This Action Item would develop a process for establishing meaningful tree canopy coverage goals throughout the City. It would take into account community desires and tree and ecosystem function. As one measure of performance over time, the canopy goal would periodically compare GIS measurements of canopy with goals for various land uses.*

Table 3. Current Canopy Cover Citywide and by Land-Use Category

Land-Use Category	Total Acres	Current Canopy
Residential/SFR	6,247	26%
Commercial/MF	1,895	17%
Industrial	2,516	14%
Mixed-Use Centers	896	16%
Developed Parks	352	36%
Right-of-Way	2,332	10%
Subtotal		**22%**
Natural Areas	2,753	72%
Total City-Wide	**16,991**	**28%**

Source: City of Gresham, 2011. Note: SFR= Single-Family; MF = Multifamily; Mixed-Use Centers includes regional and town centers; Developed Parks includes currently developed parks and park areas owned by the City to be developed as neighborhood or community parks in the future.

Map 3. Gresham's Existing Tree Canopy by Neighborhood



DISCLAIMER AND NOTICE:
The information on this map has been gathered from a variety of sources. Every attempt has been made to offer the most current, correct, and complete information available. However, errors may occur or there may be a time delay between changes in information and updates. The information contained herein is subject to change at any time and without notice.

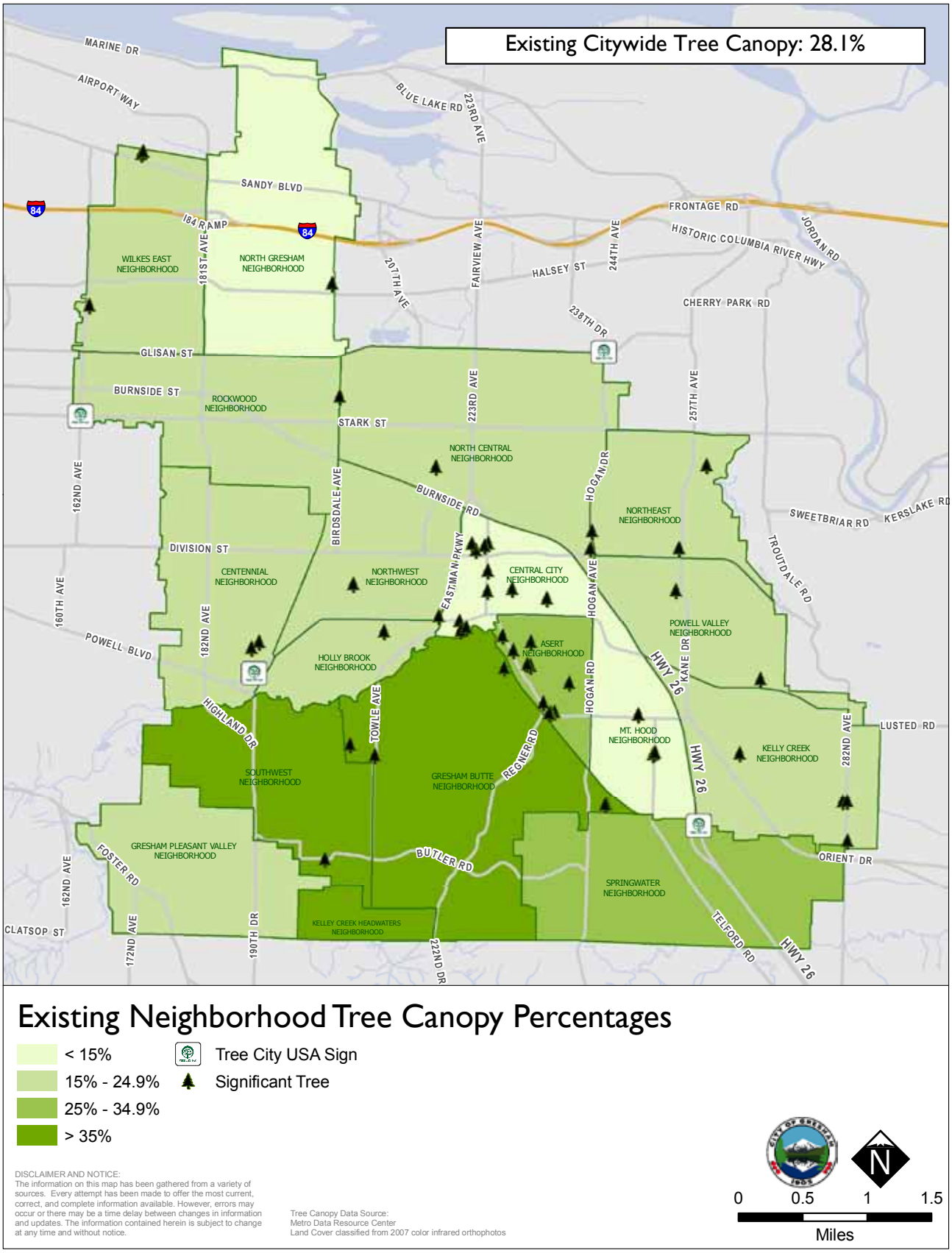
Tree Canopy Data Source:
Metro Data Resource Center
Land Cover classified from 2007 color infrared orthophotos

Source: Y:\Inter-Departmental\MapsAndData\Projects\2011\1500-1599\1517\MapDocs\CanopyDistribution.mxd

Plot date: 09 Mar 2011

Source: City of Gresham GIS, 2009, based on 2007 data and aerial photographs from Metro.

Map 4. Gresham's Existing Neighborhood Tree Canopy Percentages



Source: City of Gresham GIS, 2009, based on 2007 data and aerial photographs from Metro.

Natural Area Canopy

Gresham is one of many communities now working to regain "ecosystem services" historically provided by healthy urban forests and streams, an effort that involves protecting and expanding the tree canopy – particularly in riparian areas where dense thickets of trees once stood. Metro-area communities are starting to understand that augmenting a City's flood-control infrastructure with robust riparian forests and natural areas is a cost-efficient way of handling run-off, as some mature, native trees can take up as much as 400 gallons of water per day.

Equally important, the City of Gresham is obligated to respond to regional, state and federal water quality and habitat protection laws. A significant portion of the City's reforestation efforts are directly tied to its obligations under the federal Clean Water Act, which includes reporting on how Gresham meets the tree canopy shade targets established in its 2008 Temperature TMDL [3] Implementation Plan. That plan aims to increase shading over streams to reduce stream temperature.

The Oregon Department of Environmental Quality (DEQ) currently requires annual reporting from Gresham, and beginning in 2013 it will provide data at five- and ten-year intervals.

- **Annual reporting intervals:** The City is required to submit annual reports detailing how it has worked toward addressing all the TMDL pollutant parameters, including the number of riparian restoration sites planted.
- **Five-year reporting intervals:** Vegetation in active restoration sites will be monitored to assess the impact of City planting plans and maintenance strategies on tree canopy densities and growth rates.
- **Ten-year reporting intervals:** The City will collect field data to confirm shade estimates derived from aerial-image analysis, and will then use that information to monitor and quantify tree canopy development, health and progress towards meeting tree canopy goals in riparian areas.

Riparian Restoration 2004 to 2011

Invasive trees, shrubs and plants cleared: 300 acres

Native plants installed: 58,381

Volunteer hours: ~ 20,000

In 2009, Volunteers:

- Planted 17,719 native trees and shrubs
- Cleared invasive plants from an area the size of 29 football fields; and
- Installed more than 100 habitat structures

Native trees were planted in the existing riparian area along the creek that flows into the Columbia Slough Regional Stormwater Treatment Facility.

Left: Tree swallows use the nesting boxes installed by volunteers at the Columbia Slough Regional Stormwater Treatment Facility. Donna Dewhurst/USFWS.

[3] TMDL stands for Total Maximum Daily Load and is a measurement of pollutant load into a water body.

In 2008, the City's Temperature TMDL Implementation Plan identified three important categories of riparian areas, which include:

- Where the City should not plant trees due to physical constraints
- Where there is a reasonable chance that the City will be able to plant trees
- Where other plant communities would be more appropriate than trees, such as wetlands, water quality facilities, power-line easements and developed park areas

The Temperature TMDL Implementation Plan includes figures that illustrate areas within riparian zones where no tree planting can occur, such as:

- Transportation infrastructure such as paved right-of way with required visual sight distances
- Hardscapes such as buildings, parking lots and large recreational trails
- Utility and gas line corridors
- Access easements

The Temperature TMDL Implementation Plan also shows constrained planting sites within riparian zones where planting may be limited to small, shorter tree species. These include the following areas:

- Wetlands
- Water quality facilities
- Power line corridors with height restrictions
- Developed parks

Because Gresham needs riparian shade to keep streams cool for salmonids, City staff worked with the Oregon Department of Environmental Quality to identify appropriate native tree and shrub communities to be planted streamside. These tree and shrub communities also improve water quality and aquatic habitat conditions. Tree and shrub lists are provided in the Gresham Community Development Code (Section 5.0411 – Table 5.0411 (D)), which also identifies appropriate plant species for specific moisture and soil types.

Public and City-owned land restoration efforts adhere to these tree species lists unless site constraints suggest tall shade trees would be inappropriate. Private streamside landowners are also given these recommended tree and shrub species lists when they express an interest in restoring their riparian lands.

Next Steps: *Appendix B of the Urban Forestry Management Plan includes a Native Plant Guide developed by AmeriCorps volunteers. A technical guide produced by City Watershed Division staff is due to be released in the summer of 2011.*

Right-of-Way Canopy

There are more than 300 miles of public streets in Gresham. Right-of-way locations with trees and other vegetation include:

- 0.23 acres of hardscaped medians (29 total)
- 6.24 acres of vegetated medians (112 total, three of which are irrigated)
- 0.05 acres of vegetated mini circles (7 total)
- 52.7 acres of maintenance areas, including roadside mowing, weed abatement and planter strip areas
- 493 tree wells

Tree canopy located within the right-of-way is described further in this section and primarily includes trees within or along:

- Medians
- Streets
- Green Streets

Medians

Median trees are considered any tree located in the center median of a Gresham street. Landscaped medians on Eastman Parkway, Division Street and Powell Boulevard are the only irrigated medians. The Eastman Parkway medians were installed in the 1980s and, as of 2006, 33 trees and more than 1,000 shrubs were installed at a cost of $26,500. In 2002, trees and shrubs were installed in the Division Street medians as an innovative approach for traffic-calming. Total cost: $126,000.

In 2007, about $700,000 was spent to install a variety of tree and shrub species within the Powell Boulevard medians and planter strips. The City is required to show how it is reducing pollution in its creeks over time and the 2,500 linear feet of median swales along Powell Boulevard help to achieve this by:

- Managing run-off from five acres of pavement; and
- Reducing run-off to Johnson Creek by more than 4 million gallons per year.

Left and right: Planted medians along Powell Boulevard.

Streets

Street trees are those planted in or immediately adjacent to the public right of way. These often grow in a planter strip between the curb and sidewalk, but in cases where there is no planter strip, street trees may be planted on the private land side of a sidewalk. In Gresham, as in most Oregon municipalities, responsibility to care for and maintain all street trees located in the public right-of-way belongs to adjacent property owners. Street trees that are not properly maintained can become a hazard to property owners, pedestrians and neighbors. Routine maintenance helps keep neighborhoods clean, accessible and safe.

An inventory of street trees by tree type, quantity, size and condition has not been completed. Because street trees are located in the right-of-way, tree removal or planting activities within these areas are regulated by the City. For new development, City Code typically requires one tree to be planted every 30 feet, of the type specified in the City's Recommended Street Tree List found online at GreshamOregon.gov/UrbanForestryPlan.

Green Streets

Over the last few years, Gresham has applied Green Street elements to a number of large arterials, transforming impervious street surface into landscaped green spaces that:

- Capture stormwater run-off;
- Allow water to soak into the ground; and
- Let plants and soil filter pollutants.

These landscaped areas include trees, shrubs and other plant materials.

Green streets convert stormwater into a resource that replenishes groundwater supplies. They also create attractive streetscapes and urban green spaces, provide natural habitat and help connect neighborhoods, schools, parks and business districts. Green streets are an innovative, effective way to restore watershed health, protecting water quality in rivers and streams, and managing stormwater from impervious surfaces. They can also be more cost-efficient than new storm sewer pipes or large regional treatment facilities.

Green streets are one technique for developing in a green and sustainable manner. The planting and preserving of trees is another cost-effective green and sustainable development technique.

Recent green street projects include:

- Powell Boulevard
- Northeast Holladay Street
- Northeast 201st Avenue, south of Sandy
- Streets surrounding the Center for the Arts Plaza
- Beech Street
- Hogan Road
- Kane Road
- Stark (in construction in 2011)
- Burnside (in construction in 2011)

Next Steps: *The 2011 Council Work Plan includes the Community Appearance project. This project will focus on developing design themes and maintenance strategies for arterial street medians and rain garden landscaping. It will evaluate recent programs and identify best practices to improve aesthetics and minimize annual expenses.*

Hogan Road Green Street installation, 2010.

NEED FOR ASSESSMENT

Assessing the health of public trees is a best practice for protecting and enhancing the public's investment in trees. Assessments can provide information about maintenance needs, tree replacement strategies and new planting opportunities. Assessments can reveal planting locations and methods that result in the healthiest trees and successful planting outcomes. Many communities have developed a Public Property Tree Inventory and Assessment Report.

This report does not assess trees on private property, focusing instead on trees on City-owned lands.

A tree inventory is the first step in a tree-health assessment and fundamental to a long-term maintenance program for public trees. Public trees are catalogued for location, species, stem diameter, health and appraised value. Data from a public tree inventory addresses the following:

- Quantification, composition and location
- Quality, health and condition
- Effect on property values
- Calculation of environmental benefits
- Maintenance needs and management plan
- Risk-management goals
- New tree planting opportunities

Over time, municipal tree inventories change as trees grow, new trees are planted, others are pruned and some removed. A tree inventory should be considered a dynamic process – one that managers can use to increase the value of Gresham's urban forest resource. Many communities often start by conducting a street tree inventory with the help of local neighborhood associations.

Inventories provide important information about the current level of species diversity and encourage greater tree diversity. Reliance on too many of one species or genus has proven costly in the past when an insect or disease epidemic has sickened an entire city's tree population consisting of one species or genus of a tree. Researchers recommend the 30:20:10 rule: no more than 30 percent from any family; no more than 20 percent from any genus; and no more than 10 percent of any species.

Tree inventory tools could be useful in planning, planting and reforestation efforts in Gresham and could quantify the structure of community trees and the environmental services that such trees provide. The two most commonly used tree inventory computer programs include i-Tree and CITYgreen, which provide similar services as shown in Table 4.

Table 4. Tree Inventory Tools

U.S. Forest Service i-Tree Software Tools

- Calculates air quality, carbon storage and sequestration, stormwater, energy use, cost/benefit
- Uses sampling strategy, intensive on-field data collection
- Provides specific tree characteristics
- Not GIS compatible
- Free software, costs incurred in the field, during training and in data compilation

CITYgreen

- Calculates air quality, carbon storage and sequestration, stormwater, water quality pollutant loading
- Requires land cover data, averages species, uses local reference data
- Comprehensive view of urban forest
- GIS data useful to most city departments in some way
- Contracted work or purchase CITYgreen license and training

Source: Comparison done by AMEC Earth and Environmental, Inc., 2010.

EXISTING CITY PRACTICES, PROVISIONS AND PLANS

Today, Gresham does not have a comprehensive urban forestry program for tree management. Comprehensive programs employ a proactive management approach, often focusing on tree assessment, planting, protection and replacement.

Gresham's existing tree programs and services are currently provided by multiple service areas, as shown in Figure 3. This figure also illustrates the various interdepartmental relationships and policy oversight.

Trees are managed within service areas to meet each service area's specific mission and management directive. For instance, the Transportation Division must balance street tree regulations and policies for landscape medians with the need to minimize tree conflicts with surrounding infrastructure and transportation safety requirements. Likewise, the Parks Operations section must balance tree maintenance with other competing maintenance and capital improvement needs.

Overall, the existing management structure is complex and illustrates the importance of: 1) clear communication among service areas; 2) effective interdepartmental coordination; and 3) alignment of policy, where practicable, between competing goals to ensure consistent urban forestry policies, programs and services.

City Services

Responsibility for tree management and maintenance services in Gresham is currently shared by several service areas within the City, as well as private property owners, as shown in Table 5. Table 5 identifies City and property owner roles with respect to tree maintenance and management. The main difference between these roles is that management and maintenance of public trees is handled by the City while private property owners are required to maintain and care for street trees.

Urban forestry management and policy coordination requires close collaboration among City service areas. The range of coordination activities may include:

- Reviewing site development applications for conformance with existing tree regulations
- Partnering with agencies, landowners and business or industry professionals to improve the tree canopy
- Assessing, inventorying and monitoring the city's urban forest health
- Promoting volunteerism through natural area and street tree planting projects
- Administering the Significant Tree and Tree City USA programs
- Hosting community events, such as Earth Day and Arbor Day
- Engaging in education and outreach efforts
- Communicating with neighborhood associations and residents and providing technical support to maintain the urban forest
- Enforcing and upholding tree policies
- Identifying and securing stable funding to create and maintain an urban forestry program
- Providing customer service for residents, business owners, contractors and developers on tree installation, and ongoing care

Figure 3: Urban Forestry Tree Management Structure in Gresham

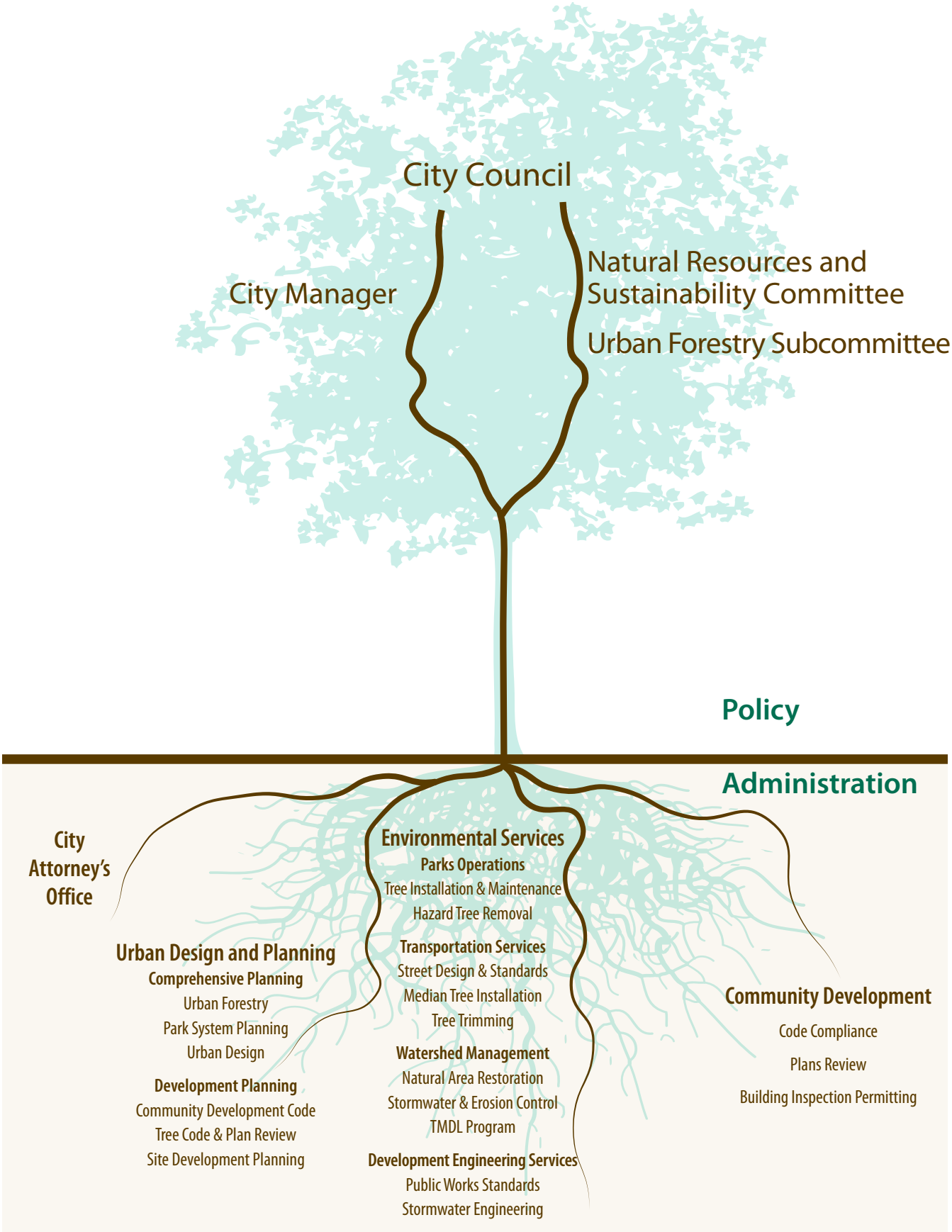


Table 5. City and Property Owner Tree Management Roles

Public Trees - Parks & other City-owned property	Planned or Proposed by	Reviewed by	Implemented by	Regulated or Enforced by
Trees in Developed Parks	DES-PARKS	DES-PARKS/ UDP	DES-PARKS/ UDP	DES-PARKS/UDP/ CD
Trees in Publicly Owned Natural Areas	DES-PARKS/ DES-WD	DES-PARKS/ METRO/ DES-WD	DES-PARKS/ METRO/ DES-WD	DES-PARKS/UDP/ CD
Trees in Public Rights-of-Way*	Planned or Proposed by	Reviewed by	Implemented by	Regulated or Enforced by
Street Trees - Individual Lots	PPO/DES-TRANS	DES/UDP	PPO/CD	UDP- CDC 9.1020 - 9.1022/CD - GRC 7.15
Street Trees - Transportation Improvements	DES-TRANS/ DES-WD	DES/UDP	DES-TRANS/ DES-WD	UDP- CDC 9.1000
Street Trees - Subdivisions (public or private streets)	PPO/DES-TRANS	DES/UDP	PPO/CD	UDP - CDC 9.1000
Private Trees - Developed Areas	Planned or Proposed by	Reviewed by	Implemented by	Regulated or Enforced by
Trees in Parking Lots	PO/DES-WD	UDP/ DES-WD	PO	UDP- CDC 9.0823
Required Landscaping	PO	UDP	PO	UDP - CDC
Erosion Control	PO/DES-WD	DES-WD	PO	UDP - CDC 5.0225
Stormwater Management Facilities	PO/DES-WD	DES-WD	PO	DES-WD
Significant Trees	PPO	UDP	PO	UDP
Removal of trees over 8" in diameter	PO	UDP	PO	UDP- CDC 9.1000
Private Trees in Overlay Zones	Planned or Proposed by	Reviewed by	Implemented by	Regulated or Enforced by
Floodplain	PO	UDP	PO	UDP/CD
Hillside Constraint	PO	UDP	PO	UDP/CD
Habitat Conservation Area	PO/DES-WD	UDP/ DES-WD	PO/DES-WD	UDP/CD
Private Trees - Under or Undeveloped Areas				
Trees on Dividable Lots - cutting and preservation	PO	UDP	PO	UDP- CDC 9.1000
Cutting of regulated trees with clearing and grading	PO/DES (CIP Project)	UDP/CD	PO/DES (CIP Project)	UDP/CD
Subdivisions - tree preservation	PO	UDP	PO	UDP

Note: These are general designations and there may be exceptions and refinements.

**Property owners are required to maintain and care for street trees.*

CD = Community Development
CDC= Community Development Code
DES = Department of Environmental Services
UDP = Urban Design & Planning
PO = Property Owner (public or private)
PPO= Private Property Owner
SF = Single-Family
WD = Watershed Division

City Departments

Urban Design and Planning (UDP)

The two sections within UDP that provide urban forestry-related planning and review services are Comprehensive Planning and Development Planning.

- Comprehensive Planning leads development and implementation of the Urban Forestry Management Plan and provides a staff liaison to the Urban Forestry Subcommittee.
- Development Planning processes land-use permits pertaining to tree protection, removal and replacement and land-use requirements for new development.

UDP is also responsible for administering the Significant Tree Program, parks planning, and coordinating the annual application submittal to maintain Tree City USA certification.

Department of Environmental Services (DES)

DES provides a number of services for a healthy and sustainable urban forest which include:

- Transportation
- Watershed management
- Parks maintenance
- Public works inspection
- Development engineering services related to specifications for public trees and tree installation within the public right-of-way. These specifications are located in the City's Public Works Standards.

Community Development (CD)

Community Development administers building codes and City code compliance.

- Code Compliance responds to citizen complaints about tree removal and sidewalks buckled by tree roots.
- CD also coordinates tree placement with signage and light poles in the pre-construction phase of development.

Public Tree Maintenance

Overall, the City has a limited tree maintenance program. The bulk of tree maintenance is shared between DES Parks Operations and the Transportation Operations staff. Watershed Operations also provides tree installation services for trees in public riparian areas.

1. Parks Operations

For many years, the City of Gresham provided a basic level of care for its parks system. Now, with limited staff, the DES Parks Operations section is unable to provide publicly owned trees with ongoing pruning, fertilizing and pest and disease control. They can only respond if a tree poses an immediate hazard to life and property. Since ongoing maintenance of trees is important, Gresham's publicly owned trees are not as healthy and vigorous as they could be. Consequently, trees grow slower, die faster and are much more susceptible to injuries and diseases that require premature removal.

DES Parks Operations has a staff of six that handles the majority of maintenance responsibilities (including hazard management and tree maintenance) for all Gresham parks, trails and open space sites. For some parks, the City uses contractor services to provide routine maintenance on an annual basis for mowing, tree trimming and fertilizing. City parkland covers about 1,200 acres at 54 sites and is divided up between two maintenance districts.

According to the 2009 City of Gresham Parks and Recreation, Trails and Natural Areas Master Plan, Gresham field staff are responsible for nearly 200 acres each, an amount that is about three times the National Recreation and Parks Association (NRPA) standard.

DES Parks also has a tree management process in place focusing on upland trees and hazard tree removal on public park and open space properties. DES Parks Operations does not have a formal replanting guideline for trees that have been removed.

For about six years leading up to 2009, DES Parks Operations staff documented planting approximately 1,000 trees per year. In 2009, Parks Operations staff was reduced by 25 percent. From 2009 to 2010, park tree planting declined by 90 percent. Staff attributes the decline in tree planting and maintenance to staffing reductions. Public park trees that are pruned are primarily those trees that need to be limbed up over pathways. Most trees that are removed have been categorized as hazard trees due to storm damage and windthrow (trees toppled by heavy winds).

2. Transportation Operations

The Department of Environmental Services Transportation Division plans, designs, operates and maintains the City's transportation system of more than 300 miles of streets and is responsible for Gresham's Transportation System Plan (TSP). DES Transportation also provides vegetation management along some public rights-of-way, trimming where trees and plants encroach into the street. It also replaces about 50 trees per year (primarily within medians) at a cost of $12,000.

3. Watershed Operations

The Department of Environmental Services Watershed Division coordinates tree installation projects primarily in response to mandates at the federal and state level. These plantings are mostly in riparian corridors and habitat areas. Trees are planted on publicly owned properties, and AmeriCorps crews working within DES partner with property owners to plant trees on private property adjacent to Gresham streams.

Advisory Committees

The **Gresham City Council** governs policy matters pertaining to trees as described in the Gresham Comprehensive Plan, the Community Development Code and Gresham Revised Code. The Council has also established Advisory Committees made up of residents to provide policy advice to the Council.

The **Natural Resources and Sustainability Committee (NRSC)** advises the Gresham City Council on policy development matters and actions related to sustainability, and the protection, restoration and enhancement of:

- Natural resources, including urban tree canopy
- Water quality and watershed health
- Fish and wildlife habitat
- Public health provisions
- Development, improvement and expansion of City parks, trails and green space

The **Urban Forestry Subcommittee (UFS)** – formerly known as the Tree Preservation Committee (TPC) – advises the City Council, under the umbrella of the NRSC, on urban forestry issues and activities related to:

- Urban tree-canopy preservation
- Tree species for the City's Street Tree List
- Trees to receive special designation as part of the City's Significant Tree List
- Tree City USA activities

The seven-member Urban Forestry Subcommittee is appointed by the City Council and has expertise associated with trees such as forestry, landscaping, arboricultural and nursery operations. The UFS plays an integral role advising City officials and the public at large on urban forestry issues.

CODES AND STANDARDS

Tree regulations are spread across both the Community Development Code and the Gresham Revised Code.

Community Development Code (CDC) Section 9.1000 Tree Regulations

The regulatory provisions in this section are discussed in more detail near the end of this chapter and are currently organized within the CDC as follows:

- Tree Removal/Replacement/Protection
- Street Trees
- Tree Pruning
- Protection and Penalties

Community Development Code (CDC) Appendix 14 Significant Trees

The regulatory provisions in this section are discussed in more detail near the end of this chapter and are currently organized within the CDC as follows:

- Procedures for Designating, Maintaining and De-Listing Significant Trees and Groves
- Standards
  - Criteria for Designation
  - Criteria for Removal
  - Pruning of a Significant Tree
  - Emergency Cutting or Removal
- Education and Promotion

Gresham Revised Code prohibits installing the invasive English hawthorn in planting strips.

Gresham Revised Code (GRC)

The GRC provisions are municipal laws that prescribe how City functions are implemented. The GRC includes Chapter 7 General Nuisance. The GRC Section 7.15.040(2)(a-i) outlines requirements for the maintenance of vegetation within the planter strip or along a street or alley adjacent to private or public property. Specific to trees, it states that no person in charge of the street planter strip may allow:

- Overhang/encroachment of tree branches lower than 8 feet on a public sidewalk or other pedestrian way
- Overhang/encroachment of tree branches lower than 12 feet on a public or private street
- Impediment of views of traffic or access to any public facility
- Obstruction of drainage facilities
- Tree roots that have entered a wastewater, stormwater or water line
- Tree roots that have cracked or displaced a sidewalk, curb or street

Section 7.15.040(2)(a-i) also contains provisions prohibiting the installation of invasive plants in planter strips, as designated on the City's Invasive Plant List. There are several common tree species in Gresham on this list, including English hawthorn and Tree of Heaven.

Gresham Public Works Standards (GPWS)

These Standards are administered by the City's Public Works Inspectors and Development Engineering Specialists and provide street tree plans for installation within the public right-of-way.

Green Street Standards

In 2007, green street standards were added to the Gresham Public Works Standards. The standards covered typical street sections; details and sample green street plans for six different street types; rain garden bulb-outs; and planting details as well as a large-tree planting detail. These designs may require new tree-planting strategies.

Climate Change Agreement

In 2007, mayors across the country, including Mayor Bemis, signed the U.S. Mayors Climate Protection Agreement (MCPA), a response to a warming climate from the build-up of carbon dioxide in the atmosphere. The agreement urges local governments to enact measures to reduce greenhouse gas emissions by 2012, bringing such emissions 7 percent below 1990 levels. As identified in the City's Greenhouse Gas Inventory Report (2010), tree planting and retention can be a cost-effective strategy for reducing carbon in the atmosphere.

Gresham Community Development Plan

The following are current Goals, Policies and Action Measures in Volume 2 of the Gresham Community Development Plan, which relate to urban forestry. They have been abbreviated here.

Goal 2 Land-Use Planning: Section 1, Land-Use Policies and Regulations

This section supports Statewide Planning Goal 2 with the following Goal adopted by City Council:

Goal: Maintain an up-to-date Comprehensive Plan and implementing regulations as the legislative foundation of Gresham's land-use program.

- Summary: The Policies and Action Measures encourage land-use planning that contributes positively to Gresham's quality of life.
- Policy 4. Promote a development pattern of land uses to advance the community's quality of life and its social and fiscal stability.
- Policy 11. Protect designated significant natural resources.
- Policy 12. Establish design standards to assure quality development and enhance the community's attractiveness and livability.
- Policy 13. Allow planned developments to promote innovative design, protect natural resources and open space areas and to provide flexibility.
- Policy 26. Protect views that contribute to Gresham's identity such as Mount Hood, the Columbia River Gorge, streams and riparian corridors and the wooded character of the buttes and hillsides.
- Action Measure 1. Improve the quality of Gresham's streetscapes through design review of development.
- Action Measure 2. Preserve lands subject to natural hazards as open space.
- Action Measure 3. Preserve a "green corridor" along U.S. Highway 26 between the cities of Gresham and Sandy.
- Action Measure 15. Allow mixed-use commercial, employment and residential development to support transit use, enhance neighborhood economic and social vitality and provide for a range of housing opportunities/options.

Policy 26: Protect views that contribute to Gresham's identity. Mount Hood from Hogan Butte.

Goal 2 Land-Use Planning: Section 2, Community Design, Trees and Other Vegetation

This section was updated in 2004 and supports Statewide Planning Goal 2 with the following Goal adopted by City Council:

Goal: Protect and enhance the environmental and aesthetic contribution of trees and other vegetation.

There are 11 policies and 22 action measures to support this goal, included in Appendix C. The Policies and Action Measures encourage preservation and protection of the quality and safety of Gresham's urban and natural environments. The following highlights key urban forestry-related Policies and Action Measures:

- Policy 1. Establish regulations to protect and when necessary restore trees and other vegetation to support community aesthetics, maintenance and or/improvement of water quality, erosion control and stability of slopes and unstable soils.
- Policy 2. The City shall condition development approval to require preservation of existing trees and mitigation of tree/vegetation removal.
- Policy 3. Protect environmental quality and safety by regulating removal of trees in natural resource areas and instituting practices to prevent and resolve tree hazards.
- Policy 7. Require compliance with City tree regulations.
- Policy 9. Ensure various City codes, regulations and standards relating to landscaping, site development and tree protection are consistent with and supportive of one another.
- Action Measure 5: Assure coordination occurs between City and private utilities regarding tree planting, protection, maintenance and removal.
- Action Measure 6: Work with property owners to promote the preservation of large trees, tree groves and historic individual trees.
- Action Measure 16: Provide incentives encouraging developers to preserve trees and other significant vegetation.
- Action Measure 19: Develop an Urban Forestry Management Master Plan and ultimately implement a citywide urban forestry management program.
- Action Measure 21: Develop tree mitigation regulations/standards to guide the City in assessing fees or compelling compensatory action resulting from violation of its tree protection standards.

Additional sections of the Gresham Community Development Plan relevant to urban forestry are listed and described in Appendix D.

Gresham Parks and Recreation, Trails and Natural Areas Master Plan

Adopted by City Council in August 2009, this 20-year, long-range plan establishes recommendations for maintaining, conserving and developing quality parks, facilities, trails and natural areas in a sustainable way. Trees in developed and undeveloped parks and natural areas are integral to the health of Gresham's urban forest.

City of Gresham NPDES Stormwater Management Plan (SWMP)

Adopted by City Council Resolution #2829 in April 2006, this plan addresses the need for water quality protection, enhancements and flood control in Gresham. The SWMP was updated in accordance with the National Pollutant Discharge Elimination System (NPDES) Permit, which is issued by the Oregon Department of Environmental Quality. Enhancing riparian areas in each major watershed is one of the SWMP's best management practices and includes but is not limited to: removal of invasive species, restoring and expanding riparian buffers, and planting multi-story native plant populations.

The *2006 Stream and Stormwater Monitoring Plan* was developed to meet federal and state water quality mandates and designed to track the long-term progress of the SWMP.

Additional Stormwater compliance manuals include:

- Green Development Practices for Stormwater Management
- Green Street Standards
- Water Quality Manual
- Erosion Control Manual

These manuals and standards provide guidance to protect existing trees in Gresham's urban forest as well as reforestation efforts along stream corridors.

Stormwater Master Plans

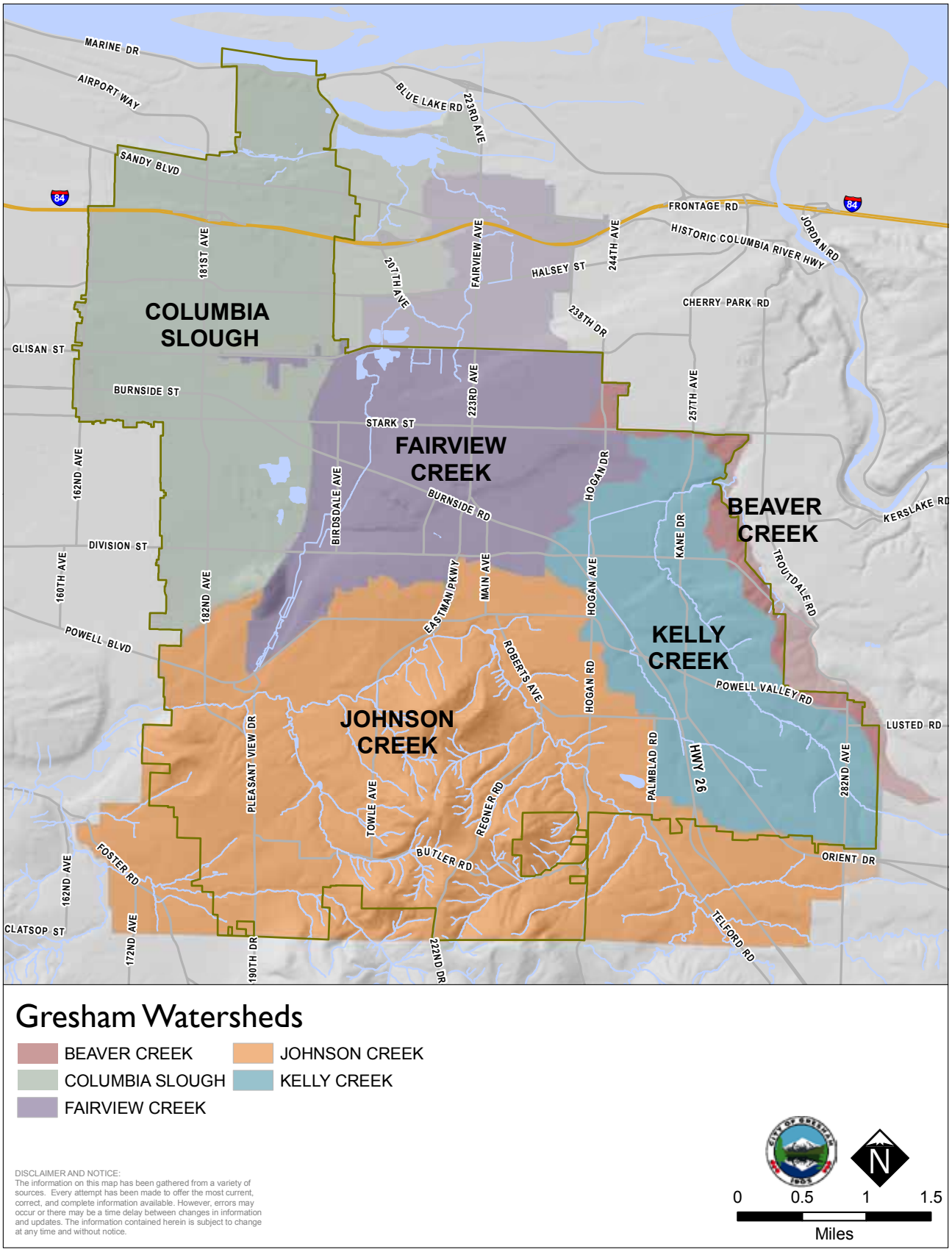
The Watershed Division works to improve flood protection and water quality through construction and maintenance of the City's public stormwater system and preservation and restoration of area waterways. The City has developed four master plans to address flooding and water quality issues in Gresham's watersheds, as shown in Map 5.

Recently completed Master Plans include:

- Johnson Creek Stormwater Master Plan including the Springwater and Pleasant Valley Areas, 2005
- Kelly Creek Stormwater Master Plan, 2007
- West Gresham Stormwater Master Plan, 2005
- Fairview Creek Stormwater Master Plan, 2003

While each master plan has objectives specific to each watershed, a shared goal is to protect the public's safety, health and property through flood control measures. Trees provide a range of stormwater management services across watershed boundaries.

Map 5. Gresham Watersheds



Source: City of Gresham GIS, 2011

Temperature Total Maximum Daily Load (TMDL) Implementation Plan

In 2007, the City of Gresham filed this implementation plan with the state demonstrating how the City will meet requirements to install and protect riparian buffer trees, ensuring the growth of tall trees (i.e. western redcedar, black cottonwood, Douglas-fir and Bigleaf maple) and the provision of adequate stream shading. The standards under this program tie into the City of Gresham's recently adopted Habitat Conservation Area. A healthy and expanded urban forest will help meet the requirements of this Plan.

Gresham Transportation System Plan (TSP)

The TSP is the City's 20-year plan for transportation improvements and investments. It recognizes that Gresham's street system is an essential element to support community livability.

The TSP helps Gresham comply with federal requirements, including the Transportation Equity Act, Clean Air Act, Clean Water Act and the Americans with Disabilities Act. Likewise, the TSP complies with state and regional goals, policies and regulations.

Last adopted in 2002 and currently undergoing an update, the Gresham Community Development Plan Volume 4: Transportation System Plan acknowledges in the Chapter 3 System Inventory and Assessment how street trees enhance the appearance of the street system. To meet pedestrian needs in Gresham, the TSP recommends requiring planter strips along major streets. Planter strips are currently required on local streets in Gresham and they provide space for street trees as well as separation from vehicle traffic.

CITY PROGRAMS

Stormwater Management Program

Since 1994, the City has been required by the Department of Environmental Quality (DEQ) and the Federal Clean Water Act to reduce stormwater pollution going into local rivers and streams. To meet pollution-reduction mandates and prevent flooding, the City collects stormwater utility fees to construct and manage stormwater infrastructure.

The Stormwater Management Program provides engineering, operation and maintenance, state and federal permit reporting, stormwater monitoring, erosion control, inspections, and education and outreach. The Streamside Property Outreach Program/Healthy Streams Program offers free resources, such as tree giveaways, to residents to help reduce pollution of local watersheds, creeks and wetlands.

Natural Resource Programs at the City focus on restoring the ecological health of riparian open space and natural areas that also make up Gresham's urban forest. Projects, often led by skilled AmeriCorps volunteers from across the country, rely on help from resident volunteers and homeowners.

- **Restoration Projects** – The goal of restoration projects in natural areas is to return the ecosystem to a healthy, functioning condition. In degraded natural areas, encroachment by invasive, weedy species like ivy and blackberry directly threatens the health of Gresham's urban forest and leads to increased erosion, poor water quality and low biodiversity.

  Restoration goals include:

  - Improving water quality
  - Minimizing erosion and property loss
  - Reducing severity of flood events
  - Increasing diversity of plant and animal life

  Such restoration efforts will also help enhance and expand Gresham's urban forest.

- **Backyard Habitat Certification Program** – Gresham's natural areas provide valuable wildlife habitat to birds, butterflies, bees, amphibians, reptiles, mammals and more. By gardening in a way that supports and encourages wildlife, property owners can have their yard certified through this program. Mature trees, native dense shrubs and snags (dead trees) all provide places for wildlife to raise their young. Native trees in Gresham's urban forest can provide homes and food for a variety of species of native wildlife.

DES-Watershed programs associated with tree management include:

- Shade Cover Analyses conducted every five years for the Temperature TMDL Program. This program includes tree-inventory work.
- Felled trees identified in AmeriCorps' amphibian and bird surveys
- Native plant projects and initiatives
- Tracking of tree removal and planting using new environmental mapping platforms (GIS)
- **The Gresham Resource Efficiency Assistance to Businesses Program** Known as GREAT, this program offers free assistance and resources to help businesses conserve natural resources, protect the local environment and improve the bottom line. As of 2010, about 120 Gresham-area businesses were recognized participants in this program and realizing financial benefits through GREAT's waste-reduction and conservation strategies. During UFMP development, at least one stakeholder suggested exploring whether the GREAT Program could add tree-related certification requirements.

REGULATORY AND COMMUNITY PARTNERSHIP FRAMEWORK FOR URBAN FORESTRY

City planning, programs and regulations are influenced by a number of State and Federal mandates. The Endangered Species Act and the Clean Water Act in particular have resulted in extensive changes to how development occurs and how natural resources are managed at the municipal level.

Key State and Federal mandates affecting urban forestry are described in Appendix E, including a description of roles, responsibilities and programs for urban forest management in Gresham that involve the following:

- Federal initiatives and mandates
- State agencies and planning goals
- Metro mandates, initiatives and guidelines
- Private utilities
- Educational institutions
- Community partners

An summary of tree regulations is included in Appendix F. The summary in Appendix F describes City codes that are currently in place to meet specific Federal, State and Metro mandates.

Douglas squirrel. Property owners who create habitat to attract wildlife can have their yard certified through the Backyard Habitat Certification Program.

GRESHAM'S EXISTING TREE CODES

The City has a number of regulations that establish a framework for tree preservation, planting and care. The City's wide-ranging urban forestry efforts are discussed more extensively in Chapter 5 and reflect the complexity of tree management issues in urban settings.

Gresham has had tree regulations that apply both during development and outside the development review process for more than 10 years. As described earlier in this chapter, tree regulations are located in both the Gresham Community Development Code (CDC) and the Gresham Revised Code (GRC).

While tree provisions are located throughout the CDC, they are found primarily in Section 9.1000. These Code sections are designed to retain existing trees along public rights-of-way and on public lands, multifamily, commercial and industrial property. Such provisions hold multiple benefits for the City and the community as a whole. The City has also developed standards and procedures to protect trees that have been adopted as Significant Trees, as summarized below and in Appendix 14.000 of the CDC.

Because uncontrolled cutting or removal of trees within the city decreases the community's livability, the community has determined that it is in its interest to preserve Significant Trees, to limit the removal of trees and to protect trees from unnecessary damage. Trees in Gresham are regulated differently depending on their location or purpose on a site, their size and if they have been adopted as a Significant Tree.

Gresham has three overlay zones (Floodplain Overlay District, Hillside Physical Constraint Overlay District and Habitat Conservation Area Overlay District) that either directly require or indirectly result in retention of trees or tree-replacement mitigation when properties are developed. The City also requires planting of street and parking lot trees as a condition of new development.

Appendix F includes a summary of all urban forestry-related items in the Community Development Code (CDC) and key sections are highlighted below:

- **CDC Section 4.1400 Pleasant Valley Plan District and CDC Section 4.1500 Springwater Plan District.** In addition to implementing the Plan District, the general provisions in these two sections provide for extensive protection, restoration and enhancement of the natural resources within these new communities. The provisions outline mitigation standards for environmentally sensitive restoration areas; green development practices and green streets for stormwater management; and tree-planting requirements. Tree canopy provisions in Section 4.1469 and Section 4.1565 require single-family dwelling and duplex developers to choose to meet one or more of the following three options: 1) Tree Preservation; 2) Tree Planting; and 3) Contributing to the Tree Fund. For all other development, an applicant must preserve at least 2 inches of existing tree diameter per 1,000 square feet of site area.

  The Tree Fund is an account held by the City to accumulate money generated by trees and track tree-related income and expenses. Accumulated funds are only used to pay for tree-related projects.

- **CDC Section 9.0100 Buffering and Screening Requirements.** Buffers consist of horizontal tree and shrub plantings or fences/walls adjacent to property lines, reducing potential conflicts between varying, permitted development intensities. The required buffer between a single-family home and a multifamily development is five trees per 100 lineal feet. Between a single-family home and industrial development, the requirement is nine trees per 100 lineal feet.

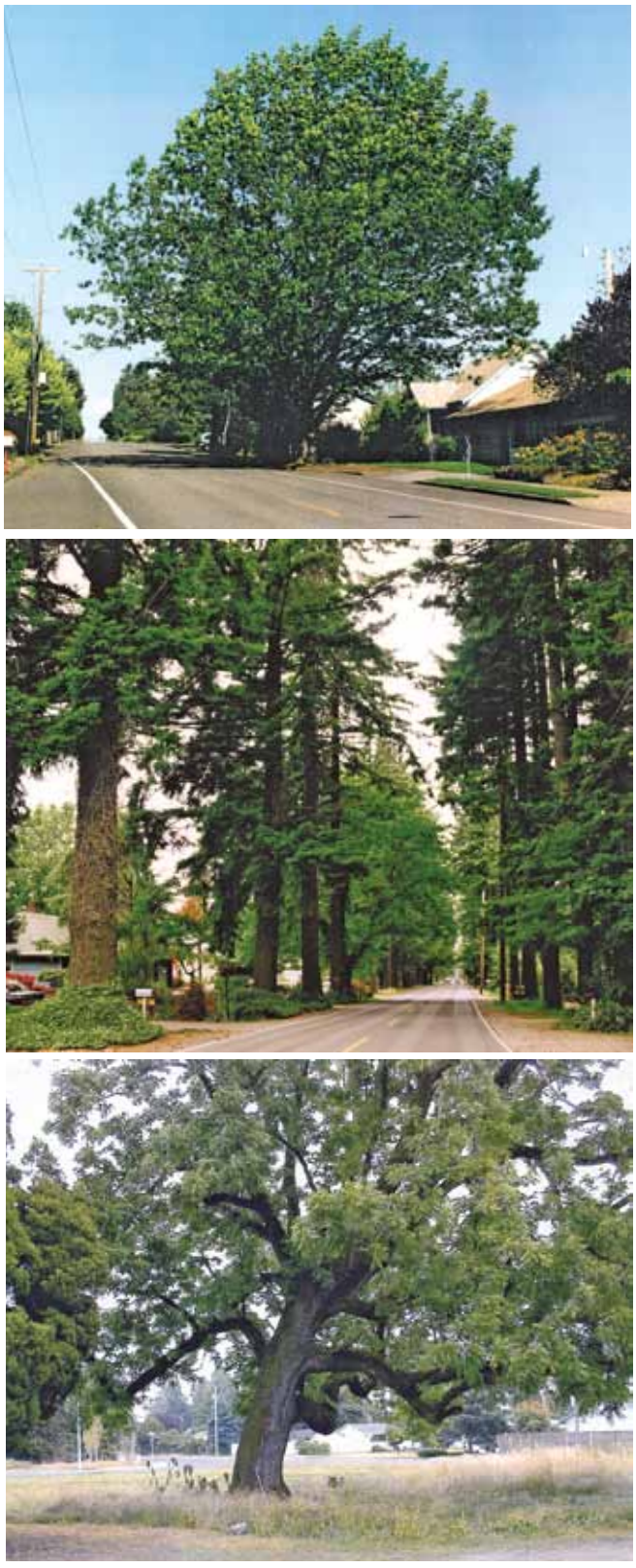
- **CDC Section 9.0823 Landscaping of Parking Lots.** These provisions are intended to preserve as many existing healthy trees and shrubs as possible and require property owners to establish and maintain parking lot landscaping, consisting of large canopied (at maturity) deciduous trees, mid-size shrubs and ground cover. In surface parking lots, trees are required in parking bays to provide shading, and along entrances and edges for screening. At a minimum, parking lots must be bordered by a 5-foot-wide, landscaped strip with large-canopy trees placed 20 to 30 feet on center.

- **CDC Section 9.1000 Tree Regulations.** This section includes provisions advancing the public's interest in preserving trees, controlling the cutting of trees, and protecting trees from damage. The protection of trees and wooded areas, and the establishment of street trees, add to the livability of the community. This is accomplished primarily by:
  - Enhancing the aesthetic beauty of the built environment
  - Minimizing urban stormwater run-off
  - Filtering air pollution
  - Promoting soil stability

  Section 9.1000 includes provisions for tree removal/replacement/protection; street trees; pruning of street trees and other public trees; and civil penalties, as detailed in Appendix F.

- **CDC Appendix 14.000 Significant Trees.** These standards and procedures protect trees that have been determined to add significant value to the community because of their exceptional beauty, distinctive size or shape, association with a historic person or event, or functional or aesthetic relationship to a visual or natural resource. During their annual review of nominated trees, Urban Forestry Subcommittee members conduct a physical evaluation of each tree or grove to determine if it is in a healthy growing condition and if it meets the above criteria.

The provisions in this section are intended to help protect the natural beauty of the City for current and future generations and to enhance the long-term value of trees meeting the criteria for inclusion in the Significant Tree Inventory. On Arbor Day 1994, the first trees to qualify as Significant Trees were recognized. At the time this Plan was written, there were 49 trees on the City's Significant Tree Inventory list.



Gresham Significant Trees.
Top to bottom: Northern red oak. Douglas-fir grove. Black walnut.

CHAPTER 5

PUBLIC PARTICIPATION AND PROGRAM ASSESSMENT

OVERVIEW

Community outreach was a key component in the development of this plan. Feedback from residents, along with urban forestry and business stakeholders, shaped the direction of Goals and Actions. Five primary methods of public participation were employed in the development of this plan from 2009 to 2011. These methods included a survey, community forums, focus groups, interviews and Urban Forestry Subcommittee and Natural Resources and Sustainability Committee meetings, and are described below.

PUBLIC PARTICIPATION PLAN

Urban Forestry Survey

In collaboration with staff, the Urban Forestry Subcommittee, Natural Resources and Sustainability Committee and Planning Commission, an online survey was developed to gauge residents' opinions and insights about urban forestry in Gresham.

The survey asked questions intended to identify community priorities, gauge perceptions of City services and the level of support for new programs, and to inform the Plan Goals, Policies and Action Measures. Appendix G, the Survey Results Report, includes a complete summary of the online survey findings.

It was available online from February to May 2010. A paper copy of the survey was also available during this time. There were 162 respondents from 16 Gresham neighborhoods. About 80 percent of the respondents were Gresham residents and 40 percent were Gresham business owners.

Key highlights from the Urban Forestry Survey follow:

Trees in Gresham

This section of the survey focused on questions about trees in Gresham and asked respondents to answer the questions in the role (i.e. resident, business owner) with which they most identified.

Question 7: How important are trees to you?

83 percent agreed that trees are very important.
15 percent agreed that trees are somewhat important.

Questions 9 and 10: Do you think the condition of Gresham's urban forest has improved, declined or remained the same in the last 10 years citywide (Q-9) and in your neighborhood (Q-10)?

50 percent observed a citywide tree decline and decline by neighborhood.

Street Trees

Street trees in Gresham are defined as those trees growing in the grassy strip between the sidewalk and the street or trees within 10 feet of the sidewalk. This section of the survey included questions related specifically to street trees.

Question 14: Were these street trees (or tree) planted within the last five years?

16 percent planted a street tree or trees along their street frontage in the last five years. The main reasons offered for not having street trees included:

- Infrastructure conflicts
- Lack of sidewalks
- Property damage concern

Tree Benefits

Respondents were asked to review a list of tree benefits. The survey instructed respondents to mark no more than five benefits that are of highest importance to them and five that are of lowest importance to them.

Question 19: The top five benefits that respondents observed as being of highest importance in Gresham included:

- Improve air quality – 90 percent
- Provide wildlife habitat – 83 percent
- Create livable neighborhoods – 80 percent
- Help control erosion – 77 percent
- Cool the city through shade – 76 percent

Other benefits cited in the open-ended results included:

- Trees provide windbreak
- Trees provide access to nature in the city

Most Important Planting Projects

The next few questions focused on tree management approaches and planting projects.

Question 28: Using a scale of 1 (Least Important) to 5 (Most Important), please rate the importance of the following types of tree-planting projects in the city of Gresham.

Within existing City parks/natural areas – Rating Average = 4.22

Along major roads and within medians – Rating Average = 3.94

In neighborhoods along residential street frontage – Rating Average = 3.80

Urban Forestry Programs and Services

The following two questions focused on programs and services provided by a typical municipal Urban Forestry Program.

Question 29: The top four urban forestry programs and services chosen by respondents included:

1. Requirements for retention and replanting in new developments
2. Significant Tree protection program
3. Hazard tree assessment for street trees
4. Consultation on street tree issues

Question 30: Additional services suggested by respondents in the open-ended results included:

- Incentive programs
- Sidewalk repair
- Maintenance programs
- City arborist
- Tree care workshops

Biggest Urban Forest Threats

The last section of the survey focused on the biggest threats and most-pressing challenges facing urban tree management in Gresham.

Question 32: The top three urban forest threats to Gresham offered by respondents included:

1. Tree removal during development – 84 percent
2. Tree removal by residents and/or property owners without a tree removal permit – 57 percent
3. Spread of invasive plant species – 40 percent

Other reasons offered in the open-ended results included:

- Lack of knowledge
- Enforcement
- Poor tree choice

Community Forums

Six community forums were held during the planning process:

1. Sept. 29, 2009 – Urban Forestry Issues
2. March 13, 2010 – Tree Forum on the Benefits of Trees
3. May 26, 2010 – Urban Forestry Goals and Policies
4. Aug. 2, 2010 – Urban Forestry Actions
5. Feb. 22, 2011 – Existing Tree Code Regulations
6. April 19, 2011 – Draft Urban Forestry Management Plan Open House

All forums were hosted at City Hall and designed to elicit important feedback from the community about urban forestry issues, benefits, Goals, Action Items and existing tree regulations. Publicity in advance of the forums included public notices to interested parties, website postings, social media and newspaper articles. Participants were given an opportunity to provide direct feedback on this Urban Forestry Management Plan's executive summary, seven chapters and the appendices.

Summary responses from all six meetings are provided in Appendix H.

Focus Groups

Four focus groups were also held during the planning process. These included:

- May 27, 2010 – Developer Focus Group
- June 23, 2010 – Community Focus Group
- July 27, 2010 – Johnson Creek Watershed Council Focus Group
- Feb. 23, 2011 – Business Focus Group

Three interviews were conducted with members of the business community including a retail shopping center developer, a Downtown restaurant owner and a West Gresham retail garden center owner. Summary responses from all four focus group sessions are provided in Appendix H.

Urban Forestry Subcommittee (UFS)

From 2009 to 2011, the seven-member Urban Forestry Subcommittee held 17 monthly meetings to provide direct input on the planning process and for review of major components of the Urban Forestry Management Plan.

Natural Resources and Sustainability Committee (NRSC)

From 2009 to 2011, staff attended six NRSC meetings to gain input on urban forestry issues, Goals, Action Items and existing tree regulations as they relate to the UFMP.

Neighborhood Coalition

From 2009 to 2011, staff attended three Neighborhood Coalition meetings:

- Dec. 8, 2009 – Urban Forestry Issues
- Feb. 8, 2011 – Existing Tree Code Regulations
- June 14, 2011 – Draft Urban Forestry Management Plan

Appendix I summarizes other outreach events conducted during the two-year planning process.

URBAN FORESTRY MANAGEMENT ISSUES

Like Gresham, many cities in the Pacific Northwest are growing and have experienced a significant decline in their urban forests over the past two decades. Cities are faced with the challenge of balancing development pressures while trying to improve their urban forests. This section describes a wide range of community concerns about current tree management on public and private property.

Generally, the Gresham community values and enjoys trees. However, there have been situations where trees have been either removed or topped (an improper maintenance practice) for blocking views and sunlight or dropping leaves or fruit. While shoppers appreciate tree-lined business districts, business owners often have maintenance and sign-visibility concerns. Issues identified during the Research and Analysis phase of the project are detailed in the November 2009 Urban Forestry Issues and Opportunities White Paper, included in Appendix J.

A number of issues were identified as part of the public involvement program using feedback from several stakeholders and community members. A list summarizing those issues is shown as Figure 4 on the next page.

The following is a list of current challenges to Gresham's urban forest. These collective challenges are organized within eight topic areas and not necessarily listed in order of importance. The Action Items in Chapter 6 are intended to address these issues.

1 Effects of Urbanization

Large-scale removal of trees as the city develops can have negative impacts on the city's environment, public operations and livability. Trees make cities livable, and urbanization without tree protection can negatively affect community livability or sense of place, and cause:

- Tree canopy loss
- Loss of wildlife habitat
- Increases in air and water pollutants
- Increases in atmospheric greenhouse gas
- Increases in stormwater management costs and other infrastructure costs

A key issue from past development is the replacement of existing urban tree canopy cover with impervious surfaces such as paved roads, parking lots and rooftops. The expansion of impervious surfaces from housing and transportation causes additional heat build-up in urban areas, which can increase tree mortality and negatively impact wildlife. The lack of trees in these areas also can increase the cost of maintaining roads, cooling buildings and managing stormwater, and lessen a community's overall appeal.

Figure 4. Summary of Gresham's Tree Issues, City of Gresham, 2010


Effects of Urbanization
- Community livability
- Wildlife habitat
- Air and water pollutants
- Infrastructure costs
- Green house gas emissions


Tree Canopy
- Current tree canopy cover is 28.1%
- Balancing development pressures with canopy expansion efforts
- What should Gresham's Tree Canopy Target be?


Lack of a Shared Community Vision for Trees
- Trees benefit many users
- Various users have their own vision for tree use
- How should we manage these different uses together?


Lack of Outreach
- Education and outreach efforts can increase awareness on ways to preserve, protect and expand Gresham's tree resources.
- Do you have specific outreach or stewardship ideas to share?


Infrastructure Conflicts
- Sidewalks
- Power lines/light poles
- Street and retail signage
- Shading gardens
- Solar access
- Views
- Storm drains


Maintenance Issues
- Routine maintenance of trees
- Lack of role definitions for citizens and City staff
- Lack of requirements/incentives on private property
- Lack of adequate funding for tree maintenance, irrigation and inspection


Tree Selection and Placement
- Right Tree in the Right Place depends on:
  - Appropriate tree species
  - Diversity of tree species
  - Tree health
  - Public safety measures


Development Code
- Lack of clarity
- Lack of specificity for landscaping plans
- Limited enforcement
- Inconsistent tree removal and replacement process

GRESHAM'S TREE ISSUES

Source: City of Gresham Comprehensive Planning, 2010.

2 Tree Canopy

A significant challenge for a rapidly growing city like Gresham is maintaining and expanding tree canopy, which is the area of ground that is directly underneath a tree. Tree canopy is one of the most common metrics communities use to evaluate the health of their urban forests. Current tree cover in Gresham is estimated at 28 percent.

In 2001, American Forests, a nonprofit partner of the U.S. Forest Service, conducted a regional ecosystem analysis and discovered that between 1972 and 2000, the Portland Metro Area lost 22 percent of its heavy canopy cover. [1] Additional data confirms that over the last 15 years, naturally forested areas of the Pacific Northwest have lost 25 percent of their tree canopy cover while impervious surfaces increased about 20 percent. [2] Figures 5 through 10 show aerial examples of tree canopy that has been replaced, in some cases almost entirely, by impervious surfaces in six separate industrial, commercial, civic and residential projects located in Gresham.

These changes in land cover, coupled with the City's desire to transition into a more sustainable future, are important reasons why the City should examine how to best preserve the existing natural canopy and manage newly planted trees.

3 Lack of a Shared Community Vision for Trees

Trees benefit many users of the urban forest, each with his or her personally developed sense of the right balance between development and tree preservation. The lack of a community-based visioning process for the urban forest has resulted in an uncoordinated system of tree regulations and management practices, or inconsistent enforcement of regulations and missed opportunities for community involvement in the protection, improvement and expansion of the city's tree canopy.

For instance, other than the riparian shade-management program, the City does not have a program or management practices in place to identify what other areas of the city are deficient in tree canopy. Additionally, no tracking mechanisms currently exist to identify where public trees are removed or could be planted. Without a centralized municipal urban forestry program it is difficult to have a focused mission to achieve a shared vision for urban forestry.

A shared vision for the urban forest, for example, could use tree canopy as a measure of tree health. Over the past few decades, increasing commercial and residential development has lead to a reduction in canopy cover, which has contributed to an increase in the costs of water quality infrastructure, street maintenance and building cooling.

4 Lack of Stewardship Opportunities and Outreach on the Value of Trees

Trees in the urban environment are a valuable resource that benefits visitors, landowners, business owners and residents. Education, stewardship opportunities and outreach efforts are ways to increase awareness within the business community and among residents. While the AmeriCorps stewardship outreach program has engaged a number of streamside landowners over the last 10 years, the City does not have a concerted outreach effort in place specifically to preserve, protect and improve the City's urban tree resources.

Gaps exist in education, stewardship and outreach, including: 1) a lack of knowledge about sustainable landscape practices and; 2) limited partnerships to build on the City's outreach efforts.

With better outreach and stewardship opportunities, the community can better realize the benefits of the urban forest.

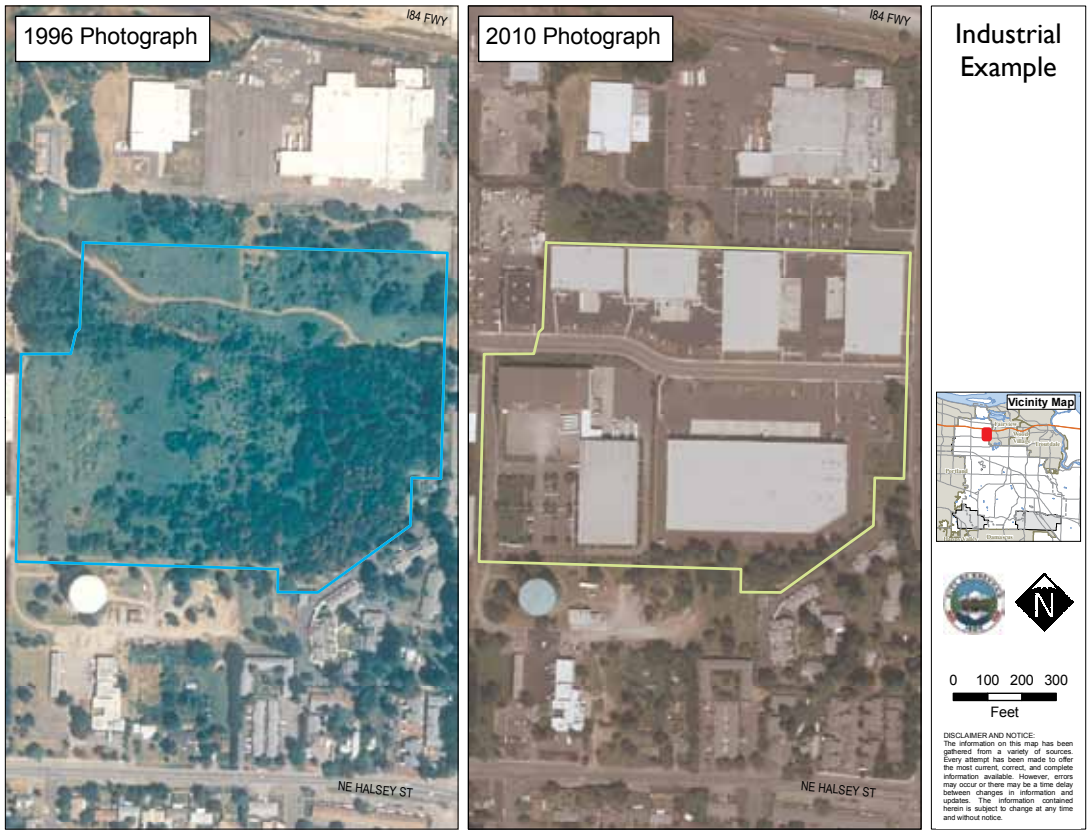
[1] Regional Ecosystem Analysis for the Willamette/Lower Columbia Region of Northwestern Oregon and Southwestern Washington State: Calculating the Value of Nature. (American Forests and USDA Forest Service, 2001) p. 10. and City of Vancouver Urban Forestry Management Plan, 2007.

[2] www.planning.org/research/forestry/index.htm (Accessed on 10/28/2009).

Figure 5. Commercial tree canopy change in Gresham from 1996 to 2010

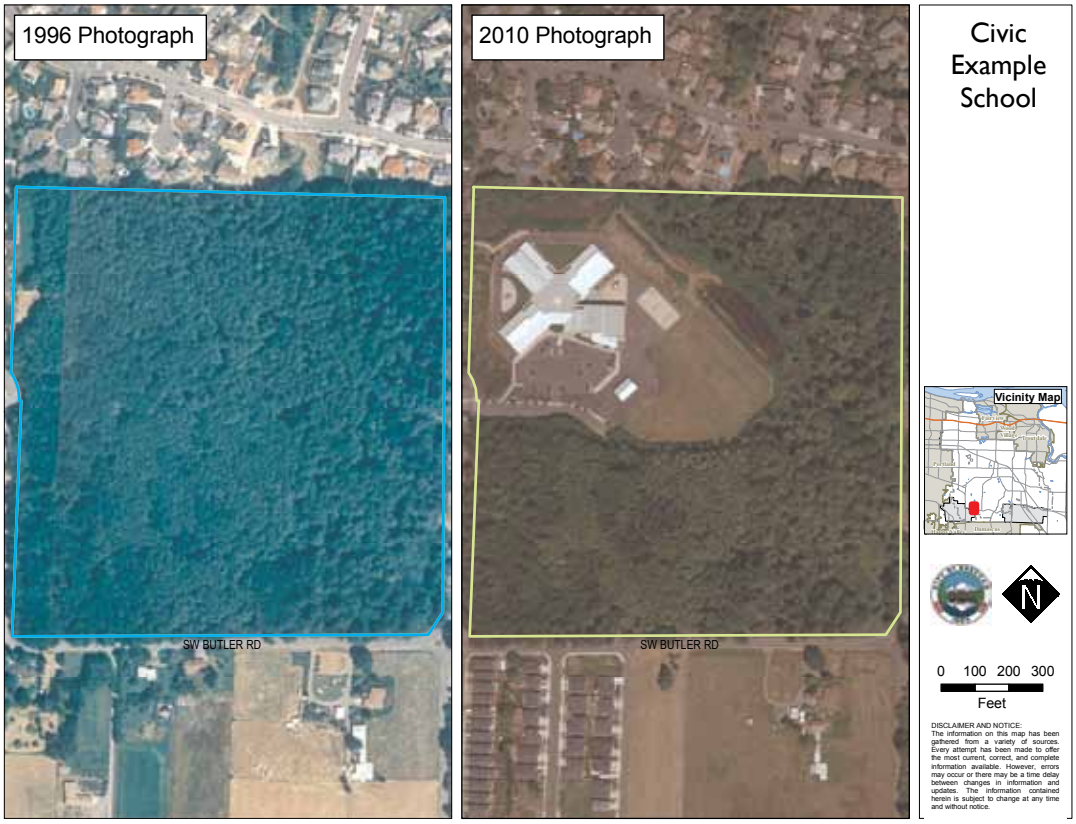
Proposed Walmart site at SE 182nd and West Powell Boulevard.

Figure 6. Industrial tree canopy change in Gresham from 1996 to 2010



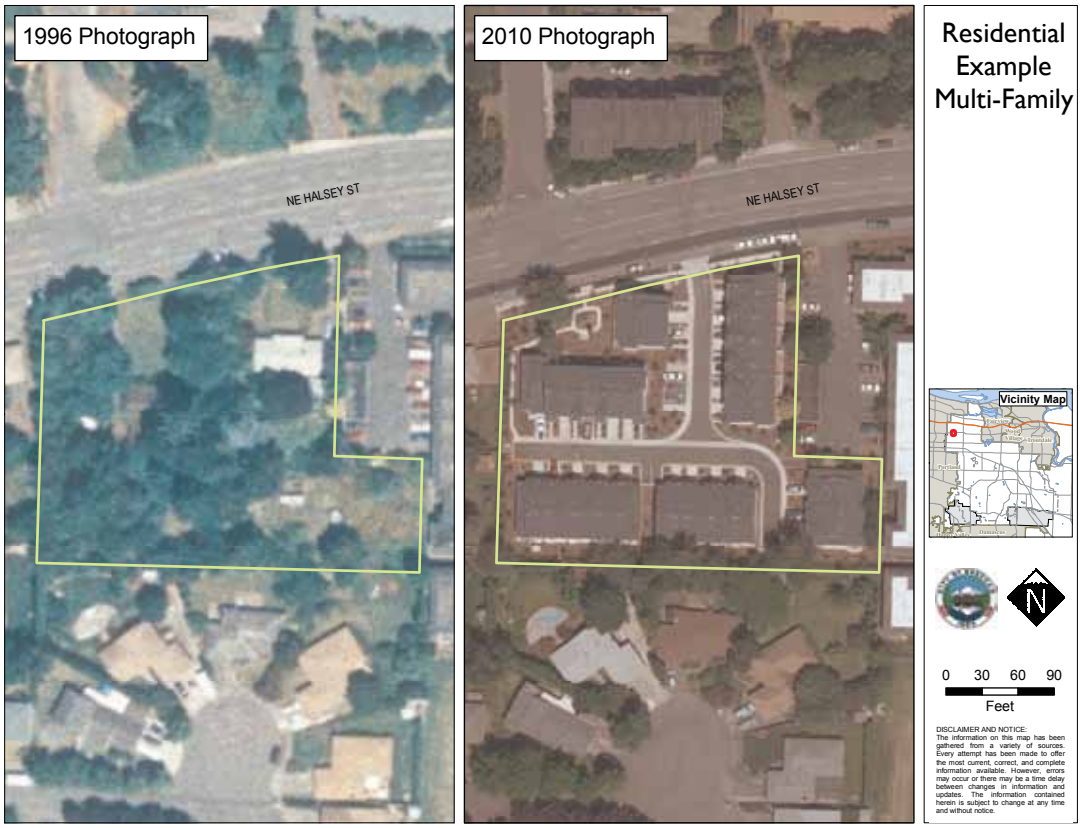
Industrial property near 201st and San Rafael.

Figure 7. Civic tree canopy change in Gresham from 1996 to 2010



Butler Creek Elementary School.

Figure 8. Residential tree canopy change in Gresham from 1996 to 2010

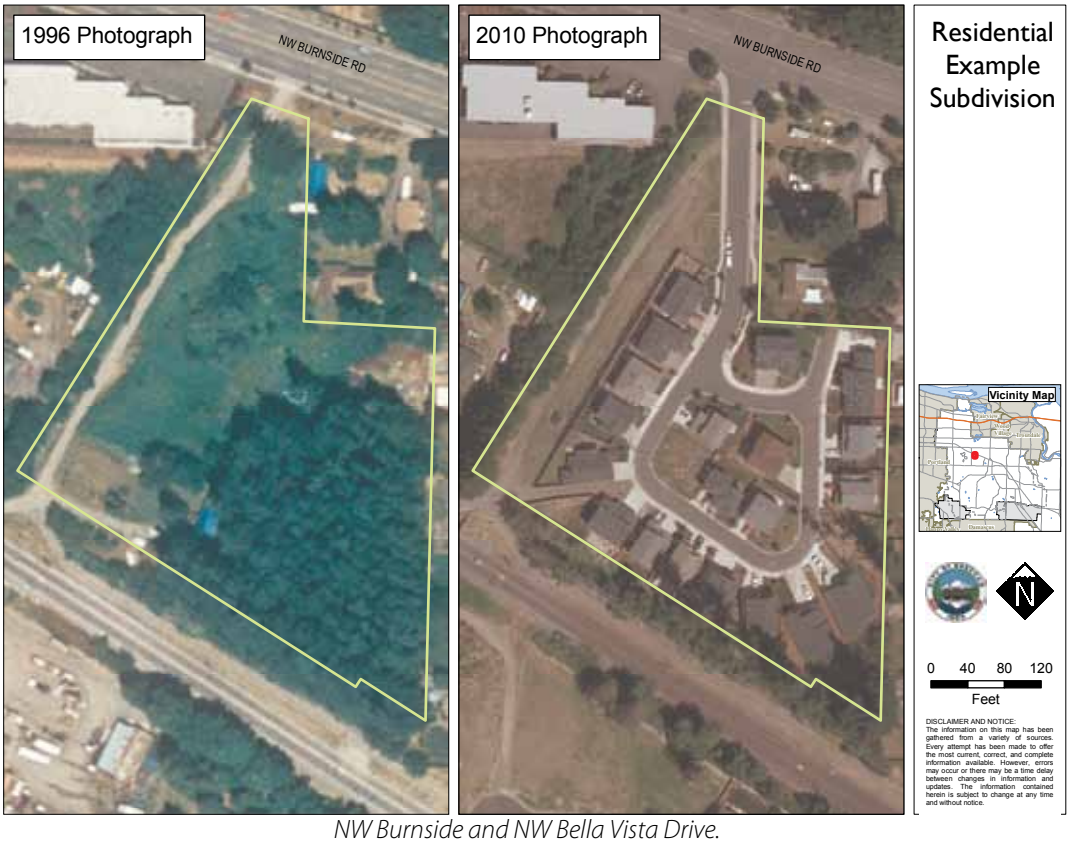


NE Halsey Ave and NE 169th.

Figure 9. Residential tree canopy change in Gresham from 1996 to 2010

SE Anderson Road and SE Hilyard Court.

Figure 10. Residential tree canopy change in Gresham from 1996 to 2010



NW Burnside and NW Bella Vista Drive.

5 Infrastructure and Resource Conflicts

Tree placement and type can conflict with infrastructure and other valued resources. Conflicts identified include:

- **Sidewalks.** Tree roots may buckle infrastructure when planted in constrained sidewalk areas.
- **Power lines/light poles.** Trees may interfere with overhead power lines and light poles.
- **Solar panels.** Trees can potentially block sunlight needed for solar-panel operation.
- **Shading gardens.** Depending on placement, mature trees can limit the amount of sun received by neighboring gardens.
- **Streets and commercial signs.** Trees can obstruct drivers' or customers' view of road or business signs.
- **Roof gutters and downspouts.** Leaf litter may clog downspout pipes.
- **City storm sewers and drains.** Storm sewers and drains often clog with leaves or pine needles, requiring maintenance crews to clean them to prevent flooding.
- **Views.** Trees on residential and commercial properties may interfere with adjacent property owners' desired views.

The City does not have a program in place to address conflicts such as tree roots lifting sidewalks in the right-of-way or on residential property. Better coordination of infrastructure layers and tree placement may be one way that City staff and developers can avoid these potential conflicts during the pre-construction phase.

6 Maintenance

Routine maintenance of trees can greatly increase the health and longevity of the tree canopy and help minimize conflicts. The City's codes do not address maintenance, and the City's management practices on maintenance are not well coordinated.

Barriers to implementing both ongoing and periodic preventative maintenance programs for public and private property include:

- Lack of clearly defined roles for citizens and City staff
- Lack of requirements and incentives for maintenance on private property
- Lack of knowledge about sustainable landscaping practices
- Lack of central oversight for vegetation management of public trees

With the exception of the Streamside Property Outreach and Fee for Service programs, private property owners receive little guidance about how to maintain healthy trees or which practices to avoid. (Tree-topping, for example, renders a tree vulnerable to disease.) Lack of adequate funding and resources for tree maintenance, irrigation and inspection also prevent the City and property owners from implementing a more proactive approach to tree maintenance on public and private property.

Left and right: Examples of tree-topping.

7 Tree Selection and Placement (Right Tree in the Right Place)

Selecting and planting the right tree species and providing for variety is critical for the health and survivability of tree canopy. An urban forest diverse in both tree age and tree species is more resilient and ensures that no single event, pest or disease wipes out a significant portion of the city's trees at any one time.

Similarly, many trees were or continue to be planted in constrained right-of-way planting strips diminishing tree health and survivability. When trees are required, such as trees in commercial parking lots, the right trees should be chosen to provide shade, and to avoid negative consequences such as fruit falling on cars.

Like many cities across the Portland Metropolitan Area, Gresham is growing and continually faces the challenge of balancing urban growth with environmental protection. Trees in urban areas are less resilient than trees in natural areas because they lack sufficient space and irrigation.

Tree-placement issues, as shown in Figure 12, include sidewalk and power line conflicts.

Because of the narrowness of many street planting strips in Gresham, property owners are occasionally forced to remove a maturing tree or replace a sidewalk damaged by tree roots, at significant expense. Similarly, planting trees underneath power lines can result in tree-topping, as shown in the two bottom photos in Figure 12. Planting the "wrong tree in the wrong place," as shown in these photos, creates potential public safety hazards: trees weakened by topping, fires and power outages resulting from branch interference with high-voltage transmission lines.

Figure 12. Typical tree-placement issues that occur in and around Gresham

Tree and sidewalk conflicts.

Tree and power line conflicts.

Topped trees under power lines.

8 Development Code

The City has a number of tree regulations establishing a framework for tree preservation, planting and care. Gresham's existing tree code is located in Section 9.1000 of the Gresham Community Development Code (CDC). These Code sections are designed to retain existing trees along public rights-of-way, on public lands and on multifamily, commercial and industrial property.

However, many residents and developers agree that these regulations are ineffective and difficult to interpret, and that they produce inconsistent delivery of urban forestry programs and services.

The following is a documented list of concerns with the Development Code's tree regulations:

- Lack of clarity in tree-protection standards. For instance, while some provisions require landscaping plans in parking lots, others do not. There is also not a clear Code protocol to follow to coordinate street tree placement with the placement of other infrastructure such as driveways and streetlights.
- Outdated tree provisions are scattered throughout the Code, parts of which are more than 20 years old. The Code has had minimal updates over the years and is considered user-unfriendly by many within the development community. This has resulted in interpretation inconsistencies that have affected public and private projects.
- Limited Code compliance measures. Currently, Gresham's Code Compliance Division does not have a clearly defined Code enforcement process for tree issues and lacks resources to properly administer and translate Code requirements on the ground.
- Inconsistent tree removal and replacement process. The tree Code provides limited language to specify replacement and mitigation requirements, resulting in concerns that the benefits offered by trees – and especially by mature trees – may be permanently lost with removal. Limited code language exists to support the City's tree fund mitigation tool.
- Limited protections for large-canopy trees with high community value. Studies show that large trees have significantly more value than smaller trees. In Gresham, that has raised questions about whether the City's current minimum size for regulated trees is too small.

Several of the Development Code issues discussed in this section are expanded upon in the November 2009 Urban Forestry Issues and Opportunities White Paper, included in Appendix J. The Development Code issues described in the White Paper are organized under three headings: 1) standards related to tree regulations; 2) Code compliance; and 3) public tree management.

A list of other municipal urban forestry management plans that were reviewed and consulted in preparation of this plan is included in Appendix K.

CHAPTER 6

IMPLEMENTATION

RECOMMENDED GOALS, POLICIES AND ACTION ITEMS

After analyzing the needs and desires of Gresham residents and studying the best management practices related to urban forestry, the Urban Forestry Subcommittee recommended the following Goals, Policies and Action Items to guide Gresham's urban forestry efforts over the next 20 years.

Urban Forestry Plan Goals are general statements indicating a desired end, or direction the City will follow to achieve that end. Goals frame how the City, residents and others should work towards meeting the community's identified urban forestry needs.

Urban Forestry Plan Policies are more specific than Goals and are statements identifying Gresham's position and more definitive course of action. They often identify the City's position with regard to implementing goals.

Urban Forestry Plan Action Items are detailed recommendations that outline a specific City project or standard to implement Goals and Policies. The following 28 Action Items will be used to update existing Action Measures in the City's Comprehensive Plan.

Left: Nadaka Nature Park.

Right: Trees enhance the shopping experience, downtown Gresham.

GOAL 1 – Create a High-Quality Urban Forest in Gresham

Policy

1.1 Protect, preserve and enhance Gresham's urban forest.

Action Items

A. Simplify and consolidate tree codes, making them clear to the public and implementable by City staff.

B. Develop incentives to promote tree retention and planting.

C. Develop an Arterial Street Tree Plan to enhance the visual appeal of the City's shopping, employment and civic districts.

Policy

1.2 Maximize tree-canopy cover to expand Gresham's urban forest.

Action Items

A. Develop a process to establish meaningful tree-canopy coverage goals throughout the City, taking into account community desires, tree function and the ecosystem. As one measure of performance over time, periodically compare GIS measurements of canopy with goals for various land uses.

B. Perform a tree inventory of all publicly owned street and developed park trees.

C. Help neighborhoods achieve distinct identities by listing specific trees for planting in public rights of way.

D. Promote and incentivize the use of large-canopy trees in appropriate areas to provide maximum benefits.

Policy

1.3 Maximize the ecological, environmental and economic benefits of the urban forest.

Action Items

A. Conduct a tree health assessment and identify specific varieties that will survive Gresham's urban environment, east winds and occasional winter ice storms.

B. Calculate the economic benefits of trees in Gresham.

C. Develop and implement an invasive species control strategy citywide to safeguard the tree canopy.

D. Promote the use of native tree species in public and private lands to enhance wildlife habitat in the City.

E. Develop a methodology to assess the carbon offset from Gresham's trees.

GOAL 2 – Establish Proactive Public Tree Maintenance and Management Practices

Policy

2.1 Manage the urban forest to maximize community benefits for all.

Action Items

A. Provide technical arborist expertise to assist in development review, respond to citizen inquiries and assess individual tree-health issues.

B. Prepare and distribute a "State of Gresham's Urban Forest" report, to be updated every five years.

Proper maintenance is important for healthy trees.

Policy

2.2 Improve interdepartmental communication and coordination regarding trees.

Action Items

A. Hold quarterly meetings between City department representatives and the Urban Forestry Subcommittee at City Hall. Connect with residents by hosting a citywide celebration of Gresham's urban forest every two years.

B. Develop design phase and preconstruction coordination protocols to ensure the "Right tree is installed in the right place."

C. Work with City departments to make tree preservation and tree planting a priority in their plans and operations.

Policy

2.3 Adopt best management practices and resource management tools to improve tree maintenance citywide.

Action Items

A. Establish new maintenance funding sources for public trees (i.e., partnerships, grants, Gresham Tree Foundation, Friends of the Arboretum, sustainable harvesting, etc.).

B. Review the Public Works Standards and City Operations policies for the maintenance of public trees and modify as necessary to reflect best tree management practices.

Policy

2.4 Improve the health and care of Gresham's street trees.

Action Items

A. Update Street Tree List to reflect "Right Tree, Right Place" strategies for planter strip widths, medians, parking lots and utility corridors.

GOAL 3 – Promote Community Partnership and Education Opportunities for Urban Forestry

Policy

3.1 Promote partnerships between residents, neighborhood associations, government, nonprofits and businesses.

Action Items

A. Partner with service organizations such as Friends of Trees to plant street and open space trees.

B. Partner with tree/landscape contractors to distribute informational materials.

C. Work with the Urban Forestry Council Advisory Subcommittee to develop a prioritized list of urban forest enhancement opportunities and projects citywide.

Partners help educate and plant trees at the Gradin Sports Park arboretum during the 2011 Arbor Day event.

Policy

3.2 Increase public awareness and engage the community in active stewardship of the urban forest.

Action Items

A. Promote educational offerings and informational materials on topics such as:

- Tree planting promotion and workshops.
- Tree Maintenance Best Management Practices, Technical Tree Manual and Stewardship Guide.
- Value of trees to residents, business owners, Realtors, industries, schools and community groups.

B. Create prominent tree amenities such as the Arboretum at Gradin Sports Park, and work with schools, nurseries or other land owners to construct tree species test plots.

C. Develop a Tree Mitigation Plan Manual providing replacement and other options for public and private development applicants. Other options include paying into a tree fund in lieu of on-site planting.

D. Establish a Tree Hotline, similar to the City's current Planner on Duty Hotline, for residents to ask tree-related questions.

E. Enhance public awareness of trees by providing interpretive species labels at prominent public places such as the Gradin Sports Park arboretum, Center for the Arts Plaza, and along key pedestrian streets. This would include botanical name, common name and date planted.

In summary, this list of three Goals, 11 Policies and 28 Action Items serves to guide urban forest management in Gresham. Ultimately, these measures can put the community on a critical path towards achieving a healthy urban forest.

IMPLEMENTATION OF SHORT- AND LONGER-TERM ACTION ITEMS

Communities that adopt an Urban Forestry Management Plan make an important statement about trees, the vital role they play in community livability and the community's commitment to maintaining a healthy urban forest.

Here in Gresham, public feedback indicates this community understands both the necessity and the complexity of managing a 21st century urban forest – and that it is ready to take the next steps.

Even so, implementation of this Plan will require adaptability to changing conditions and must remain a collaborative effort between the City and Gresham community.

Trees contribute to our daily aesthetics..

Collaborative stewardship requires the participation of landowners, users and managers of natural resources, in addition to individuals and groups involved in the management of other urban functions, such as commercial developers, City planners, City public works providers, nonprofit groups, utilities and residents. [1]

While the short-term actions in this Plan provide a firm starting point, it's important to note that the timing of implementation of the Action Items will depend on several factors:

- City budget
- Staffing needs and availability
- Availability and willingness of potential partners
- Implementation priority level (i.e. High, Medium, Low)

The City may want to evaluate the development of a more-detailed Implementation Plan for the UFMP Action Items. The Implementation Plan would evaluate the actions further based on the factors listed above. This evaluation could also include performance measures and, if completed, results from the Public Tree Inventory.

[1] Connecting People with Ecosystems: An Assessment of Our Nation's Urban Forests. USDA Forest Service. Dwyer, J.F., D.J. Nowak, M.H. Noble, and S.M. Sisinni. 2000.

There are a total of 28 Action Items, supporting or fulfilling the three key Goals identified in this Plan. All Action Items were prioritized with input from the public, advisory committees and staff, then organized as *Short-Term and Longer-Term Actions*. Time frames for completion are not spelled out, as implementation is contingent upon funding and staffing levels. This organization is described below.

Short-Term Actions: to be implemented in the near term without adding resources.

Action 1: Simplify and consolidate tree codes, making them clearer to the public and implementable by City staff.

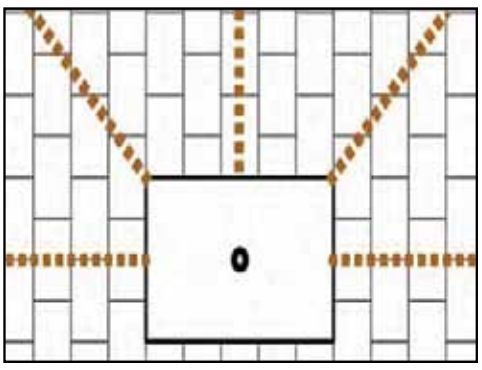
Action 2: Update the City's Street Tree List to reflect "Right Tree, Right Place" strategies for planter-strip widths, medians, parking lots and utility corridors. The list should not include invasive species and should reflect species diversity.

Action 3: Promote educational offerings and informational materials, such as:

- Tree planting promotion and workshops.
- Tree Maintenance Best Management Practices, Technical Tree Manual and Stewardship Guide.
- Value of trees to residents, business owners, Realtors, industries, schools and community groups.

Action 4: Develop a process to establish meaningful tree-canopy coverage goals throughout the City, taking into account community desires, tree function, and habitat needs/forest diversity. As one measure of performance over time, periodically compare GIS measurements of canopy with goals for various land uses.

Action 5: Hold quarterly meetings between City department representatives and the Urban Forestry Subcommittee at City Hall. Connect with residents by hosting a citywide celebration of Gresham's urban forest every two years in addition to the annual Tree City USA celebration.



Action 2 Strategies

Left to right: Open soil area. Covered soil. Bottom: Root path.

Longer-Term Actions: to be implemented in the future as resources allow.

1) Develop Incentives for Tree Planting and Retention.

Action 6: Develop incentives to promote tree retention and planting.

Action 7: Promote and incentivize the use of large-canopy trees in appropriate areas to provide maximum benefits.

Action 8: Promote the use of native tree species on public and private lands to enhance wildlife habitat in the city.

Action 9: Develop a Tree Mitigation Plan Manual providing replacement and other options for public and private development applicants. Other options include paying into a tree fund in lieu of on-site planting.

2) Enhance Partnerships.

Action 10: Work with the Urban Forestry Council Advisory Subcommittee to develop a prioritized list of urban forest enhancement opportunities and projects citywide.

Action 11: Partner with service organizations such as Friends of Trees to plant street and open space trees.

Action 12: Partner with tree/landscape contractors to distribute informational materials.

Action 13: Help neighborhoods achieve distinct identities by listing specific trees for planting in public rights of way.

Action 14: Enhance public awareness of trees by providing interpretive species labels at prominent public places such as the Gradin Sports Park arboretum, Center for the Arts Plaza, and along key pedestrian streets. This would include botanical name, common name and date planted.

3) Collect Data.

Action 15: Perform a tree inventory of publicly owned street and developed park trees. Use volunteers as available.

Action 16: Conduct a tree health assessment and identify specific varieties that will survive Gresham's urban environment, east winds and occasional winter ice storms.

Action 17: Develop a methodology to assess the carbon offset from Gresham's trees.

Action 18: Calculate the economic benefits of trees in Gresham.

Action 19: Prepare and distribute a "State of Gresham's Urban Forest" report, to be updated every five years.

Action 8: Native trees provide homes and food for a variety of species of native wildlife.

Top: Northern flicker. ©Nature's Pics (www.naturespicsonline.com)

Bottom: Varied thrush. CC Gerry

4) Coordinate City Policies and Operations and Enhance the City's Arborist-Related Capabilities.

Action 20: Establish new maintenance funding sources for public trees (i.e. partnerships, grants, Gresham Tree Fund, sustainable harvesting, etc.)

Action 21: Provide technical arborist expertise to assist in development review, respond to citizen inquiries and assess individual tree-health issues. This could include contracting for arborist services.

Action 22: Establish a Tree Hotline, similar to the City's Planner on Duty, for residents to ask tree-related questions.

Action 23: Work with City departments to make tree preservation and tree planting a priority in their plans and operations.

Action 24: Review the Public Works Standards and City Operations policies for public tree maintenance and modify as necessary to reflect best management practices.

Action 25: Develop design phase and preconstruction coordination protocols to ensure the "Right tree is installed in the right place."

Action 26: Develop and implement an invasive species control strategy citywide to safeguard tree canopy.

5) Design and Construct Tree Amenities.

Action 27: Create prominent tree amenities such as the Gradin Sports Park arboretum, and work with schools, nurseries or other landowners to construct tree species test plots.

Action 28: Develop an Arterial Street Tree Plan to enhance the visual appeal of the City's shopping, employment and civic districts.

SUMMARY AND CONCLUSION

Urban forests are a strategic public and private investment, vital to livability and the economy, and an important natural resource, as reflected in this plan. To thrive, Gresham's urban forest must remain a high community priority, attracting both public-private partnerships and the resources required to address our built environment and our natural environment. Proper consideration of trees during the planning and design phase of development will translate into lower future maintenance needs and costs. This plan balances regulatory and aspirational goals, providing a series of actionable steps for the betterment of Gresham's urban forest.

Top: Chestnut tree, one of Gresham's Significant Trees.

Bottom: A walk in the park. © Nancy J. Smith