Yakima Tree Board
BIMONTHLY MEETING
City Council Chambers
Monday, April 28, 2025
5:00 p.m. - 6:00 p.m.

YTB Members:
Jheri Ketcham, Daniel Layton, Scot Stephens, Ken Tolonen

City Planning Staff: Eric Crowell (Senior Planner)
City Council Liaison: vacant

Agenda

I. **Approval of the Meeting Minutes from September 18, 2023**

II. **Public Comment**

III. **Urban Forestry Management Plan**

IV. **For the Good of the Order**

V. **Adjourn**

Next Meeting: TBD in City Council Chambers

It shall be the responsibility of the tree board to study, investigate, develop, update, and administer a written plan for the care, preservation, pruning, planting, replanting, removal or disposition of trees and shrubs in parks, along streets and in other city-owned public areas. The tree board shall consider, investigate, make findings, report and make recommendations regarding any special matter or question coming within the scope of its work.

Yakima All-America City 2015 1994

Yakima Tree Board
DRAFT
Minutes of September 18, 2023

Board Members Present: Lance Forsee, Jheri Ketcham, Ken Tolonen

Absent and Excused: Daniel Layton

City Staff: Eric Crowell (Senior Planner)

Introduction and Welcome
The bimonthly meeting of the Yakima Tree Board convened at 5:04 p.m. in City Council Chambers.

Approval of the Meeting Minutes from May 15, 2023
Jheri made the motion to approve the previous meeting's minutes, and Lance seconded the motion. The motion was passed by consensus.

Public Comment
No public comments were made.

Public Works RFQ/P: Certified Consulting Arborist; Urban Forestry Management Plan
Eric discussed the announcements regarding Public Works looking for a certified consulting arborist, along with a consultant for the urban forestry management plan.

For the Good of the Order
Nothing further was discussed.

Adjournment
The meeting was adjourned at 5:16 p.m. The next Yakima Tree Board meeting will be held on Monday, November 20, 2023 in City Council Chambers.

CITY OF YAKIMA

MANAGEMENT PLAN
PRODUCED BY
ARBORPRO

MANAGEMENT PLAN

MAY 2024

TABLE OF CONTENTS

03 EXECUTIVE SUMMARY

06 INTRODUCTION

07 SECTION 1: HIGHLIGHTS AND RESULTS OF CURRENT DATA

11 SECTION 2: BENEFITS OF A HEALTHY URBAN FOREST

14 SECTION 3: TREE MANAGEMENT

21 POLICIES AND OBJECTIVES

24 SURVEY AND RESULTS

EXECUTIVE SUMMARY

ArborPro, Inc. has crafted this comprehensive Urban Forestry Management Plan for the City of Yakima, Washington, aimed at addressing both current and future tree management needs. Utilizing extensive data provided by the City, which includes details on tree locations, species, trunk diameters, and conditions, we have been able to assess the present state of Yakima's urban forest comprehensively. This plan strategically analyzes the tree inventory data to align with the City's urban forestry goals looking forward.

Beyond outlining necessary maintenance and planning strategies, this report elucidates the multifaceted benefits that urban trees offer to Yakima. It details not only the economic advantages but also the environmental and social gains that a well-maintained urban forest brings to the community. This management plan serves as a foundational document, designed to guide the City's efforts in nurturing and expanding its green infrastructure, thereby enhancing the quality of life for all its residents.

SIGNIFICANT FINDINGS FROM THE 2024 DATASET

The latest tree inventory for the City of Yakima encompasses a diverse urban forest situated within public street rights-of-way (ROW). The inventory accounts for a total of 6,867 trees, representing a vital component of the city's green infrastructure.

TREE SPECIES DIVERSITY

- Most Common Species: The inventory identifies arborvitae as the predominant species with 973 trees (14.17%), followed by red maple with 500 trees (7.28%), Norway maple with 462 trees (12.43%), honey locust with 335 trees (9.02%), and silver maple with 302 trees (4.04%).
- Small Tree Categories: The most common small trees (00-03" DBH) include columnar maple (103 trees), honey locust (50 trees), and Norway spruce (45 trees).
- Large Tree Categories: The largest trees (over 25" DBH) are notably fewer, with Norway spruce (4 trees), crab apple (3 trees), and red maple (3 trees) leading this category.
- Species Richness: A total of 95 distinct species have been documented within the inventory.

REPLACEMENT VALUE

- The estimated total replacement cost for all trees is calculated at $23,200,000, reflecting the substantial investment in Yakima's urban forestry assets.

TREE HEALTH AND CONDITION

- A robust 90% of Yakima's tree population is classified in "good" condition, indicating healthy and sustainable urban forestry practices.

ENVIRONMENTAL AND ECONOMIC BENEFITS

- Annual Environmental Contributions: Trees in Yakima contribute approximately $10,400 in environmental benefits annually.
- Carbon Dynamics: The carbon sequestration is valued at $10,400/year, while stored carbon holds an estimated value of $712,000.
- Water Regulation: The urban forest helps avoid approximately 278,000 gallons of runoff annually.
- Total Tree Cover: The tree canopy extends over 75.36 acres.

TREE MAINTENANCE NEEDS

Overview of Current Maintenance Data
As of the latest update, specific tree maintenance histories or detailed needs have not been provided within the current dataset. Once this information becomes available, it will be systematically summarized and incorporated into this management plan.

Importance of Tree Maintenance
Despite the significant time and financial investment required, the extensive benefits provided by trees fully justify these expenses. Proper pruning and regular upkeep are crucial for trees to deliver maximum environmental, social, and economic benefits throughout their lifespan.

Benefits of Regular Maintenance
- Risk Mitigation: Regular maintenance reduces the risk of falling limbs, decreases potential storm damage, and resolves conflicts with infrastructure, such as sidewalks and roadways.
- Aesthetic Improvement: Well-maintained trees enhance the visual appeal of urban spaces.
- Growth Promotion: Corrective pruning supports healthy growth patterns in young trees and maintains proper form in mature trees.

Maintenance Prioritization
High-risk trees require immediate attention to mitigate safety risks effectively and prioritize resource allocation. Following the resolution of high-risk issues, routine pruning and tree removals are addressed.

Recommended Pruning Cycles
- Established Trees: A five-year pruning cycle is recommended to maintain structure and health.
- Young Trees: A more frequent three-year training cycle is advocated to enhance tree form, structure, and vitality.

The City of Yakima has adopted a cyclical pruning strategy aiming for a 5–7-year interval, demonstrating a commitment to maintaining urban tree health effectively.

Proactive Maintenance Strategies
- Young Trees: Small trees benefit from a three-year pruning cycle, which helps correct structural defects early, reducing long-term maintenance costs and ensuring their robust growth as they mature.
- Established Trees: Regular inspections and maintenance every five years help address specific issues like deadwood and clearance problems, tailored to each species' natural form.

Tree Planting as a Maintenance Strategy
Tree planting plays a critical role in urban forest management, crucial for expanding canopy coverage, replacing trees lost to natural causes, and enhancing biodiversity. Strategic planting not only compensates for losses but also fosters a resilient and diverse urban canopy.

Long-term Planning and Maintenance
This report will further delve into strategies for long-term planning and maintenance cycles, ensuring the sustainability and health of Yakima's urban forest.

INTRODUCTION

Home to over 97,000 residents, the City of Yakima holds the stewardship of an extensive array of trees located in parks, public spaces, and along street rights-of-way. Renowned for its vibrant cultural and natural resources, Yakima boasts a longstanding commitment to its green infrastructure. This commitment is exemplified by its designation as a Tree City USA for more than eight years, a testament to its ongoing efforts to preserve and enhance the urban forest.

As a critical component of the city's ecological and social fabric, Yakima's urban forest contributes significantly to the quality of life of its citizens. This management plan is designed to support the city's objectives in maintaining and expanding this vital resource, ensuring that it continues to thrive and bring benefits to the community for generations to come.

Successfully managing an urban forest requires a proactive, organized approach that includes setting clear goals and monitoring progress. The process begins with a thorough analysis of the current tree population's condition and developing tailored maintenance recommendations. Using this data, the City of Yakima is equipped to establish tree care priorities, devise strategic planting plans, draft cost-effective budgets based on anticipated needs, and significantly reduce the reliance on costly, reactive measures in emergency situations.

In the spring of 2024, the City contracted ArborPro to create this comprehensive Urban Forest Management Plan. The plan assesses the size characteristics, condition, and species distribution of the inventoried trees, offering a prioritized framework for the ongoing maintenance of all cataloged trees.

Trees form a crucial segment of a community’s green infrastructure, as vital as roads, bridges, or sewer systems. Unlike other infrastructure elements, trees uniquely increase in value and performance over time, making them the only infrastructural assets that improve with age.

This Urban Forestry Management Plan is designed to safeguard and enhance this invaluable asset, akin to the way plans for stormwater, streets, or sewers protect their respective infrastructures. It lays out detailed strategies for how Yakima will maintain and cultivate this essential component of its green infrastructure. The management plan is structured into three pivotal sections:

1. Section 1: Highlights and Results of Inventory Data
    - This section provides an overview and detailed analysis of the tree inventory, emphasizing key findings.
2. Section 2: Benefits of a Healthy Urban Forest and Community Survey Results
    - Discusses the extensive environmental, economic, and social benefits of a robust urban forest and includes insights from community feedback.
3. Section 3: Tree Management
    - Outlines specific management practices and priorities to ensure the health and sustainability of the urban forest.

SECTION 1: HIGHLIGHTS AND RESULTS OF CURRENT DATA

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In spring 2024, ArborPro, Inc. received comprehensive data from the City of Yakima, WA, detailing its urban forest. This dataset encompasses 6,867 tree sites, focusing exclusively on existing trees with no record of stumps, snags, or vacant sites included.

Data Source

The tree inventory was provided in an Excel spreadsheet format by the city, encompassing essential data fields for each tree including address, common name, diameter, and condition.

Assessment of Tree Inventory Data

The evaluation of tree condition within the inventory utilizes professional judgment, rooted in extensive experience and adherence to industry standards. This crucial data, now integrated into this management plan, forms the basis for both immediate and strategic urban forest management decisions. This section summarizes key aspects of the tree population:

- Size Characteristics
- Tree Condition
- Species and Genus Distribution

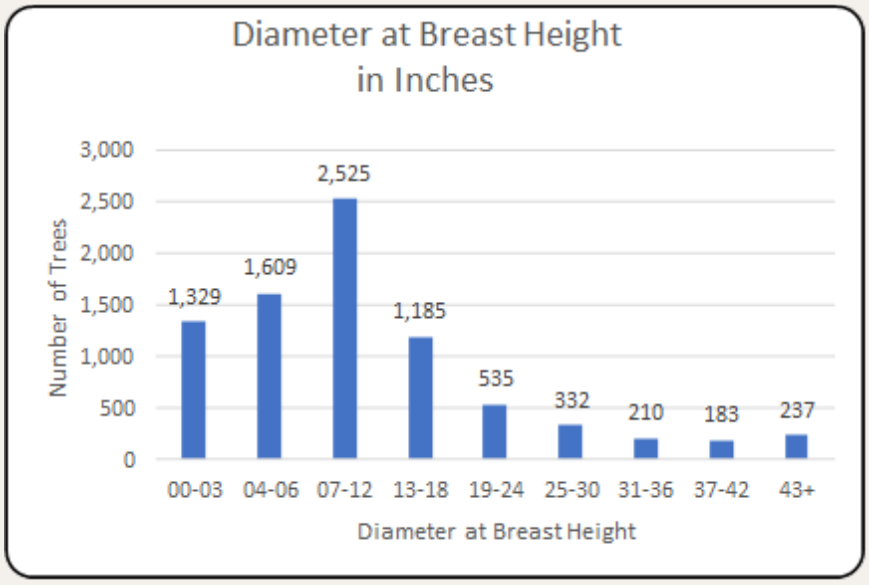
Size Characteristics

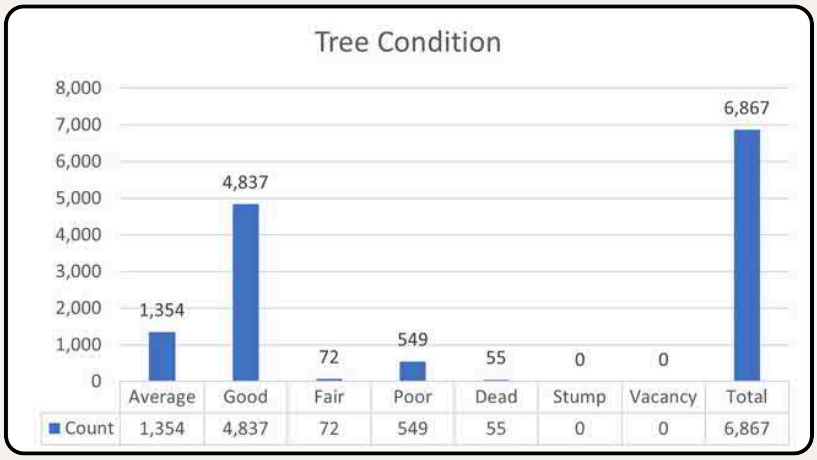
Tree size, particularly diameter at breast height (DBH), serves as a valuable indicator of age and value, contributing to an understanding of the overall maturity of the urban forest. In Yakima, while height data is not currently available, DBH is measured at 4.5 feet above ground level. The distribution of DBH across the urban forest provides insights into the age distribution of the trees.
Given the variability in growth rates across different species and environmental conditions, DBH serves as a pragmatic proxy for estimating tree age. This metric is essential for the city's planning efforts, ensuring a balanced age distribution among the tree population to maintain a healthy, sustainable urban canopy for future generations.

Discussion

The distribution of tree sizes within Yakima's street tree population is notably skewed towards smaller to semi-mature trees. This distribution is not ideal, but it offers significant future benefits as these trees mature, contributing to a robust, healthy canopy. To further this growth, ArborPro recommends a continued emphasis on planting new trees. This will initially increase the ratio of small to large trees but is essential for enhancing canopy cover and improving air quality over time

Figure 1, attached below, illustrates the distribution of the City of Yakima's trees by diameter class, offering a visual representation of age diversity within the urban forest.





Tree Condition

The condition of a tree is a qualitative measure reflecting its health, vigor, and structure. It's important to note that appearance alone may not accurately represent a tree's overall condition. The data, as summarized in Table 1 and illustrated in Figure 2, categorizes the trees as follows:

- **Good: 70.44% (4,837 trees)**
- **Average: 19.72% (1,354 trees)**
- **Fair: 1.05% (72 trees)**
- **Poor: 7.99% (549 trees)**
- **Dead: 0.80% (55 trees)**

The majority of Yakima's trees (90%) were recorded in 'Average' condition or better at the time of the inventory, indicating a generally healthy urban forest. However, approximately 8% of the trees are in poor condition, with a small fraction under 1% in critical or dead conditions.

Discussion

The distribution of tree species and genera is critical for determining appropriate planting strategies and managing biodiversity, which is vital for the overall health and longevity of the tree population. According to the 10-20-30 rule for urban biodiversity—no single species should make up more than 10%, no genus more than 20%, and no family more than 30% of the total tree population. Figure 3 shows the distribution of tree species representing 2% or more of the total.

Average – The tree has no structural problems, no damage from diseases or pests; no mechanical damage; a full, balanced crown; and normal twig condition and vigor for its species. Trees in this category are 95-100% healthy.

Very Good – The tree has no structural problems, no significant damage from diseases or pests; no mechanical damage; a full, balanced crown; and normal twig condition and vigor for its species. Trees in this category are 90-95% healthy.
Table 1: Tree Condition & Percentage of Population.

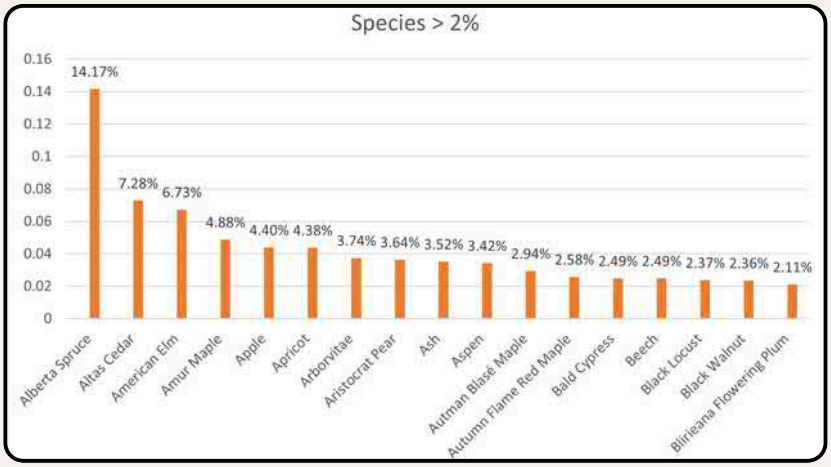
Good – The tree has no major structural problems, no significant damage from diseases or pests; no significant mechanical damage; a full, balanced crown; and normal twig condition and vigor for its species. Trees in this category are 80-90% healthy.

Fair – The tree may exhibit the following characteristics: minor structural problems and/or mechanical damage; significant damage from non-fatal or disfiguring diseases; minor crown imbalance or thin crown; minor structural imbalance; or stunted growth compared to adjacent trees of the same species. Trees in this category are 60-80% healthy.

Poor – A tree can appear healthy but may have structural defects. This classification also includes healthy trees that have unbalanced structures or have been topped. Trees in this category may also have severe mechanical damage, decay, severe crown dieback or poor vigor/failure to thrive. Trees in this category are 40-60% healthy.

Dead – This category refers only to trees that are completely dead. Trees in advanced states of decline that are still alive are generally recorded as poor or critical, not dead.

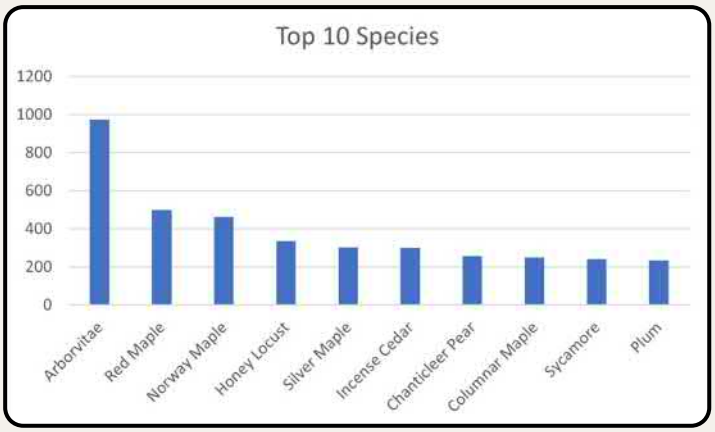
Stump – Stumps included interfere with pedestrian traffic or pose a tripping hazard. Stumps are not included in dead tree count.



Species and Genus Distribution

The city maintains a variety of species, with the ten most common as shown in Table 2 and Figure 4. Arborvitae, being the most prevalent at 14.17%, and both types of maples, which together exceed 14%, suggest a need for diversification to mitigate risks associated with disease and pest outbreaks.

- **Arborvitae: 14.17% (973 trees)**
- **Red Maple: 7.28% (500 trees)**
- **Norway Maple: 6.73% (462 trees)**
- **Honey Locust: 4.88% (335 trees)**
- **Silver Maple: 4.40% (302 trees)**



Discussion

To reduce vulnerability to species-specific issues, ArborPro advises that the planting of Arborvitae be reduced or discontinued as it exceeds the recommended 10% threshold. Similarly, the excessive presence of maples requires cautious management to prevent widespread impact from potential health issues affecting these species. Future Planting Recommendations: It is recommended that Yakima focuses on diversifying its urban forest by selecting species well-adapted to the region and promoting greater biodiversity. This strategic approach will ensure a resilient tree population less susceptible to diseases, pests, and environmental changes.

Table 2 and figure 4 contain the top ten species distribution of trees recorded in Yakima by count and percentage of the total tree population. A full species frequency report can be found in Appendix A.

Rank	Top 10	Count	%
1	Arborvitae	973	14.17%
2	Red Maple	500	7.28%
3	Norway Maple	462	6.73%
4	Honey Locust	335	4.88%
5	Silver Maple	302	4.40%
6	Incense Cedar	301	4.38%
7	Chanticleer Pear	257	3.74%
8	Columnar Maple	250	3.64%
9	Sycamore	242	3.52%
10	Plum	235	3.42%

SECTION 2: BENEFITS OF A HEALTHY URBAN FOREST

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Trees in urban areas offer extensive environmental, social, and economic benefits. When well-maintained, trees enhance air quality, manage stormwater runoff, and reduce energy costs, thereby offsetting the expenses associated with their upkeep. A robust tree maintenance program is crucial in maximizing these benefits, ensuring that the investment in tree care yields substantial returns for the community.

Quantifying Tree Benefits

The i-Tree Eco application, a tool designed to assess urban forests and calculate their benefits in monetary terms, was utilized to quantify the contributions of Yakima's trees. This application employs growth models and benefit calculations specific to predominant urban tree species, providing a detailed evaluation of their environmental impact. The annual benefit reports from i-Tree Eco highlight the significant value trees add to Yakima, encompassing improvements in air quality, carbon sequestration, stormwater control, and overall structural value.

Key Environmental Benefits:

• Air Quality: Trees significantly improve air quality by absorbing pollutants like ozone, nitrogen dioxide, and particulate matter while releasing oxygen. The inventoried trees in Yakima produce approximately 162.3 tons of oxygen annually.
• Carbon Dioxide Sequestration: Trees play a critical role in climate regulation by absorbing carbon dioxide during photosynthesis and storing it in their wood, with an annual sequestration value estimated at $10,400.
• Stormwater Control: By intercepting rainfall, trees reduce the burden on public stormwater systems and infrastructure, leading to considerable cost savings. The estimated volume of stormwater avoided annually by Yakima’s trees is 273.4 thousand gallons.

Economic Valuation

• Total Replacement Value: The total replacement cost of Yakima's urban forest, which represents the expense of replacing each tree with another of the same size, is valued at approximately $23,184,000. This valuation underscores the substantial capital embodied in the urban canopy.

Community Engagement and Perception

A comprehensive community survey conducted over eight weeks gathered feedback from residents on various aspects of the urban forest. The survey, promoted via social media and the city's website, attracted diverse opinions, highlighting the community's high regard for tree-related benefits and their active interest in urban forest management.

Survey Insights:

- A majority of respondents view the urban forest's condition positively, with calls for continued investment in tree planting.
- Community feedback emphasized the importance of tree diversity, proper maintenance, and the expansion of educational and participatory initiatives related to urban forestry.

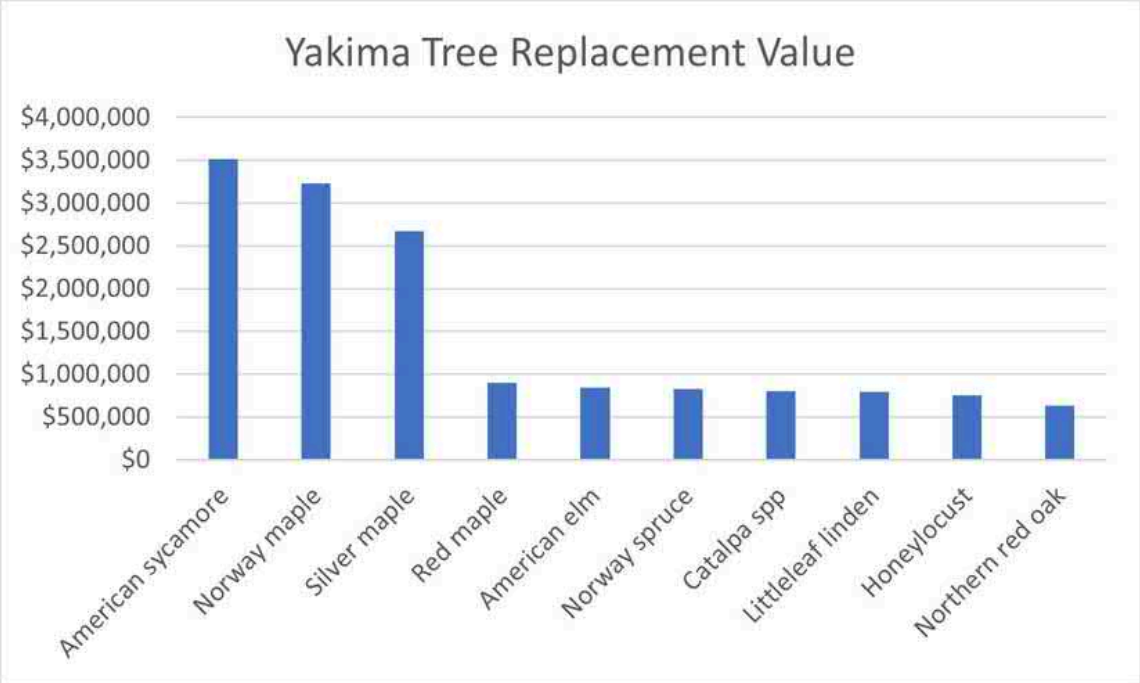
Community Priorities:

- Enhancing tree care education and involvement in tree-related activities.
- Improving the diversity and health of the urban forest to ensure its resilience against pests, diseases, and environmental changes.

Strategic Recommendations

Based on the i-Tree analysis and community feedback, it is recommended that Yakima:

- Continues to invest in planting a diverse array of tree species to enhance ecological resilience and aesthetic value.
- Expands community engagement efforts through educational programs and participatory planting events, fostering a deeper connection between residents and their urban environment.



SECTION 3: TREE MANAGEMENT

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Purpose and Strategy

The primary purpose of this Urban Forest Management Plan is to establish a comprehensive framework for both the short-term and long-term maintenance of Yakima's urban trees. Implementing a structured pruning cycle, ranging from 5 to 7 years, is a critical component of this strategy. This section serves as a foundation for justifying funding requests and understanding the overall maintenance needs of Yakima’s urban forest.

Understanding Tree Inventory Data

Tree inventory data provides a crucial snapshot of the current condition and maintenance requirements of Yakima's trees. By prioritizing tree maintenance based on this data, the City can significantly reduce the risk of tree-related incidents. However, as tree conditions can change rapidly, it is essential to combine routine maintenance with ongoing monitoring to identify trees that may pose future risks.

Recommended Maintenance and Tree Risk

Currently, no specific maintenance data has been provided for inclusion in this plan. Once available, a detailed description and summary of maintenance recommendations will be appended. Meanwhile, the following framework is suggested for categorizing and prioritizing Yakima's trees according to their maintenance needs:

• **Priority 1 Prune:** Address trees that pose the highest risk first. These include trees with hazardous conditions such as deadwood, hangers, or broken branches that threaten safety. Trimming these trees is critical to remove any immediate dangers they pose to the public and property.

• **Priority 1 Removal:** Trees in this category often have severe defects that are not practical or cost-effective to treat. They typically feature a large portion of dead crown and represent a high risk of failure. Removal is recommended to mitigate potential hazards.

• **Priority 2 Prune:** This category includes trees that need trimming to remove deadwood, correct structural issues, or clear obstructions but do not pose as immediate a risk as Priority 1 trees.

• **Priority 2 Removal:** Trees that should be removed due to lesser risks than those in Priority 1. Attention to these trees should follow the management of Priority 1 trees.

• **Routine Prune:** Regular horticultural pruning is required to correct structural problems or manage growth to avoid interference with infrastructure.

• **Training Prune:** Focuses on smaller trees, typically less than 20 feet in height with a DBH of less than 8 inches. Pruning aims to minimize future maintenance by correcting or eliminating weak or problematic branches early in the tree’s life.

• **Stump Removal:** Removal of stumps, particularly in high-traffic areas where they pose tripping hazards, is recommended. This includes the removal of snags, which are essentially tall stumps.

Implementing the Plan

The initial implementation of this management plan will prioritize trees that pose the greatest risk at the time of the inventory. Following this, the management focus will shift to training and routine pruning. This dynamic workflow allows adjustments based on community needs and emerging priorities, such as addressing storm-damaged trees more urgently than routine maintenance tasks.

Planting New Trees

For vacant planting sites, the default action is to "Plant Tree". This proactive approach supports the continuous growth of the urban canopy, essential for enhancing environmental benefits and the aesthetic value of Yakima's urban landscape.

Priority and Proactive Maintenance

Recognizing the significant value of its urban trees, the City of Yakima is committed to maintaining this asset through a proactive maintenance schedule. This approach not only systematically reduces risk but also enhances the overall health of the urban trees, stabilizes maintenance budgets, and facilitates long-term planning.

Maintenance Cycles

ArborPro recommends implementing a structured maintenance regime:

• Routine Tree Trimming: Conducted on a five-year cycle, this involves pruning trees that are assigned a routine prune recommendation.

• Small Tree Training: Performed every three years, this focuses on structural pruning of young trees to promote healthy growth patterns.

These proactive maintenance activities are distinct from priority maintenance, which involves addressing trees that pose immediate risks.

Priority Maintenance

The main objective of a tree inventory is to prioritize maintenance, allowing for systematic assignment of tree care based on observed risks:

• **Priority 1 Pruning and Removals:** These are addressed first, involving trees that pose the highest immediate risk to public safety or property. Pruning may involve removing hazardous limbs, while removals are reserved for trees with defects that cannot be cost-effectively or safely remedied.

• **Priority 2 Pruning and Removals:** Addressed after all Priority 1 tasks, these involve trees that pose less immediate risks. Pruning might include the removal of deadwood or correction of structural issues, and removals are for trees that still pose considerable risks but are less urgent than Priority 1 trees.

• **Routine Pruning:** Scheduled after priority maintenance, this includes trees in the Routine Prune category and involves general maintenance to prevent future problems and maintain tree health and aesthetics.

Proactive Maintenance

Proactive maintenance involves systematic management over time, integrating trees into a pruning cycle that addresses health and form. This method is cost-effective in the long run as it reduces the likelihood of emergency situations and allows for regular monitoring of potential problem trees.

Routine Pruning Cycle

All trees not designated for priority pruning or removal should be included in the routine pruning cycle. This cycle aims to maintain trees that pose little to no immediate risk but could benefit from regular care to prevent future issues. ArborPro suggests a five-year cycle for routine pruning, proposing that approximately one-fifth of the tree population be pruned each year.

Small Tree Training Cycle

Although the City of Yakima has an adequate number of newly planted trees, planting additional trees will help promote a healthy urban forest for years to come. It is also important to remember that older, more mature trees provide the most benefits to the community. The City must promote tree preservation and proactive tree care to ensure older trees survive as long as possible. A typical Urban Forestry objective is to have an uneven-aged distribution of trees at the street, neighborhood, and citywide levels. ArborPro recommends that Yakima support a strong planting and maintenance program to ensure that young, healthy trees are in place to fill gaps in tree canopy and provide for gradual succession of older trees. Tree planting and tree care will allow the distribution to normalize over time.

Trees included in the Small Tree Training Cycle are typically less than 8 inches DBH (though sometimes larger DBH trees are included) and will benefit from structural pruning and pruning to promote form true to the species. Young trees tend to have a higher growth rate and therefore require a shorter pruning cycle than mature trees. For this reason, ArborPro recommends a three-year cycle for young tree training.

Establishing a training cycle for young trees is equally important for Yakima's parks. A significant amount of money has been spent to plant new trees in many of the parks. Investing time and money to properly prune these trees will greatly reduce future structural problems and maintenance issues.

The three-year Young Tree Training Cycle should begin on year one of the maintenance plan. For the sake of this management plan, it will only include existing young trees. One-third of young trees should be structurally pruned each year. The number of trees in the training cycle will fluctuate as new trees are planted and as older plantings become established and no longer require training. Therefore, the amount of money spent and the number of trees in the training cycle will not remain constant. The budgetary impact of new trees is discussed in the vacant planting section.
The inventory found a total of 681 trees that would benefit from training pruning. Therefore, approximately 277 trees (one-third of the total population) should be trained each year beginning in year one of the five-year maintenance cycle.

However, if budget does not allows, the Small Tree Training Cycle could be moved to year three for fiscal reasons.
Relatively inexpensive, small young tree training can easily be performed by trained City staff, if available. Pruning young trees helps to reduce future maintenance costs by improving the structure and health of young trees. This type of proactive maintenance also works towards maximizing the eco-benefits discussed earlier. ArborPro recommends that the City of Yakima consider a modification to its 5–7-year cycle by creating an additional cycle of 3 years for young/small trees. This young/small tree training program should be enacted as soon as possible. This program will also present a good opportunity to interact with the community to stress the importance of trees and their regular care.

Importance of Tree Maintenance

Trees are naturally occurring, organic organisms. Often, they are treated as though they do not need human assistance to thrive. While this may be true in undisturbed forests, it is certainly not true for urban trees. Urban trees require regular maintenance to maximize the benefits they provide. When maintenance is neglected, trees can pose a serious risk to people and property. In addition, trees in urban environments are subject to many more stressors than trees in forests or rural areas. Urban trees grow in restricted spaces; are exposed to pollutants and road salt; are subject to soil compaction; and can be easily damaged by mowers or other maintenance activities.

Proactive pruning and hazard mitigation greatly reduce the risk of tree failure and subsequent damage. In addition, proactive maintenance will prolong the life of a tree and reduce future maintenance costs. A well-maintained urban forest will be less susceptible to disease and disaster. When trees are pruned on a regular basis — or removed when they become diseased or hazardous — it eliminates some of the pathways for potential pests and diseases. Many of these pests and diseases attack stressed trees. Therefore, a well-maintained urban forest will be less likely to succumb to pest infestations. In addition, species selection is an important part of maintaining a healthy urban forest. Careful species selection will increase biodiversity and reduce the risk of a catastrophic pest infestation. Most pests have preferred hosts (Emerald Ash Borer for example). Increasing biodiversity will limit the number of species that are susceptible to individual pests.

While it is impossible to predict when a natural disaster will strike, a high level of disaster preparedness can be achieved through regular maintenance. Trees that have been pruned to remove dead or hanging limbs will be less likely to experience branch failure in high winds, thus reducing storm damage clean-up. Also, removing diseased or declining trees from the landscape will reduce the risk of whole tree failure in major storm events. The importance of urban tree maintenance cannot be understated. A well-maintained urban forest will provide maximum benefits to the community while reducing the inherent risk of tree failure.

Importance of Updating Inventory Data

Trees are living organisms that change with time. Inventory data, however, is static and will not reflect the current state of an urban forest unless it is continually updated. Whenever a tree is removed, inspected, pruned, or planted it should be updated in the inventory. If inventory data is not properly maintained, it will quickly become obsolete and will ultimately be of little use. Significant time and money have been invested in surveying Yakima's trees. The only way to protect this investment is to continually update the inventory.

Vacant Sites and Tree Planting

Currently, no specific data on potential planting locations is available for this management plan. It is recommended that the City of Yakima undertake a thorough assessment to identify and categorize potential tree planting sites. This information will be pivotal in developing a multiyear planting and replacement strategy to ensure the urban forest remains robust and well-stocked.

Categorization of Vacant Sites

Vacant sites suitable for tree planting can be categorized based on the size of the planting space, which determines the type of tree that can be accommodated:

- **Small (4’ to 6’):** Suitable for smaller tree species or under electric utilities.
- **Medium (6’ to 8’):** Ideal for most young trees requiring moderate space to grow.
- **Large (8’ to 12’):** Can accommodate larger tree species with more extensive root systems.
- **Very Large (12’+):** Best suited for very large species that provide substantial canopy coverage.

Importance of a Comprehensive Planting Plan

Implementing a structured planting plan is crucial for enhancing neighborhood landscapes and increasing the overall canopy cover across Yakima. The plan should include annual planting targets, with a suggested minimum of 20 to 60 trees per year to compensate for natural tree loss and to promote biodiversity and canopy growth.

Species Diversity and Selection

Selecting a diverse array of tree species is critical to prevent the vulnerabilities associated with monocultures, as historically demonstrated by the devastation caused by diseases like Dutch elm disease in Syracuse, New York. To avoid similar scenarios:

- A diverse species palette should be developed, especially considering Yakima's unique climatic challenges.
- The selection should focus on species known to thrive in Yakima's climate, with adjustments anticipated as climatic conditions evolve due to climate change.
- Continuous updates to the species list should be made based on ongoing research and trials conducted by state foresters.

Tree Planting Considerations

Proper tree planting is crucial for the success of the urban forest:

- **Site Assessment:** Evaluate the specific conditions of each site, including space constraints, overhead utilities, and existing canopy.
- **Species Selection:** Choose species that best suit the site conditions and urban landscape goals.
- **Planting Techniques:** Ensure trees are planted correctly to foster healthy growth, including appropriate hole size, soil handling, and mulching.

Tree Maintenance Post-Planting

Effective maintenance in the years following planting is vital for the survival and establishment of trees:

- Watering: Newly planted trees require consistent watering to establish roots, with specific needs varying by species and season.
- Mulching: Apply a 3 to 4-inch layer of mulch around new trees, avoiding direct contact with the trunk to prevent rot and other issues.
- Pruning: Begin structural pruning early to establish a strong form and reduce future maintenance needs.

Long-Term Care for Established Trees

Even as trees mature, they require ongoing care to ensure their health and structural integrity:

- Regular Watering: Continue providing water especially during dry periods.
- Ongoing Pruning: Conduct structural pruning to maintain form and prevent potential hazards.

Community Engagement

Involving the community in the tree planting process can enhance public support and awareness of the benefits provided by the urban forest. Educational programs and community planting events can help foster a sense of stewardship among residents.

Newly Planted Tree Maintenance

Proper young tree maintenance is just as important as proper planting techniques. If trees are not cared for after planting, they have little chance of surviving and becoming established. Newly planted trees will require maintenance for several years after planting.

Water

Watering newly planted trees is the most important key to their survival. Typically, it takes at least two months of watering for a new tree to become established. The time of year and tree species will dictate how much water should be applied after this period. The general rule is to keep soil moist to promote root growth.

Mulching

Applying mulch to newly planted trees has many benefits.Mulch will help retain soil moisture and regulate temperatures around the root ball. Because over-mulching will have devastating effects on the long-term health of a tree, it is extremely important to avoid piling mulch around the trunk. Spread 3 to 4 inches of mulch around newly planted trees while ensuring the root flare is visible and mulch is not touching the trunk.

Caring for Established Young Trees

After planting, trees will take a few years to become established. The general rule: trees take one year for each inch in caliper when planted to become established. (Caliper is the trunk diameter at 6 inches above ground.) For example, if you are planting a 2-inch caliper tree, it will take 2 years for the roots to become fully established. Established trees still require regular watering and will need structural pruning as they begin to grow. Structural pruning establishes a central leader; removes dead or diseased branches; removes crossing limbs; and creates an overall structure that will benefit the tree into maturity.

POLICIES AND OBJECTIVES

POLICIES AND OBJECTIVES

Introduction

This section synthesizes key points from the management plan, providing a concise guide to effectively implement both short-term and long-term strategies for Yakima's urban forestry efforts.
Pruning, Removal, and Planting

- **Cyclical Pruning Program: Yakima has adopted a 5-7 year pruning cycle, which might be extended to 8-10 years for certain species depending on growth rates, pruning objectives, and budget considerations. This cyclical approach helps streamline budgeting and ensures consistent tree care.**
- **Strategic Tree Management: For trees in less-than-optimal locations, particularly large species in small planting strips, the policy is to retain those with high vitality where feasible, maximizing benefits like carbon storage. Trees losing vitality should be scheduled for strategic pruning or removal.**
- **Inventory and Work Tracking: Utilizing an inventory management system will track all tree maintenance work and associated costs, providing a crucial tool for budget planning and historical data for future staff.**

Coordination and Cooperation

- **Information Clearinghouse: Establish a central hub of information outlining the city's tree care goals and procedures, including clear guidelines on when and how to contact the city arborist.**
- **Interdepartmental Communication: Regular newsletters or memos should educate various city departments and contractors on proper tree care to prevent unintentional damage due to lack of knowledge.**

Community Education

- **Public Engagement: Through partnerships with local non-profits and regular educational initiatives, Yakima aims to inform residents about the benefits of a healthy tree canopy and best practices in tree care.**
- **Educational Outreach: The city should leverage its communication channels to distribute information on urban forestry, focusing particularly on neighborhoods with low canopy coverage.**

Planting

- **New Tree Planting Strategy: Addressing an annual natural mortality rate of about 2.5%, Yakima should aim to plant at least 160 trees annually to sustain its urban forest. Partnerships with local organizations will be essential in implementing these planting initiatives.**
- **Planting and Training: A formal tree planting program will ensure that new trees are correctly planted and maintained, enhancing survival rates and community involvement.**

Plan Vitality

- Adaptive Management: The management plan is designed to be dynamic, adapting to new challenges or opportunities, such as budget changes or emergent diseases.
- Regular Reviews and Reports: Annual “State of the Urban Forest” reports and triennial plan reviews involving key stakeholders will help align ongoing practices with strategic goals.

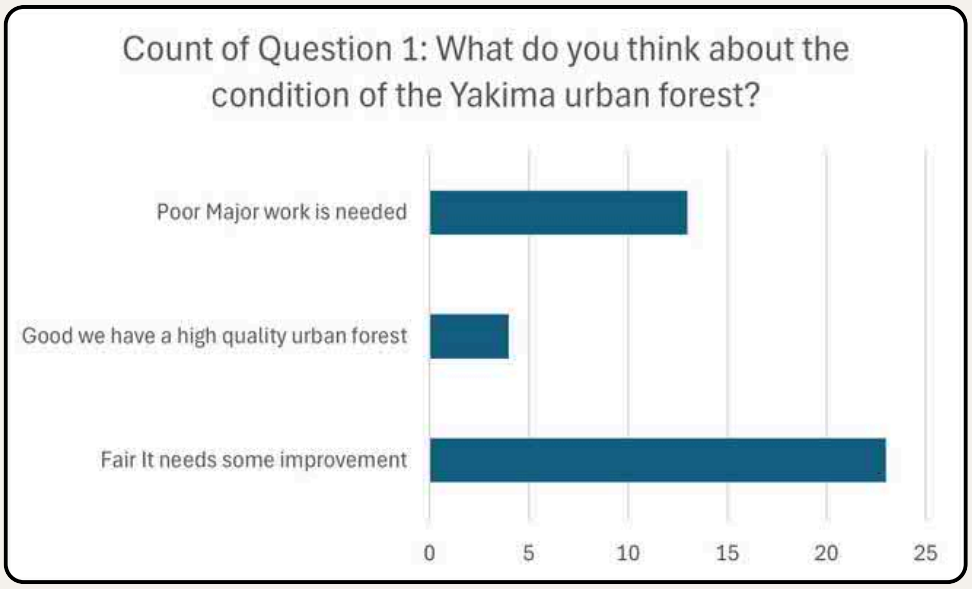
Tree City USA

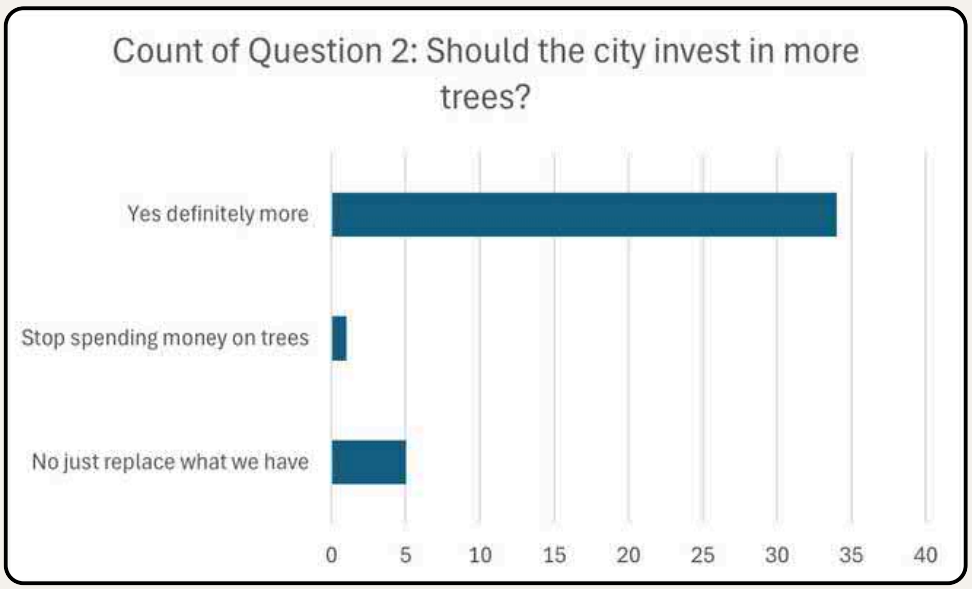
- Sustaining Recognition: Maintaining Tree City USA status remains a key objective for Yakima, underscoring the city’s commitment to high standards in urban forest management.

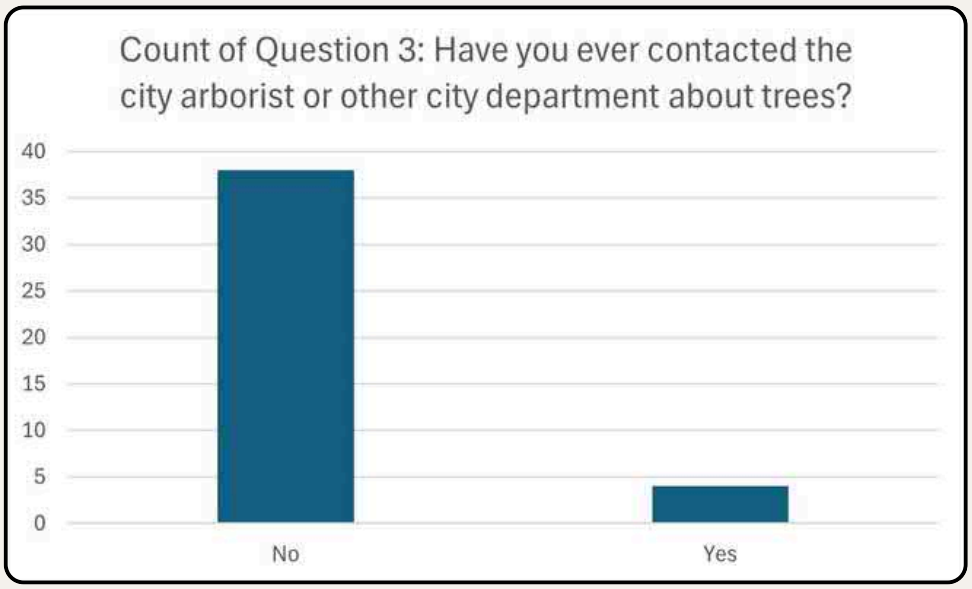
Conclusions

- Commitment to Urban Forestry: Yakima’s proactive approach and community engagement in urban forestry management highlight its leadership in the field, as evidenced by the effective use of new tree inventories and community surveys. The ongoing recognition as a Tree City USA reflects Yakima’s dedication to maintaining and enhancing its urban forest.

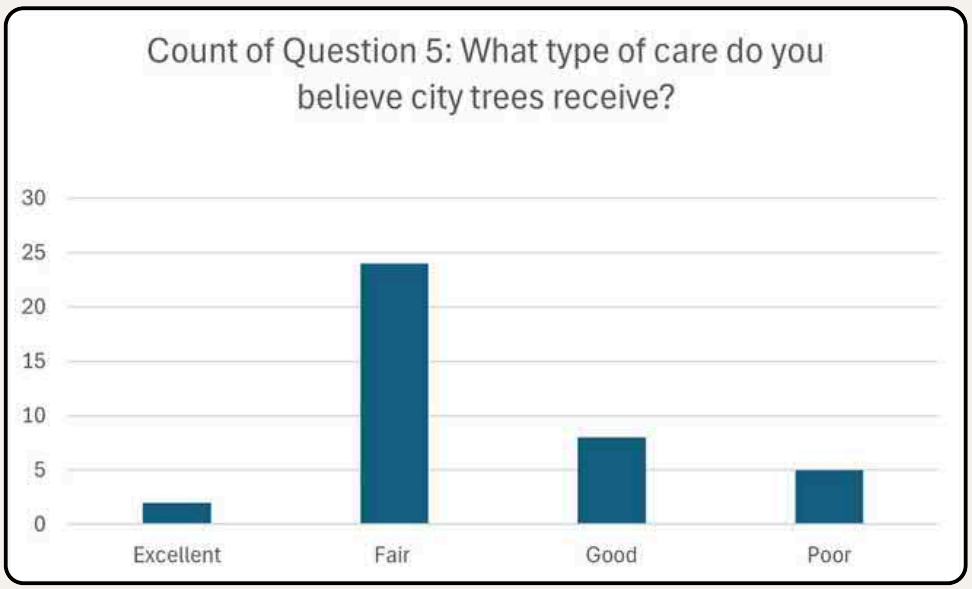
YAKIMA – PUBLIC ENGAGEMENT SURVEY CHARTS

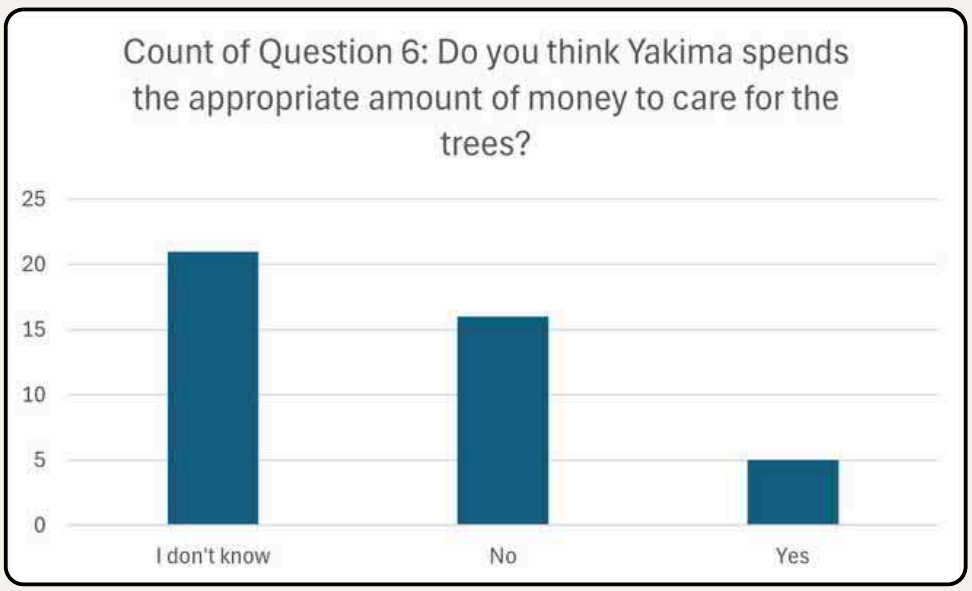

Count of Question 1: What do you think about the condition of the Yakima urban forest?
Poor Major work is needed
Good we have a high quality urban forest
Fair It needs some improvement
0
5
10
15
20
25

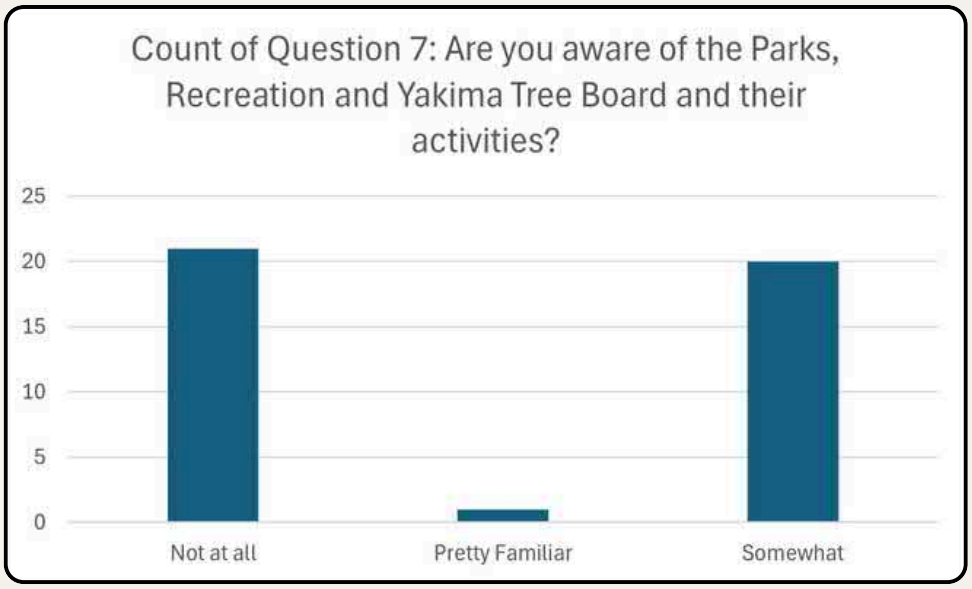

Count of Question 2: Should the city invest in more trees?
Yes definitely more
Stop spending money on trees
No just replace what we have
0
5
10
15
20
25
30
35
40

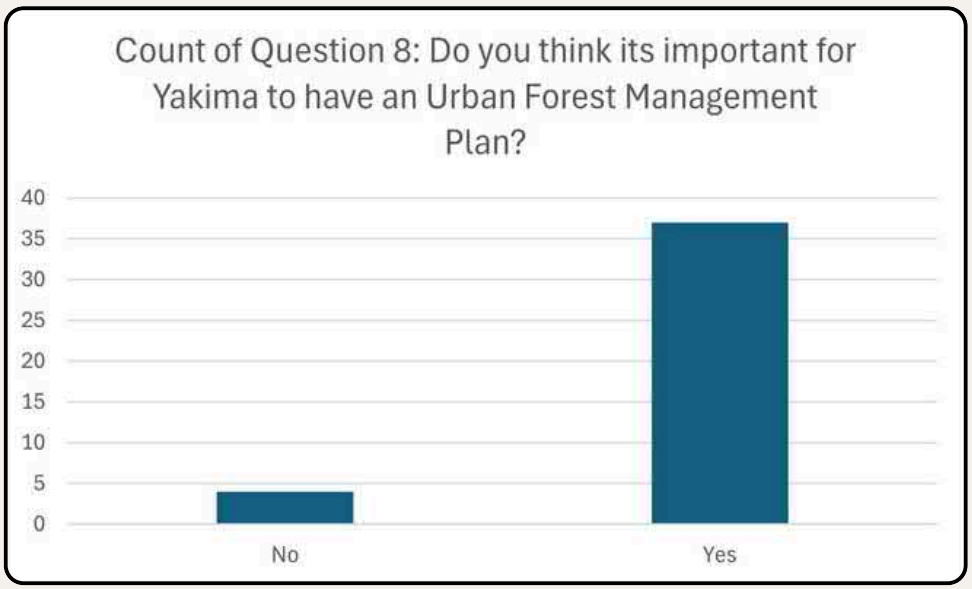

Count of Question 3: Have you ever contacted the city arborist or other city department about trees?
40
35
30
25
20
15
10
5
0
No
Yes

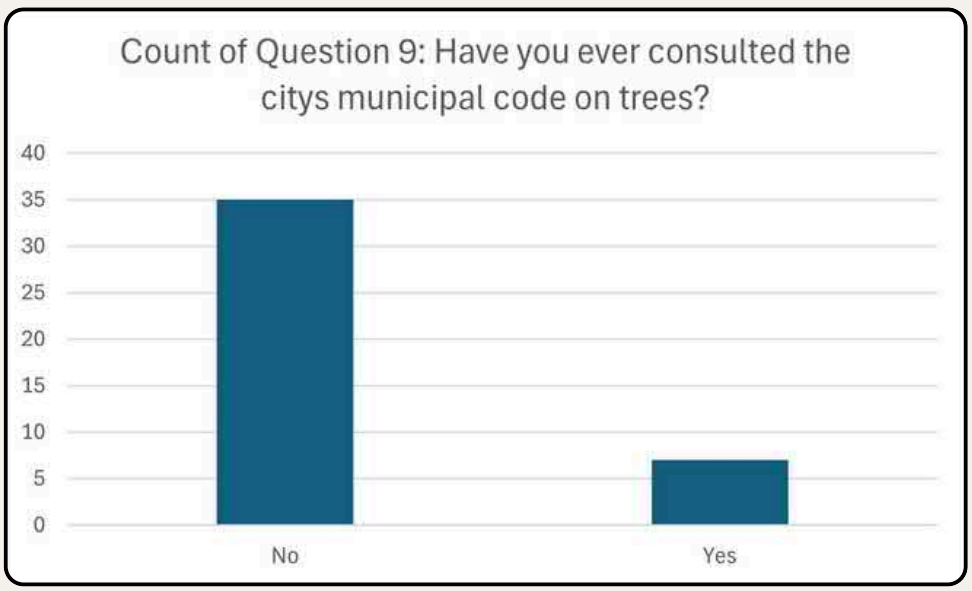

Count of Question 4: How would you rate your experience with city employees when seeking information about trees?
12
10
8
6
4
2
0
Excellent
Fair
Good
Poor

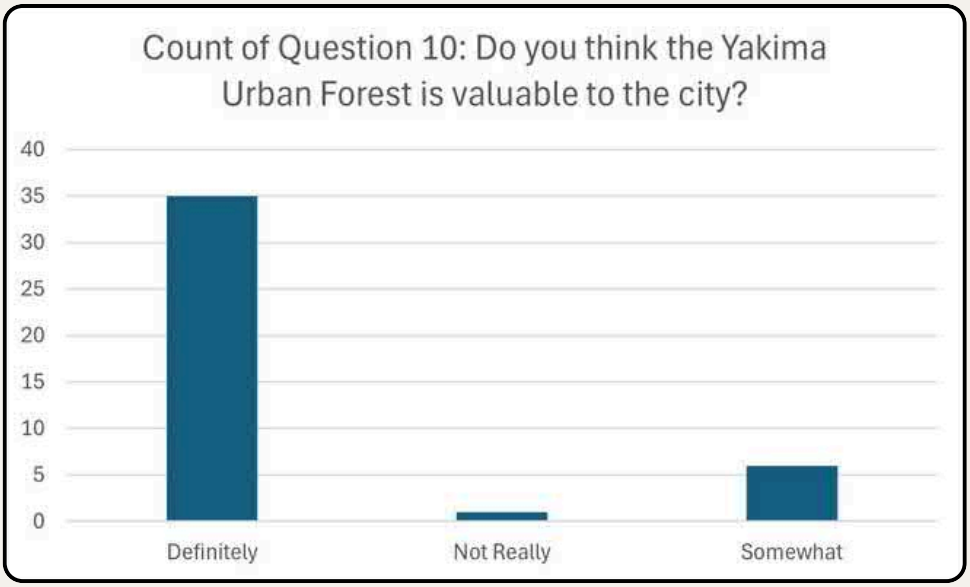

Count of Question 5: What type of care do you believe city trees receive?
30
25
20
15
10
5
0
Excellent
Fair
Good
Poor

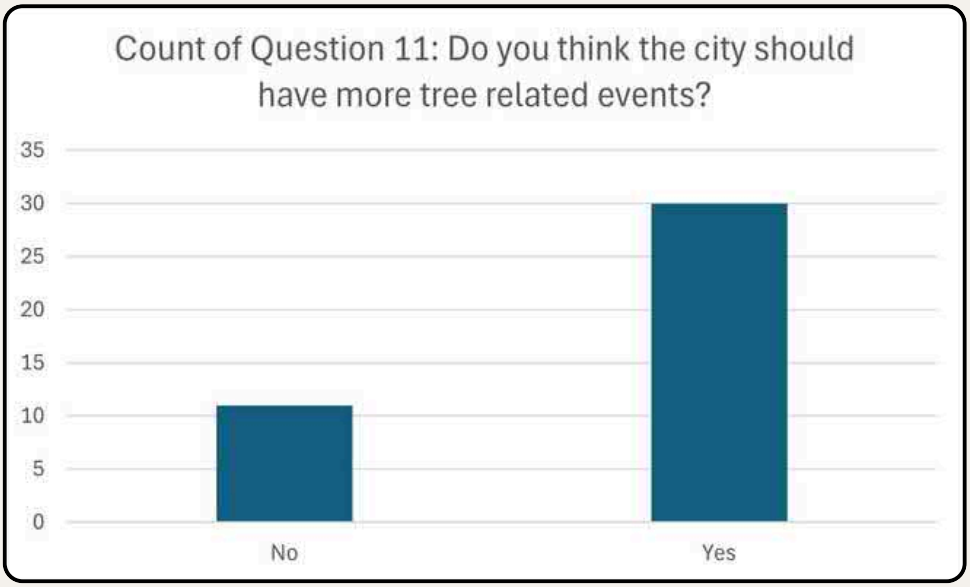

Count of Question 6: Do you think Yakima spends the appropriate amount of money to care for the trees?
25
20
15
10
5
0
I don't know
No
Yes

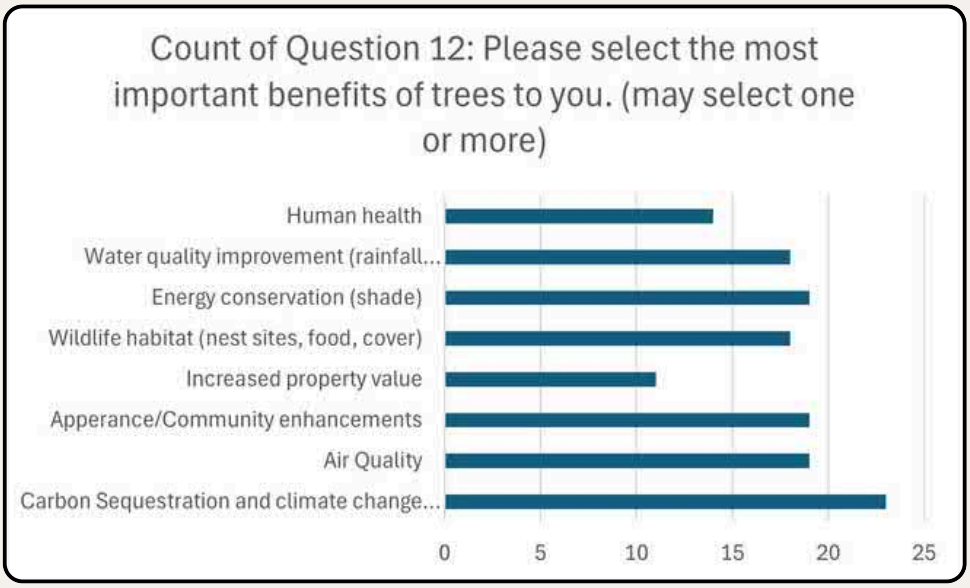

Count of Question 7: Are you aware of the Parks, Recreation and Yakima Tree Board and their activities?
25
20
15
10
5
0
Not at all
Pretty Familiar
Somewhat


Count of Question 8: Do you think its important for Yakima to have an Urban Forest Management Plan?
40
35
30
25
20
15
10
5
0
No
Yes


Count of Question 9: Have you ever consulted the citys municipal code on trees?
40
35
30
25
20
15
10
5
0
No
Yes


Count of Question 10: Do you think the Yakima Urban Forest is valuable to the city?
40
35
30
25
20
15
10
5
0
Definitely
Not Really
Somewhat


Count of Question 11: Do you think the city should have more tree related events?
35
30
25
20
15
10
5
0
No
Yes


Count of Question 12: Please select the most important benefits of trees to you. (may select one or more)
Human health
Water quality improvement (rainfall...
Energy conservation (shade)
Wildlife habitat (nest sites, food, cover)
Increased property value
Apperance/Community enhancements
Air Quality
Carbon Sequestration and climate change...
0
5
10
15
20
25

Question 13: Please tell us the most important threats to trees in Yakima (i.e. Lack of care, drought, pests, disease, vandals, etc.)

The survey answers reflect a variety of concerns about the threats to trees in the area. Here is a summary of the key points mentioned:

Lack of Care and Maintenance:

- Multiple respondents cited lack of care as a major issue.
- This includes both lack of care by property owners and city workers.

Vandalism and Damage:

- Vandals and homeless individuals breaking or damaging trees.
- Vandals carving into trees.

Environmental Factors:

- Drought and lack of water were frequently mentioned.
- Pests, disease, and climate change impacting tree health.
- Heat and warming were also noted as threats.

Poor Planning and Planting Practices:

- Planting trees too close to buildings, under power lines, or using unwanted varieties.
- Insufficient underground space for tree growth and irrigation.
- Timing of planting (e.g., planting in late November) affecting tree survival.

Community Issues:

- Lack of community knowledge about the importance and care of trees.
- Homeowners' lack of understanding of appropriate trees for the area.

Specific Threats:

- Use of pesticides.
- Damage from the unhoused.
- Poor pruning practices.

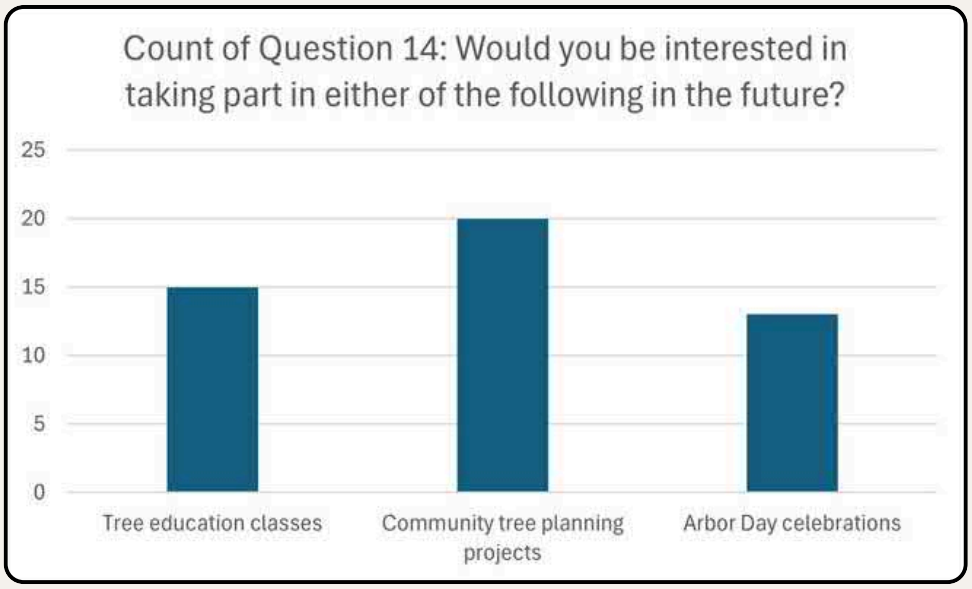
Climate and Weather:

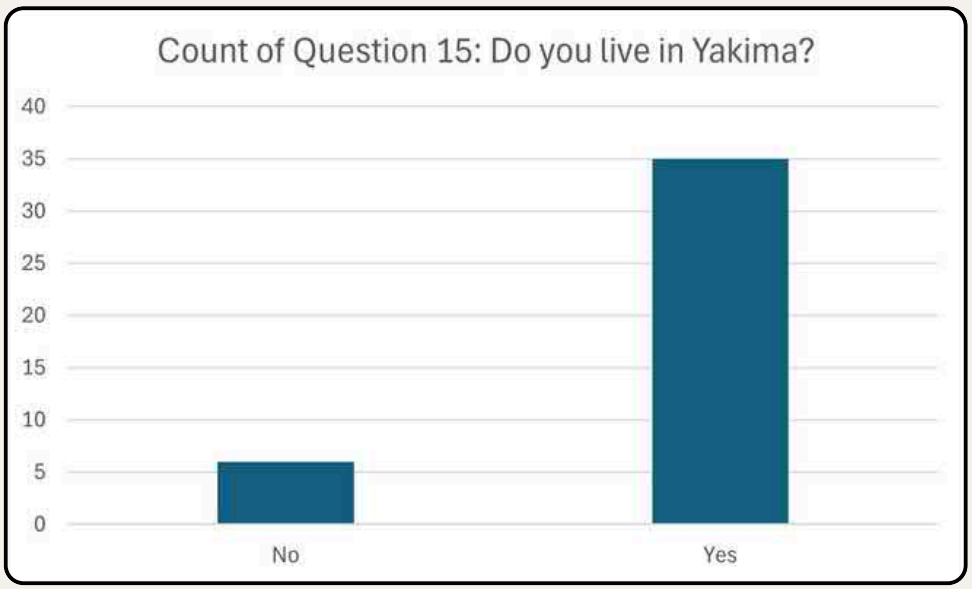
- General concerns about the dry climate and its impact on trees.
- Mention of drought as "normal rainfall."

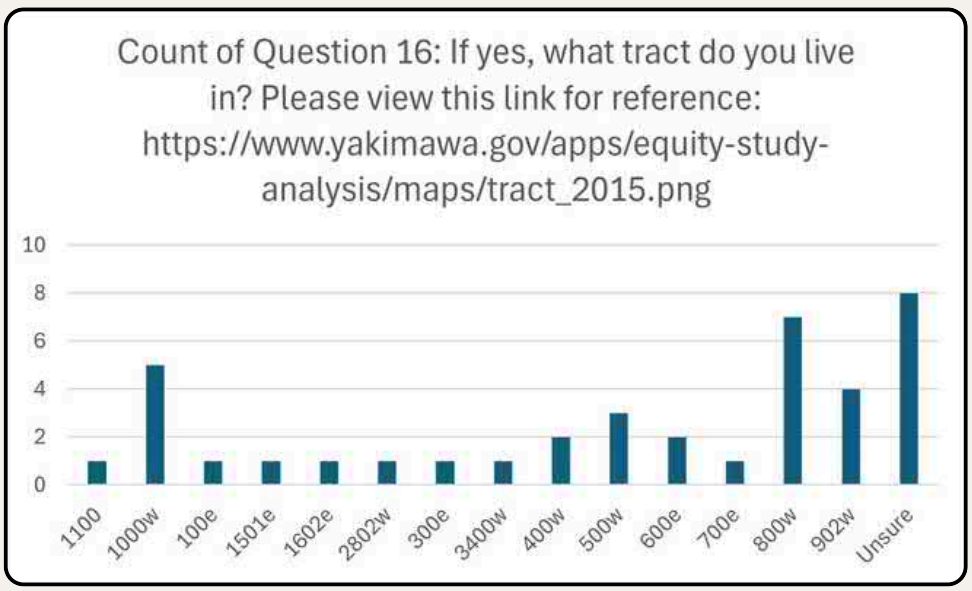
Suggestions for Improvement:

- Using indigenous trees and co-planting with ground cover and shrubs, specifically referencing the Miyawaki Method for sustainable urban forests.

The responses suggest a need for better care and maintenance, improved planning, and greater community education to address the various threats to trees in the area.


Count of Question 14: Would you be interested in taking part in either of the following in the future?
25
20
15
10
5
0
Tree education classes
Community tree planning projects
Arbor Day celebrations


Count of Question 15: Do you live in Yakima?
40
35
30
25
20
15
10
5
0
No
Yes


Count of Question 16: If yes, what tract do you live in? Please view this link for reference: https://www.yakimawa.gov/apps/equity-study-analysis/maps/tract_2015.png
10
8
6
4
2
0
1100
1000w
100e
1501e
1602e
2802w
300e
3400w
400w
500w
600e
700e
800w
902w
Unsure

Question 17: Is there anything else you would like to tell us?

The survey answers reflect a variety of concerns about the threats to trees in the area. Here is a summary of the key points mentioned:

General Support for Trees:

- Many respondents emphasized the need for more trees, especially real, big trees.
- Some respondents thanked the city for taking care of existing trees and highlighted the importance of maintaining large, irreplaceable trees.

Specific Suggestions:

- Utilize the Miyawaki Method of planting native trees and shrubs to create urban forests.
- Emphasize planting native trees, such as native maples and the Garry Oak, which are better suited for the climate and support local wildlife.
- Consider an incentive program for keeping large trees on private property.
- Address the Tree of Heaven, a noxious plant, and its attraction to pests like the Spotted Lantern Fly.

Maintenance and Planning:

- Trees should not only be prioritized for planting but also for maintenance.
- Instead of removing old trees due to sidewalk damage, accommodate their roots to prevent future issues and reduce the need for supplemental watering.
- More significant street trees are needed to provide shade and reduce the heat island effect.
- Respondents pointed out that trees offer minimal maintenance once established and enhance the beauty and livability of the city.

City Management and Spending:

- Some respondents expressed concerns about the city's lack of attention to trees and questioned how much was spent on the survey.
- There were suggestions for improving city planning, such as planting trees down the center of Yakima Ave and investing in landscaping.

Community Involvement and Crime Prevention:

- There were suggestions to involve criminals in planting and caring for trees as part of community service.
- Trees are seen as a vital part of the city ecosystem, contributing to the overall quality of life.

Map and Survey Clarity:

- Several respondents found the map in the survey hard to read and suggested adding street names or notable landmarks for better orientation.
- There were comments about the need for better descriptions of the survey's purpose and the area it covers.

Climate and Environment:

- Yakima's arid desert climate was noted, with a call to care for existing shade and green spaces.
- The need for trees to match the climate and provide benefits such as shade, beauty, and habitat for wildlife was emphasized.

Overall, the responses show strong support for increasing and maintaining the urban forest in Yakima, with practical suggestions for improvements in planning, maintenance, and community involvement.