Salem Tree Report:
2019 Summary of Tree Projects

CITY OF Salem
AT YOUR SERVICE

Public Works Department

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1 THE URBAN TREE CANOPY

Benefits of Trees

Trees make cities more livable, improve business, and encourage people to walk and get outside. Extensive research has been done over the last decade on the multiple economic, environmental, and social benefits that trees provide. Some of these benefits can be quantified, even monetarily, such as stormwater reduction, air quality promotion, and carbon sequestration that helps reduce greenhouse gases. Trees also help reduce the urban heat island effect by providing shade and reducing temperatures. They provide "green infrastructure" that grows and increases in value over time.

Trees also provide less tangible but equally important benefits, such as natural beauty, a sense of place and identity, increased social interaction, and reduced crime. Healthy cities have healthy tree canopies.

Significant Trees and Heritage Trees

White oaks, although reduced in population over the years because of development, are still found in the area. The native white oak is, to this day, a signature tree of Salem and has a special place in Salem's history. Larger diameter (24-inch or greater diameter at breast height) Oregon white oaks are classified as "significant trees" and are given special protection under Salem's Tree and Vegetation Preservation Code, Salem Revised Code (SRC) Chapter 808, which is administered by the Community Development Department. In addition to white oaks, oth-

Figure 1: Healthy Trees Make for Livable Cities

er trees located along riparian areas (streamside areas) are also protected under this code.

Trees can be designated as "heritage trees" under SRC Chapter 808. Heritage trees must be nominated by the property owner and approved by resolution of the City Council. Heritage trees are so recognized due to their location, size, age, botanical interest, commemorative planting, or historic significance. Once designated, heritage trees receive protection under SRC Chapter 808.

Community Forestry Strategic Plan

In 2013, Council adopted the Community Forestry Strategic Plan. This plan provides specific goals and actions to protect and increase Salem's urban tree canopy. The six goals of the Strategic Plan are:

Goal 1: Protect, increase, and enhance Salem's tree canopy;

Goal 2: Increase education and outreach about tree benefits, community forestry program, tree regulations, and incentives;

Goal 3: Develop support at political, management and public levels;

Goal 4: Improve City coordination, communication, and codes related to trees;

Goal 5: Develop and implement a Community Forestry Management Plan; and

Goal 6: Establish a stable funding for the Community Forestry Program.

Urban Tree Canopy Assessment

Public Works measures the urban tree canopy every 10 years to monitor and track change over time. These assessments are required every census year per SRC Chapter 808. This census-year canopy assessment is conducted *"…for the purposes of measuring the effectiveness of this Chapter and other development-related ordinances in preserving and improving the amount of tree canopy area within the City or the Salem-Keizer Urban Growth Boundary"* (SRC Chapter 808.060(b)). In 2009 Salem had 18.3% canopy. In 2013 the Community Forestry Strategic Plan set a goal of 23% canopy and focused tree planting efforts on City properties and low canopy neighborhoods. See the Community Forestry Strategic Plan for additional information.

In 2019 the City conducted its latest canopy assessment. The 2019 study determined the City's tree canopy is 24%, a 6% increase from the previous study in 2009. Based on the assessment, all neighborhood association areas gained canopy, ranging from 2% in Lansing Neighborhood to 8% in Southwest Area Neighbors. Using the previously established 75th percentile methodology for canopy goal setting, the new city canopy goal will be 28% by 2030. Tree planting efforts will continue to focus on low canopy areas and available planting areas along street rights-of-way within the City.

The environmental benefits of Salem's tree canopy were calculated in the assessment. According to the report, Salem's trees provide $80 million in total annual benefits, including air quality, stormwater and carbon sequestration.

2019 Program Participation

Salem has a variety of programs and initiatives that help to promote and enhance our urban tree canopy. Initiatives like "Tree City USA" and "Cities4Forests" connect Salem with national and international municipalities and experts.

Figure 2: Street Trees Provide Many Aesthetic Benefits

Our Urban Forestry program within the Parks Operations Division maintains, removes, and plants trees along our city streets, in public parks, and in other City properties. Contracts with nonprofits and contractors such as "Friends of Trees" and "Treecology" expand our planting capacity while also providing outreach, education, and volunteer opportunities.

Tree City USA

The City of Salem has been a Tree City USA for 43 years. Tree City USA is a program from the Arbor Day Foundation that began in 1976. The program recognizes and guides achievement in four core standards of sound urban forestry management: 1) maintaining a tree advisory board; 2) having a community tree ordinance; 3) spending at least $2 per capita on urban forestry; and 4) celebrating Arbor Day and having an Arbor Day Proclamation.

The City of Salem is proud to be one of only 17 cities in the country to have been a charter participant in the Tree City USA program and in 2019 celebrated 43 consecutive years of participation. In 2015 Salem became a "Sterling City," having received 10 Arbor Day Foundation "Growth Awards"

in recognition of innovative and/or increased program participation. Salem continues to be a Sterling City for our work in 2019.

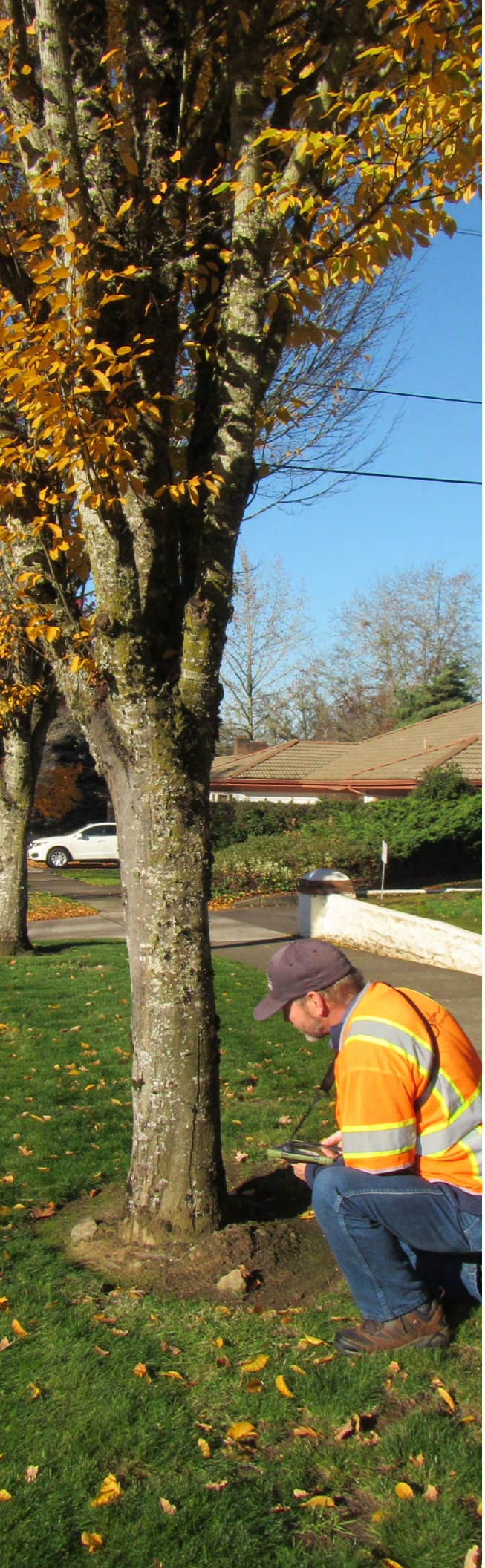
Figure 3: 2019 Arbor Day Planting at Bill Riegel Park

Arbor Day in the US was started in Nebraska in 1872 "to inspire people to plant, nurture, and celebrate trees." Each year, Salem hosts an Arbor Day tree planting event for community volunteers that improves Salem's urban tree canopy. In recent years, the Arbor Day planting event has been coordinated by Friends of Trees, an Oregon-based nonprofit that organizes volunteer tree planting events. The 2019 Arbor Day planting was at Bill Riegel Park and involved 54 volunteers.

Cities4Forests

In 2018, the City of Salem signed on as a founding member of Cities4Forests, a new initiative that focuses on the value and benefits of trees in cities and forests across the globe. It is an international effort spearheaded by the World Resources Institute. It aims to cultivate awareness and stimulate action on the part of urban residents to recognize the importance of trees and forests to human well-being. In urban areas, the "inner forest" is a critical component of a healthy city. City trees improve public health, reduce air pollution, protect water quality, store carbon, and help a city become climate resilient. Cities4Forests has a goal of integrating trees into the ways cities develop and grow, and of harnessing the value of trees to meet multiple objectives, such as: improving public health; protecting drinking water supplies; and providing benefits for air quality, water quality, and heat island mitigation.

Membership in the Cities4Forests complements the City's current urban forestry programs. Cities4Forests is a voluntary coalition involving mayors' offices from around the world. Salem was among the 50 founding cities, which also included: New York (NY), Philadelphia (PA), Seattle (WA), Portland (OR), Eugene (OR), Salt Lake City (UT), Sacramento (CA) Oakland (CA), Manchester (UK), Oslo (Norway), Rio de Janeiro (Brazil), Bogota (Columbia), Mexico City (Mexico), Johannesburg (South Africa), Amman (Jordan), and Mumbai (India).



Cities4Forests coordinated with a tree funding organization, One Tree Planted, to donate volunteer t-shirts for the 2019 Arbor Day tree planting event at Bill Riegel Park in April. Cities4Forests also hosted international webcasts and conference calls to share urban forestry information between cities.

In 2019 City staff presented at the 56th International Making Cities Livable conference in Portland, Oregon. The title of the talk was "Growing an Urban Forestry Program in Salem, Oregon" and discussed the process the City has undertaken to increase and improve its urban tree canopy.

2019 Street Tree Sample Inventory

During the summer of 2019, the City of Salem conducted its second street tree inventory. This effort followed the 2018 random sample inventory. In 2019, an Urban Forestry employee expanded the 2018 4% survey with an additional 5.13% of street segments for a combined sample size of just over 9% of all street segments. The employee used a GPS-enabled tablet to map and assess each tree and upload the information into a database.

The primary objective of the street tree inventory is to gain a more detailed understanding of Salem's urban forest structure. By knowing the location, species, condition, and size of existing street trees, the City can implement more effective practices for planting and maintaining healthy trees in the future. The Salem Street Trees Sample Inventory report has a detailed description of the survey process and results.

Figure 4: Inspecting a Street Tree

Key Findings

- Based on the combined 2018/2019 statistical sample inventory with a relative standard error of 6.20%, Salem's estimated street tree population totals 42,892 (+/- 2,661) trees.
- The maple family (*Sapindaceae*, also known as *Aceraceae*) represents the most abundant tree type among Salem's street trees (32%). Norway maples (*Acer platanoides*) and red maples (*Acer rubrum*) are the most commonly found species.
- Salem's high percentage of maples is an area of vulnerability for the city, as it exceeds urban forestry guidelines for maintaining diversity and resilience in the canopy.
- Most street trees were found to be in good or fair condition (18.1% and 66.5% respectively).
- Younger trees and evergreen trees are underrepresented in the street tree population.
- The annual environmental and aesthetic benefits that Salem's street trees provide is valued at an estimated $4,116,336.

Recommendations

The Salem Street Tree Survey has provided a much better understanding of our street tree population and produced several recommendations for the future.

- Plant more trees! Younger trees are needed to replace trees as they age
- Select more diverse species for new plantings. Avoid maples, and deemphasize cherries, pears and ash.
- Plant more evergreen trees to achieve greater environmental benefits from year-round canopy.
- Plant large-maturing trees where space allows.
- Use empty site data to identify planting opportunities, focus on low canopy neighborhoods.
- Expand the street tree inventory for greater accuracy and usability.

Future tree plans and policy will be informed as practicable by the information and recommendations gained from the Street Tree Survey.

2 TREE PLANTING AND MAINTENANCE

2019 Overview

Tree planting and maintenance of City-owned trees in 2019 was performed by three groups: Salem Urban Forestry, Friends of Trees, and Treecology.

Trees on City-owned property are managed by the City's Urban Forestry Section staff in the Parks Operations Division of Public Works. To supplement the work of Urban Forestry, Public Works has contracted over the last seven years with Friends of Trees, a nonprofit organization, for community tree planting events, primarily in parks. Friends of Trees' mission is to bring people together to plant, care for, and learn about trees in communities across the Pacific Northwest. Urban trees and native vegetation are key elements in creating and maintaining prosperous, healthy, and livable communities. This important work engages Salem's residents and local volunteer groups who actively participate in planting trees in low tree canopy neighborhoods and along streams with limited shade. Planting locations are selected each year and focus on low canopy areas of the City.

Recognizing the limitations of working with large groups of volunteers and the need to plant more trees along city streets, Public Works began a five-year planting contract in 2018 with a private company Treecology. This contract will plant approximately 150 trees each planting season in City rights-of-way and provide three years of watering and tree care. This will ensure that the new trees get off to a good start. After the initial three-year establishment period, Salem Urban Forestry staff will take over maintenance of the trees. The goal of this contract is to increase our street tree planting capability to grow the overall tree canopy and species diversity of street trees. *Treecology* is an experienced tree service and restoration contractor that has been performing similar contract tree planting work for the City of Portland.

Tree maintenance also includes tree trimming and tree removal. Trees are trimmed for health and structure, vision or access clearance, or because of damage. Tree removals occur due to development, damage, hazard risk, or disease.

Urban Forestry

Street trees, trees in parks, and trees on other City-owned properties in Salem are maintained by the Urban Forestry Section in the Parks Operations Division of Public Works. Approximately 90% of their work supports City projects or is in response to requests from other public utilities, the transit district, or the school district. The remaining 10% of their work comes from

citizen complaints or requests for services. Figure 5 summarizes Urban Forestry's 2019 work on street trees.

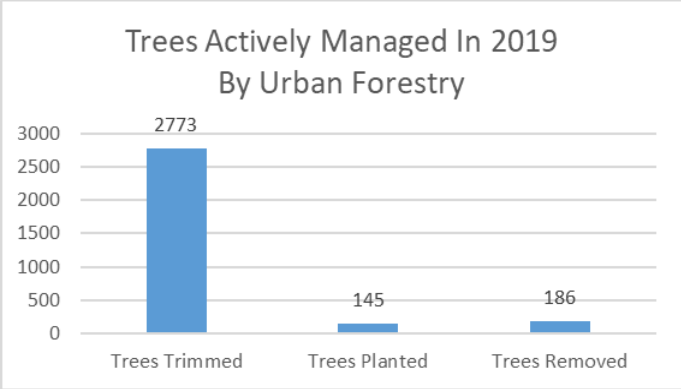


Figure 5: 2019 Tree Management by Urban Forestry.

Urban Forestry has worked hard to find efficiency and improvement through cooperation with other workgroups and agencies. Wood chips generated from tree removals and trimming are used for landscaping and trails in parks and save the City around $15,000 per year in material costs. Large wood from tree removals is collected by Marion County Youth Services and is either cut to serve their firewood for the needy program or milled into saleable lumber. This partnership benefits the youth program with free materials and saves Urban Forestry the burden of dealing with the logs themselves for an additional annual savings of $15,000.

Urban Forestry supports other tree projects and programs in the City with their expertise and experience. An Urban Forestry employee performed the 2019 street tree inventory, significantly reducing the training needed compared to a seasonal employee. Urban Forestry also compiled an inventory of trees in the City-managed, historic Pioneer Cemetery. A total of 225 trees were mapped, assessed, and inventoried to support management of the historic property.

Friends of Trees

Seven years ago, the City of Salem contracted with Friends of Trees and began working together to enhance the City's urban tree canopy and to restore its streambanks and riparian areas.


Figure 6: Tree Planting Volunteers a Minto-Brown Island Park

In 2019, the City and Friends of Trees organized tree planting events at Minto Island Conservation Area, Judson Middle School/Woodmansee Park, Bill Riegel Park, McKay School Park, and Cascades Gateway Park.

Friends of Trees volunteers planted 172 large stock trees in 2019 in Salem. Friends of Trees planted an additional 5645 small stock trees, shrubs, and smaller plants in Salem parks and natural areas.

Figure 7: A Newly Planted Tree in Cascades Gateway Park.

This planting work in 2019 involved 2707 volunteer hours from 741 volunteers. To help facilitate the events, Friends of Trees has trained dozens of local crew leaders. These individuals receive additional training on tree planting, tree care, and how to conduct volunteer events. A summary of the 2019 Friends of Trees' events is available in Table 1.

Date	Site	Trees (large stock)	Small Stock Trees and Shrubs	Volunteers	Volunteer Hours
01/26/19	Minto 1	15	1200	122	506.00
02/23/19	Minto 2	21	1200	83	309.75
03/9/19	Judson Middle School	0	1400	33	135.75
03/30/19	Minto 3	22	1200	137	484.00
04/06/19	Bill Riegel Park	50	0	54	197.75
05/04/19	Judson Tree Care	0	0	55	143.50
10/19/19	Crew Leader Training	2	95	43	252.25
11/9/19	McKay School Park	12	550	103	326.00
12/7/19	Cascades Gateway Park	50	0	111	352.00
	2019 Total	**172**	**5645**	**741**	**2707**

Table 1: Summary of 2019 Friends or Trees Events in Salem

Friends of Trees will continue to work with the City, beginning in early 2020 with plantings in Wallace Marine Park, Cascades Gateway Park, Orchard Heights Park, and an Arbor Day planting at Geer Community Park. Planting sites for later in 2020 are being assessed based on a variety of factors including a preference for planting in neighborhoods with low existing tree canopy and providing planting events throughout the city.

Treecology

In 2019, 208 trees were planted by *Treecology* along streets in Salem. Planting occurred in January through April and then October through December.

This contract has identified opportunities where large unused right-of-way spaces are available to plant uncommon and large caliper street tree species. By planting less common tree species the diversity of our street tree population is increased which adds interest and increases resilience for future pests and disease.

Notable plantings by *Treecology* in 2019 were along the Salem Parkway, Wallace Road, Front Street, Kuebler Boulevard, Hawthorne Avenue, Fairgrounds Road, and Rickey Street. Plantings occurred in six neighborhoods: Highland, CAN-DO, South Gateway, SEMCA, and NESCA.

Salem has a new Intergovernmental Agreement with the Oregon Department of Transportation (ODOT) to plant trees along additional ODOT controlled portions of the Salem Parkway. This planting will take place next planting season in late 2020.

Treecology is on contract through 2022 to continue with street and right-of-way tree planting.

Figure 8: New Street Trees Planted Along the East Side of Front Street and the Median.

3 SUMMARY

Salem is involved in a variety of projects, programs, and initiatives and is working to achieve the goals of the Community Forestry Strategic Plan. Community outreach and planting events, primarily in partnership with Friends of Trees, spread the message of tree benefits and allow an opportunity for the community to be involved with growing the urban forest. Programs like Tree City USA and Cities4Forests provide opportunities for Salem to be recognized for our urban canopy work and to keep informed of innovative urban forestry programs around the world.

The Urban Forestry section works daily to maintain a healthy tree canopy, address safety issues with trees, and respond to weather emergencies that damage trees. Contracting with experienced arboriculture companies like *Treecology* expands our tree planting capabilities and allows more street trees to get planted and established. Table 2 summarizes the number of trees planted and removed in 2019.

	Trees (large stock)	Trees Removed
Urban Forestry	145	186
Friends of Trees	172	0
Treecology	208	0
2019 Total	**525**	**186**

Table 2: Summary of 2019 Tree Plantings and Removals.

Salem Public Works will continue to promote tree planting efforts to enhance the City's tree canopy.