Community Forest Management Plan

Durango, CO

December 2024

PlanIT Geo™
developers of TreePlotter

CITY of DURANGO

Community Forest Management Plan

City of Durango, CO

December 2024

Acknowledgements

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OUR MISSION: WHY WE EXIST

We provide outstanding services and experiences for the entire community.

OUR VISION: WHAT WE ASPIRE TO BE

A multigenerational community which is authentic, diverse, engaged, thriving, and environmentally responsible.

OUR VALUES: WHAT WE BELIEVE

Teamwork | Dependability | Professionalism | Service | Respect | Innovation | Wellbeing

The Forestry Management Plan supports the 2024 City of Durango Strategic Plan through the Safety and Quality of Life Goal, Objective 3.3: Continue the ongoing maintenance, preservation, and acquisition of quality parks, trails, and natural lands.

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Executive Summary

Introduction

Durango's community forest is not a remnant of natural woodlands but a result of human effort and civic growth. As the city has developed, so has this green infrastructure, shaped and nurtured by its community. However, the aging community forest relies on continued human involvement—through planting, care, and policies—to ensure it continues delivering environmental, social, and economic benefits. Durango values its 134-year legacy of community forestry, recognizing the vital link between a healthy community forest and a thriving community. The Community Forest Management Plan, developed by a dedicated team and supported by residents, commits to protecting and enhancing the city's green spaces for future generations. Trees play a vital role in the urban ecosystem, reducing stormwater runoff, sequestering carbon, filtering pollutants, and helping mitigate climate change. They also improve public health, raise property values, boost economic vitality, and enhance the quality of life for all who live, work, and play in Durango.

With this Community Forest Management Plan ("CFMP" or "Plan"), the City of Durango, herein referred to as "the City," is setting forth a 10-year framework to guide its community forestry goals, targets, actions, and strategies. This CFMP is designed to be a decade-long roadmap, grounded in data and tailored to Durango's unique needs, to manage and enhance the city's community forest. Within this 10-year plan, a 10-year maintenance and planting cycle has been established to address routine tree care, pest and disease management, and replanting efforts. This cycle is based on the analysis of inventory data collected from 2023-2024, ensuring that regular and proactive maintenance supports the overall goals of the CFMP. Through community engagement exercises, the recommendations in this Plan are specific to Durango and reflect the community's vision for a thriving community forest. As Durango continues to grow in a changing climate, this CFMP will serve as a foundational document to guide sustainable community forestry practices, supported by community stewards and partners.

This Plan is a strategic, forward-looking document that complements but does not change or override the existing policies and requirements outlined in the Durango Municipal Code, the Comprehensive Plan, the 2024 Strategic Plan, or the Land Use and Development Code. The community forest plays a vital role in enhancing the quality of life and well-being of Durango's residents.

WHAT IS THE COMMUNITY FOREST?

Durango's community forest refers specifically to the collection of trees and woody plants growing within the city. This includes trees along streets, in city parks, natural areas, open spaces, trails, and greenways. These trees contribute to the city's green infrastructure, providing environmental, social, and economic benefits to the community.

Aligning City Priorities

The Community Forest Management Plan complements existing city and regional planning efforts such as the Sustainability Plan, Comprehensive Plan, Strategic Plan, and the Parks, Open Space, Trails & Recreation Master Plan. Involvement from stakeholders and residents has been key to the development of the Community Forest Management Plan and establishing the Plan's priorities. A diverse group of city staff, residents, and community stakeholders provided perspectives on the most important issues faced by the community forest.

Collectively, this group created the following Guiding Principles for the Plan. The Plan's goals reflect these values and priorities.

- Optimize Tree Cover and Ecosystem Services: Maintain optimal levels of diverse tree cover to maximize air purification, water regulation, wildlife habitat, and overall ecological health.
- Strengthen Tree Health and Diversity: Commit to the health and genetic diversity of our community forest to enhance resilience against environmental stresses and promote long-term sustainability.
- Enhance Conservation and Best Practices Management: Combine conservation efforts with best practices in tree selection, placement, and maintenance to safeguard existing resources and minimize urban hazards.
- Cultivate Education and Community Engagement: Develop educational initiatives and engage the community in managing both public and private tree resources, deepening the connection between Durango's citizens and their community forest.
- Advance Regulatory Coordination and Environmental Adaptability: Streamline efforts through improved regulatory frameworks and interdepartmental coordination, adapting to environmental challenges to ensure the preservation and expansion of our canopy coverage.

THE PLANNING

PROCESS

The development of the Durango Community Forest Management Plan was based on answering four key questions:

- **What Do We Have?**
- **What Do We Want?**
- **How Do We Get There?**
- **How Are We Doing?**

This structure, termed "adaptive management," is commonly used for resource planning and management, offering a useful conceptual framework for managing Durango's community forest resource (Miller, 1988).

Urban Forestry Audit

The goals in the Plan align with the U.S. Forest Service's Urban Forest Audit System and the actions are intended to guide the City towards improvements in ranking for each of the 730 elements within the 11 categories of urban forest management. As actions are implemented, the City may update the audit to gauge success, evaluate progress, and adjust accordingly. Based on the results of the Planning Elements and the Urban Forest Audit, six overarching goals were identified under the following categories: Tree Management Policy, Capacity, Training, and Authority, Budget and Funding, Assessments and Plans, Community Engagement, and Green Asset Management. Durango scored 63% out of 100%.

The audit scoring was then applied to these goals areas, so the City of Durango can regularly track process against these initial findings. This strategic planning process is continued throughout the CFMP, and the How Do We Get There section outlines specific actions and strategies to align Durango's City staff behind an actionable and achievable work plan.

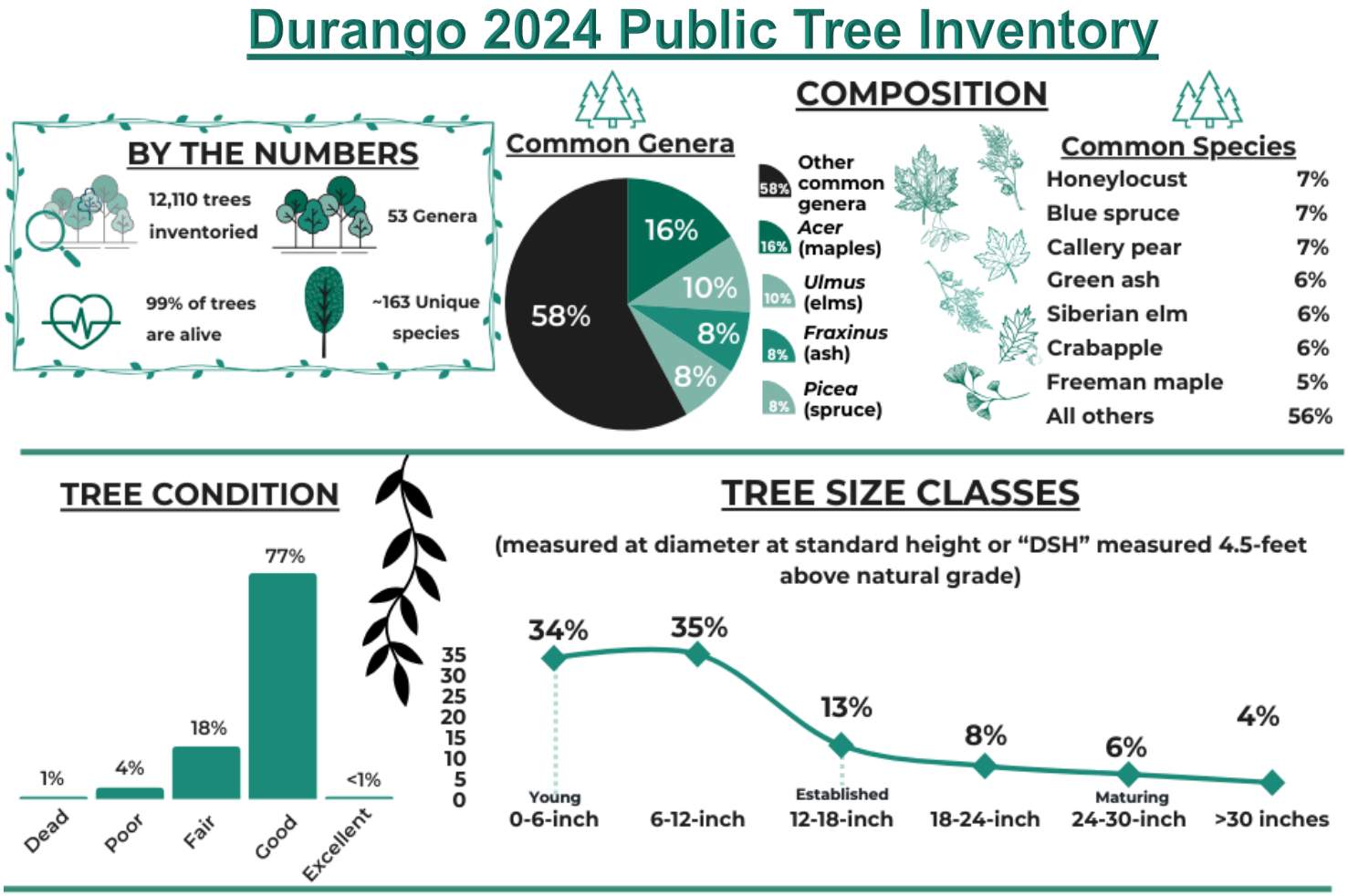
Community Forest Key Findings

Tree inventory data collected from 2023-2024 includes public trees located within street rights-of-way, parks, and other City property. The tree inventory includes details about each tree's size, identifying characteristics, location, condition, and maintenance needs. A total of 163 unique tree species from 53 unique genera were inventoried in Durango. The ten most prevalent species comprise 56 percent of the total publicly managed inventoried tree population. Maple species are the most predominant, with 16 percent of the city's trees belonging to the genus *Acer*. The majority of trees inventoried are in good condition (77 percent), 18 percent are in fair condition, and five percent of trees are in poor or dead condition. A tree planting space inventory was completed to equip the City for future planting efforts. A complete analysis of the tree inventory is included in the Tree Inventory Overview section of this CFMP to identify trends in characteristics and maintenance needs for City owned trees.

Durango has 24 percent canopy cover and a Tree Equity score of 99 out of 100. Cities located in semi-arid ecoregions, like Durango, are recommended to have 15 percent canopy cover.

Durango's trees face various biotic and abiotic threats that impact their health and longevity. Biotic threats include pests and diseases such as ips beetle, thyronectria canker, Rocky Mountain pine beetle, spruce beetle, honeylocust borer, and elm leaf beetle. Although emerald ash borer (EAB) is a significant threat in Colorado, it is not currently present in Durango. Additionally, abiotic factors like urban heat, drought, soil compaction, and physical damage from plows, garbage trucks, and other equipment pose frequent challenges to Durango's urban trees. These environmental stressors not only lead to direct tree mortality but also weaken trees, making them more susceptible to pests and diseases.

The inventoried 12,110 publicly maintained trees have an asset value of $31.7 million equating to an annual average of $2,617 per tree and $1,623 per capita (2024 population).



Tree Management Key Findings

A routine pruning, removal, and planting program is essential for the effective management of community forests. While the industry-recommended maintenance cycle is seven years, a ten-year Tree Management Program was developed for Durango as the City works to elevate its forestry program by increasing capacity, community engagement, and utilizing strategies outlined in the CFMP. This Program, based on tree inventory data, provides an actionable framework for sustainably managing the community forest with proper staffing and resources. Although the targets outlined in the Program are ambitious, working toward these goals—even if not fully achieved annually—will gradually transition the community forest to a healthier and more sustainable state. This progress will position the City to implement a seven-year maintenance cycle in the future, potentially within ten years or by the next CFMP update. Collaboration with volunteer organizations to promote tree planting, stewardship, and preservation is strongly encouraged to support these efforts.

Priority tree removals and pruning are scheduled on a three-year cycle to address high-risk trees and urgent needs, with annual updates to adapt to changing conditions or major events. Mitigation plantings associated with these activities also follow a three-year cycle but are distinct from routine plantings, as they are tailored to specific removals and adjusted annually to reflect current forest conditions. This approach ensures the program remains flexible, targeted, and responsive to the forest's evolving needs. The recommended Public Tree Management Program is based on inventory data from September 2024 and does not reflect subsequent changes to the public tree population. The tree management workbook focuses on the inventoried trees and their maintenance needs, excluding additional recommendations such as the removal of target or invasive species.

After assessing the inventory by maintenance priorities and maintenance types, the following maintenance recommendations were identified:

MAINTAIN EXISTING TREES			
PRIORITY 1 HIGH RISK REMOVAL	11 4	Total High Risk Tree Removals Trees per year	Years 1-3
PRIORITY 1 HIGH RISK PRUNE	21 7	Total High Risk Tree Pruning Trees per year	Years 1-3
PRIORITY 2 CRITICAL REMOVAL	246 82	Total Critical Tree Removals Trees per year	Years 1-3
PRIORITY 2 CRITICAL PRUNE	441 147	Total Critical Tree Pruning Trees per year	Years 1-3
PRIORITY 3 LARGE TREE ROUTINE PRUNING (DSH ≥ 6 inches)	7,360 736	Total Trees Trees Per Year	10-year cycle
PRIORITY 4 YOUNG TREE ROUTINE PRUNING (DSH ≤ 6inches)	4,031 1,008	Total Young Trees Trees Per Year	4-year cycle
PLANTING NEW TREES			
TREE PLANTING (REPLACEMENT OF PLANNED REMOVALS)	257 86	Total Trees Trees Per Year	3-year cycle
RECOMMENDED TREE PLANTING	820 82	Total Trees Trees Per Year	10-year cycle

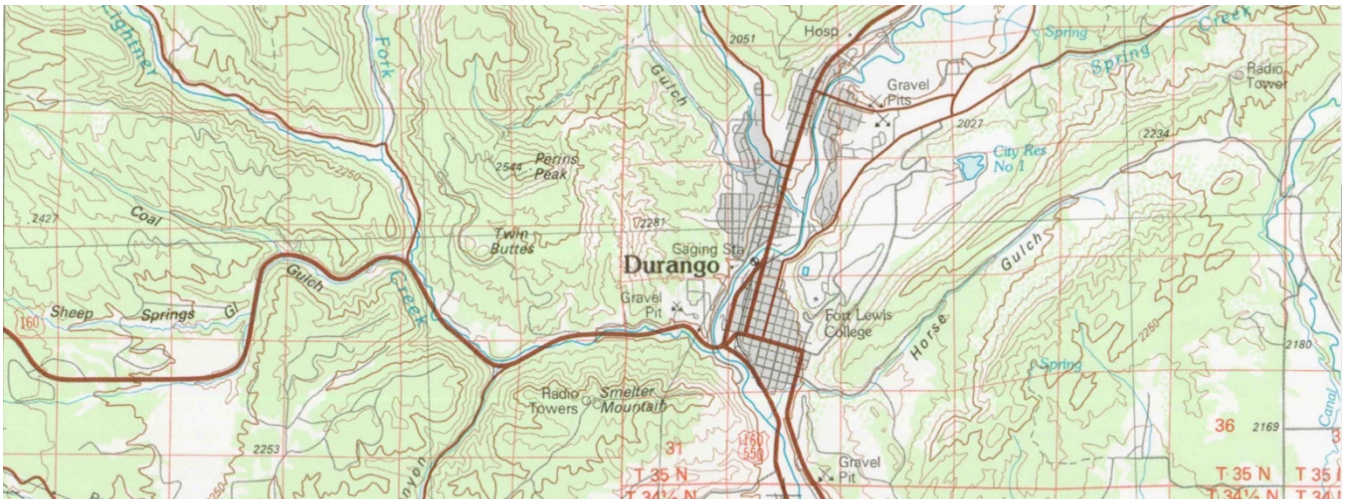
Regular pruning cycles and tree planting projects are vital to the health of the community forest. Priority work (especially for high risk and critical trees) will take precedence to ensure that risk is expediently managed. Young tree training and adequate watering are vital to long-term tree health and greatly reduce the need for future maintenance. Routine monitoring of the tree population is essential to identifying and addressing new and emergency high priority or high-risk situations as they arise. A successful community forestry program has adequate staffing and resources to accomplish the proactive tree maintenance program and to implement the Community Forest Management Plan. As Durango invests in its community forestry program, the more valuable, sustainable, and resilient the community forest becomes.

Between 2017 and 2023, the City removed 900 trees and planted 1,176. From 2017 to 2020, the City planted an average of two trees for every one removed. However, between 2021 and 2023, this trend reversed, with two trees being removed for every one planted. Considering the aging community forest, this is an unsustainable ratio for maintaining a healthy community forest and tree canopy.

CFMP Key Recommendations

- Update the suitable tree list based on inventory data, climate change projections, site suitability (Right Tree, Right Place), drought tolerance, ecosystem services, and canopy goals.
- Strengthen tree protection measures by implementing consistent internal and external policies to safeguard the community forest.
- Implement the Goals and Actions outlined in the Tree Pest and Disease Management Plan to enhance the resilience and sustainability of the community forest.
- Focus on routine maintenance and improving the overall health and resilience of the community forest canopy rather than expanding canopy coverage.
- Prioritize the removal and replacement of invasive species within the inventoried tree population and the citywide canopy to improve ecosystem health.
- Utilize a citizen science group to assist in pruning small trees and planting new ones, increasing community capacity for tree care.
- Add a work component to the city tree trimmer application process to enhance regulation and capacity for routine maintenance.
- Use the Tree Maintenance Workbook to inform budget requests and prioritize the removal of Priority 1 and 2 trees, reducing overall workload.
- Create internship programs with local colleges or organizations to expand capacity in tree work, engagement, marketing, and data management.
- Measure Plan progress every two years using the provided benchmarking values to ensure alignment with CFMP goals.
- Foster year-round advocacy and community engagement to highlight the importance of the community forest.
- To maximize benefits, Durango needs to invest in forestry education, increase tree care funding, and ensure equitable green infrastructure across all neighborhoods.
- Recognize the CFMP as a strategic guide highlighting Durango's current status and outlining the steps needed to align with industry standards. While achieving these benchmarks will require time and resources, the focus should remain on consistent progress toward a healthier and more resilient community forest.

Introduction



About Durango

Nestled in the Animas River Valley and surrounded by two million acres of the San Juan National Forest, Durango is a hidden gem in La Plata County, southwestern Colorado. This unique location sits at the confluence of the Rocky Mountains and the deserts of the Four Corners region, where Utah, New Mexico, Arizona, and Colorado meet, creating a natural playground of pine forests, aspen groves, lakes, streams, and breathtaking views. Durango spans approximately 17.2 square miles, with 21 percent (4.3 square miles) of this area covered by a tree canopy. The city's 34 parks, spanning over 235 acres, and its extensive open spaces covering 3,500 acres, feature amenities such as picnic facilities, playgrounds, skateboard parks, fishing areas, and trails.

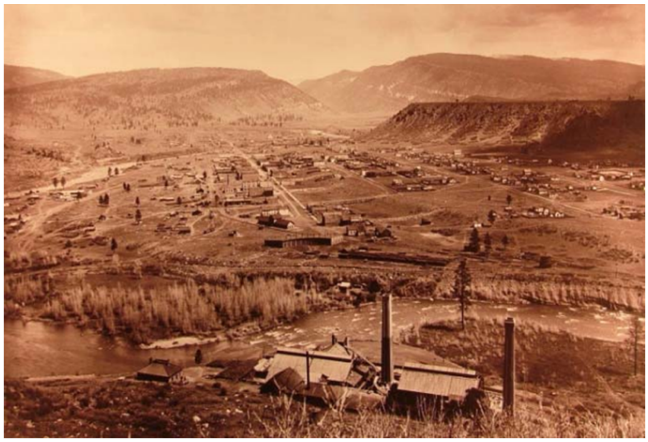
Proximity to Mesa Verde National Park, a World Heritage site renowned for its prehistoric artifacts and cliff dwellings, adds to Durango's allure. Situated at 6,512 feet above sea level, Durango enjoys a dry, moderate climate with exceptionally pure air and water. The town experiences ideal four-season weather: mild and sunny winters with an average snowfall of 71 inches; warmer springs with 19 inches of annual precipitation; mild summers with temperatures rarely exceeding the high 80s, supported by full rivers and reservoirs from deep mountain snowpacks; and cool, dry falls, perfect for mountain hikes and viewing vibrant aspen and scrub oak foliage.

As the county seat, Durango is a regional commerce hub. In 2020, La Plata County's population was estimated at 55,638 residents. The 2000 census recorded Durango's population at 13,922, growing to 19,071 by the 2020 census. The city boasts a four-year college, a regional medical facility, a modern commercial airport, and a variety of boutiques, specialty shops, galleries, and diverse restaurants. Durango's vibrant art, music, and theater scene features numerous galleries and community-supported arts. The city offers a wide range of dining experiences, many of these restaurants feature locally sourced ingredients, emphasizing the town's commitment to sustainability and supporting local businesses (Brewer, 2024).

Renowned for road and mountain biking, Durango hosts the annual Iron Horse Bicycle Classic and has previously hosted the World Mountain Bike Championships and World Cup. Winter activities include skiing, snowshoeing, and snowmobiling, while hiking and fly-fishing are popular year-round. The nearby Purgatory Resort offers skiing, and the region is famous for its natural hot springs.

Durango's Community Forest Management Plan (CFMP) underscores the city's commitment to balancing urban growth with environmental stewardship, ensuring the preservation of green spaces and fostering a connection with nature for its residents. This synergy between urbanization and nature is central to Durango's identity, offering the benefits of city life alongside the tranquility and recreational opportunities of its rich natural surroundings.

History of Durango's Natural Environment



Long before European settlers arrived, Native Americans had established communities along the Animas River. Archaeological evidence indicates a population surge in the area during the late 8th century, possibly exceeding the current population. The Ancestral Puebloans, who had departed the area due to climate change by the time the Ute Indians settled here, left behind significant archaeological sites, including those preserved at Mesa Verde National Park.

Founded by the Denver and Rio Grande Railroad Company in September 1880, Durango was strategically developed along the Animas River to support the San Juan mining district. Initially settled during the 1872 gold rush, it attracted miners seeking silver and gold, particularly in Silverton. Durango was favored for its mild climate, abundant water, and coal resources essential for smelting ore. The railroad bypassed Animas City, establishing Durango as the new hub. Named after Durango, Mexico, by former territorial governor A. C. Hunt, the name derives from the Basque "Urango," meaning "water town." Today, Durango, Colorado, is a sister city to Durango, Mexico, and Durango, Spain.

Durango quickly recognized the value of green spaces amidst the growing urban landscape. During a time when large cities like New York began to appreciate the significance of open spaces and parks, Durango's initial city plan included two parks: one on the Boulevard (Third Avenue) and another near what is now Park Elementary School. In 1888, Riverside Park was added in north Durango, marking the beginning of the city's dedication to green space (City of Durango, 2019).

Though the original settlers found few trees in the area despite being located along the Animas River, the City Council acted swiftly to enhance the urban landscape, allocating $150 to plant trees along the Boulevard, Durango's most fashionable street. However, the newly planted trees suffered from neglect, prompting the proactive Ladies Improvement Society to petition the Council in 1892 for a monthly watering budget of $10 (City of Durango, 2019).

In 1893, the Council ordered 500 trees for the city parks, of which 476 were planted by a local committee. A caretaker was employed to maintain these parks at a salary of $50 per month, ensuring they were well-watered and prepared for winter.

As the parks began to flourish, new challenges arose, including damage from children playing and financial constraints during the 1890s depression. Despite these issues, the community's commitment to green spaces persisted, with ongoing efforts to manage weeds and protect the parks from misuse.

Entering its second century, Durango's appreciation for its lush, tree-covered environment grew, with the City hiring its first arborist in 1985 and earning the designation of a "Tree City USA", which it has held for 43 years. This transformation into a "community forest" has significantly enhanced the quality of life for residents, fulfilling the vision of Durango's founders. The city's enduring dedication to preserving natural beauty and fostering a connection with nature continues to be celebrated by both residents and visitors. Durango's balanced approach to urban development and environmental stewardship remains a testament to its rich legacy and commitment to green spaces.

Benefits and Services Provided by Durango's Trees

Urban and community forests are crucial to enhancing urban life, offering aesthetic beauty, improved property values, and community health benefits. They provide essential environmental services like air purification, stormwater mitigation, cooling shade, and biodiversity support. Economically, trees increase property values and lower energy costs, while socially, they offer recreational spaces, boost mental health, and encourage active lifestyles. Durango's CFMP emphasizes sustaining these benefits. Recognizing community forests as part of essential green infrastructure, municipalities invest in community forestry to create livable communities. As cities expand, enhancing green infrastructure—such as parks, woodlands, and natural areas—is vital for maintaining clean air, water, and overall quality of life. Unlike traditional infrastructure, green infrastructure gains value and enhances environmental services over time, positioning open spaces and parks as community necessities.

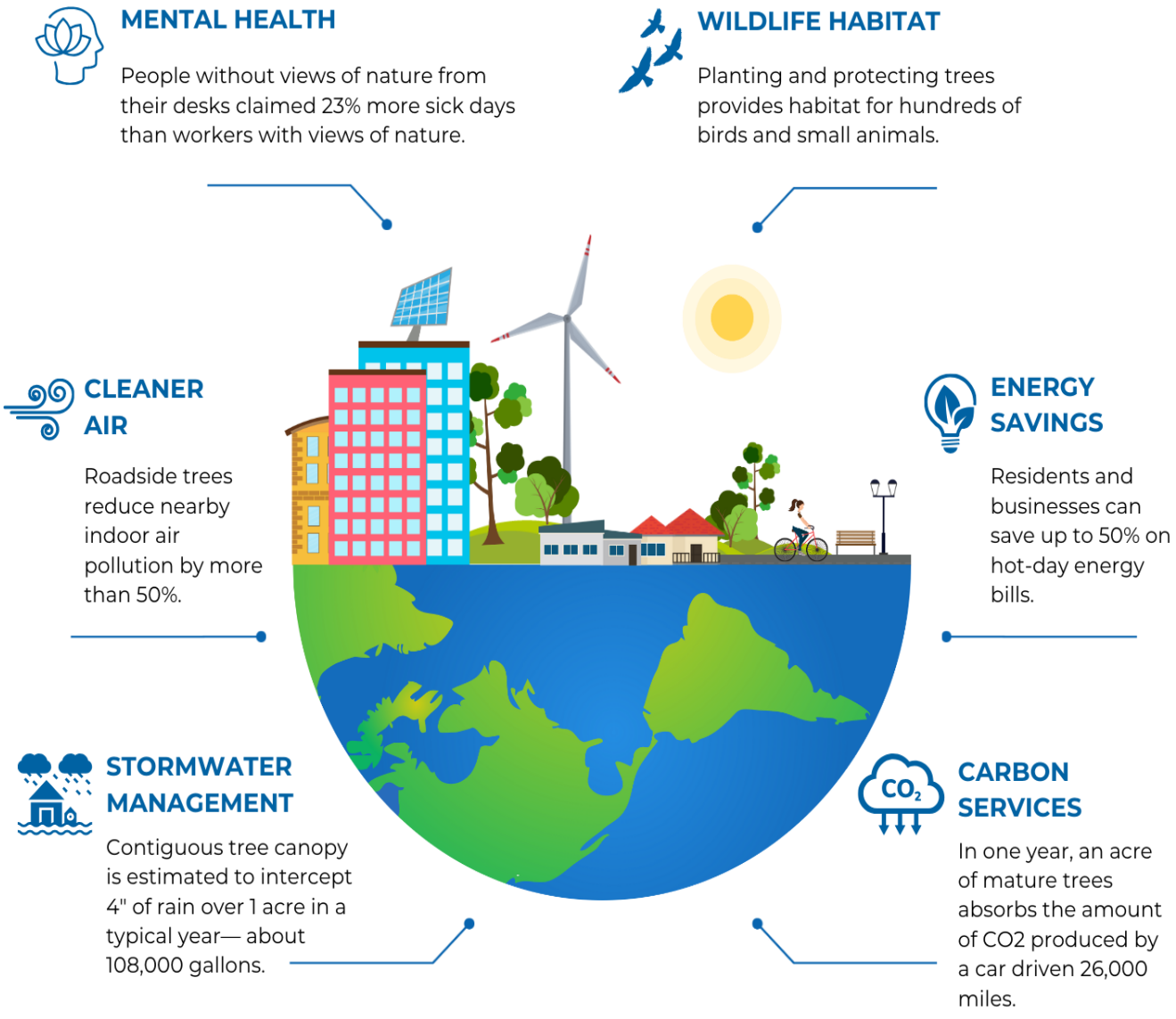


Figure 1. Benefits and services of Durango's trees.

A Closer Look at Trees Improving the Quality of Life in Durango

Trees—whether shade, flowering, fruit-bearing, or those with vibrant fall colors—offer diverse benefits to the urban ecosystem by enhancing tree canopies, parks, and green spaces. While many environmental benefits are measurable, others are experiential, like the tranquility of a tree-lined trail.

Durango's community forest provides numerous social and health benefits. Park and boulevard trees foster community engagement and a sense of belonging, offering spaces for social activities and relaxation away from city life's hustle. Research indicates that urban greenery reduces stress, improves mental well-being, and promotes physical activity, leading to healthier, happier communities.

Additionally, Durango's community forest encourages environmental education and volunteering, inspiring residents to learn about nature, participate in tree planting, and engage in environmental stewardship.

Durango's community forest significantly enhances social interactions, well-being, health, and community engagement, contributing to a more livable city. Studies link trees and vegetation in parks to increased neighborhood safety and social activity, strengthening social ties among residents (Kim et al., 2020).

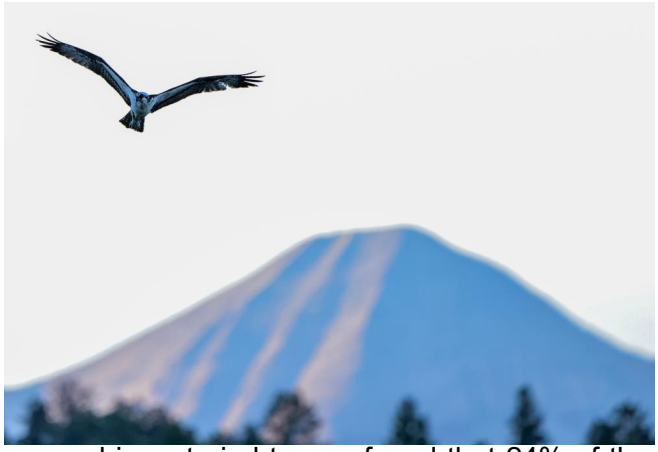
> "We can plant and manage trees and vegetation that create an "urban forest" that provides habitats for a variety of animals while also contributing to human wellbeing. We can protect and restore wetland areas that perform crucial ecosystem functions. As our climate changes, healthier communities and ecosystems will be more resilient to the stresses of changing weather, heat, and water patterns."
>
> –**Durango Sustainability Plan 2022**

Nature encounters in urban areas improve attitudes, reduce stress, enhance attention, and boost cognitive performance (Wolf et al., 2020). Tree canopies and green spaces encourage physical activity, with higher green space percentages near homes correlating with better reported health, especially among the elderly and lower socioeconomic groups (Ulmer et al., 2016). Residents in greener areas are three times more likely to be physically active.

Urban nature exposure, such as viewing trees from windows or walking in tree-lined areas, is vital for mental well-being, increasing happiness and reducing stress (White et al., 2013). More tree cover near schools also improves student performance, with children showing better focus after walks in green areas compared to non-green urban settings (Taylor et al., 2009).

Healthcare and insurance industries highlight the link between natural settings and improved health outcomes. Trees and green spaces are associated with increased longevity, reduced cancer and heart disease risk, lower anxiety and depression, enhanced immune function, and reduced stress hormones. A 2016 study found a 12% lower mortality rate among those with significant greenery near their homes (James et al., 2016). Additionally, hospital patients with nature views had shorter stays than those with views of buildings (Mihandoust et al., 2021).

Environmental Benefits of Trees



Research from the past few decades has provided extensive data on the environmental benefits of community forests, offering valuable insights for researchers, managers, and practitioners. This data helps communicate the benefits of trees to residents and stakeholders, supports the integration of trees into infrastructure design such as stormwater management, and guides strategies to address inequities.

A 2024 tree canopy assessment, covering the entire area within Durango's city limits—including open spaces and inventoried trees—found that 24% of the city (2,739 acres or 4.3 square miles) is covered by tree canopy. Additionally, a 2024 tree inventory assessed the composition and structure of all publicly managed trees, providing data used to calculate various benefits of Durango's community forest.

Citywide Tree Canopy Benefits

The citywide tree canopy, covering both public and private lands, provides an estimated annual ecosystem benefit of $883,000 through improved air quality and reduced stormwater volumes. Specifically, Durango's 2,738 acres of tree canopy capture 211,636 pounds of pollutants annually, including carbon monoxide, nitrogen dioxide, ozone, fine and coarse particulates, and sulfur dioxide.

- Carbon monoxide 628 pounds
- Nitrogen Dioxide 10,092 pounds
- Ozone 127,621 pounds
- Fine particulates (PM2.5) 2,373 pounds
- Coarse particulates (PM10) 68,473 pounds
- Sulfur dioxide 2,450 pounds

The USDA Forest Service's i-Tree research estimates this pollution removal is valued at approximately $447,000 annually. Additionally, Durango's trees absorb about 20.6 million gallons of stormwater each year, valued at $183,000, and sequester 2.9 million pounds of carbon, valued at $253,000. Future updates to the 2024 tree canopy assessment should include further ecosystem benefit calculations and analyses of changes in canopy cover and associated benefits.

Public Tree Benefits

The inventory of 12,110 publicly managed trees in Durango shows these trees provide annual benefits totaling $14,774. They capture over 12.5 tons of air pollutants, sequester 63 tons of carbon, and prevent more than 1,000,000 gallons of runoff each year. The replacement value of Durango's public tree population is estimated at $31.7 million, with a carbon storage value of $806,000 for the 4.7 thousand tons of carbon stored. On average, the replacement value and cumulative benefits amount to $2,617 per tree and $1,623 per capita (based on the 2021 population). Proper management can increase these values, while declining tree health and cover can reduce them.

Figure 2. Estimated annual benefits of Durango's community forest.

Challenges Facing Durango's Community Forest

Urban trees in Durango face challenges common to their counterparts globally, including harmful pests and diseases, a changing climate, soil and air pollution, compacted soils, limited growing spaces, development pressures, and resource constraints. To overcome these challenges and harness the benefits of these valuable tree assets, strategic and efficient planning and care for the community forest are imperative.

External Challenges

- Durango's urban development and redevelopment create both challenges and opportunities for the community forest.
- Uneven tree canopy cover across neighborhoods leads to disparities in environmental quality, public health, and community well-being.
- Climate change introduces new stresses for native trees, including extreme temperatures, shifting precipitation patterns, and an increase in non-native pests.
- Maintaining a healthy tree population to mitigate climate extremes is challenging, requiring significant resources to maximize tree benefits while coping with increasing pressures.

Internal Challenges

- Proper and timely management of the trees in accordance with current best management practices.
- The need for updated tree-related regulations that preserve, protect, and grow the community forest aligned with best practices and City priorities.
- Limited financial and operational resources to address the gradual and immediate impacts of climate change.
- Addressing emerald ash borer and other emerging tree pests and diseases.
- Strategic tree planting programs and initiatives needed to sustain tree canopy and the associated benefits.
- Educating and revitalizing community tree stewardship

Durango's community forest faces a range of external and internal challenges that require strategic planning and coordinated action. By addressing both urban development impacts and climate-related stresses, the City can protect and enhance the health of its trees. Internally, ensuring resources, updating regulations, and fostering community stewardship are essential to maintain a resilient community forest. Overcoming these challenges will involve collaboration, investment, and proactive management to secure the many benefits that a thriving community forest provides to Durango's residents and environment.

The Time is Now

It is critical for Durango's environment, economy, and community well-being that the City act now to sustainably manage the community forest. The City has a Comprehensive Plan for how Durango will grow and change with development. Just as important, the City's Sustainability Plan lays the foundation and precedent for sustainable management of the city and its assets in the face of climate change. Durango's Community Forest Management Plan supports and builds on the goals and policies of these plans and supplements those with vital analyses, studies, metrics, and strategies relating to the City's natural environment and specifically, the community forest.

Undeveloped areas contain native trees and vegetation, fertile soils, vital water resources, natural habitats, and wetlands. Protection and conservation of these critical areas is up to the citizens and the choices made by the City.

Durango's CFMP provides the roadmap with goals and supporting recommendations to manage, grow, preserve, and strengthen the community forest through invigorated partnerships that align with city and community priorities. The following section of this Plan, "What Do We Have?", is an overview of the current state of Durango's community forest and will serve as a baseline to measure future progress. Following the current state of the community forest is an overview of Durango's priorities for the community forest, "What Do We Want?", which were identified through community and stakeholder input which informed the Plan's goals, strategies, and priority actions. The "How Do We Get There?" section details the implementation guidelines, and the "How Are We Doing?" section and supporting resources in the Appendix provide additional information and studies to support adaptive management and monitoring of the Community Forest Management Plan.

Let's begin by exploring Durango's community forest.

What Do We Have?

What Do We Have?

Trees That Make Up Durango's Community Forest

Figure 3. Illustration of the types of trees in Durango.

The term infrastructure typically brings to mind roads, bridges, power lines, and storm drains. However, trees lining streets and shading parks are equally vital components of a city's infrastructure, collectively known as the community forest. These trees provide essential ecological, social, and economic benefits that enhance Durango's quality of life and overall functionality. Like other forms of infrastructure, urban trees require dedicated management and maintenance to continue delivering their services effectively.

Durango's community forest spans diverse landscapes, including streetscapes, parks, trail corridors, waterways, and commercial and residential properties. While all trees within the city contribute to the community forest and its associated benefits, the City is primarily responsible for managing and maintaining public trees. These include street trees, park trees, and trees located on other public properties. Trees within open spaces and natural areas, while part of the broader community forest, fall under the management of the Natural Resource Division and are addressed separately. Trees in open spaces and natural areas, while integral to the city's overall canopy, are not part of the detailed tree inventory and are addressed at a high level in the CFMP.

The CFMP focuses on public trees under the City's direct care, highlighting their critical role in promoting urban cooling, improving air quality, enhancing property values, and supporting biodiversity.

For street trees located within public rights-of-way, the City oversees management and maintenance, while adjacent property owners are responsible for irrigation. The CFMP emphasizes the importance of maintaining and expanding public tree populations while ensuring equitable canopy distribution. The following sections analyze the public tree populations in detail, with private and open space trees considered for their contributions to the citywide urban canopy. The accompanying illustration provides a visual summary of the different components of Durango's community forest.

Tree Inventory Overview

Figure 4. An ISA certified arborist measures a tree's Diameter at Standard Height (DSH) as part of Durango's tree inventory.

Durango's community forest is a diverse ecosystem of young and mature trees across various species, each contributing unique functions and benefits. Cultivating a resilient and varied community forest requires a thorough understanding and management of this tree population. In 2023 and 2024, an extensive inventory documented 12,110 trees on public property, representing about 6% of Durango's total estimated urban tree population of approximately 214,293. This estimation includes trees on private lands, open spaces, and natural areas.

The inventory collected data to inform the current structure, characteristics, and maintenance needs of Durango's community forest, guiding actionable recommendations in this Plan. It is important to note that this analysis, conducted in April 2024, reflects a snapshot in time. As tree conditions are dynamic, ongoing maintenance and natural changes may have altered tree condition, size, or maintenance needs since then.

Additional summaries and analyses from the 2024 public tree inventories are provided in a separate report, which includes recommendations for the strategic stewardship of Durango's community forest. This Plan centers on City-managed public trees under City jurisdiction, presenting data on tree composition, structure, and maintenance needs. The insights gained from this data were integral in shaping the strategies outlined for the sustainable management of Durango's community forest.

Public Tree Population

Number of Alive Trees:	12,031
Number of Dead Trees:	79
Total Data Points:	12,110

Table 1. The status and count of public trees in the inventory database (Note: all subsequent data summaries are based on 12,110 trees unless otherwise specified).

Species Diversity

Species composition data are essential since the types of trees present throughout the City dictate the amount and type of benefits produced, tree maintenance activities required, budget considerations, and influences species selection for future plantings.

The 12,110 publicly managed inventoried trees consist of 53 unique genera and approximately 163 different species and cultivar classifications. Of the 53 unique genera, *Acer* (maple) comprise the highest amount with 1,909 trees (16 percent), *Ulmus* (elm) with 1,267 trees (10 percent), *Fraxinus* (ash) with 988 (8 percent), and *Picea* (spruce) with 919 trees (8 percent). Among the approximately 163 unique tree species, honeylocust (*Gleditsia triacanthos*) represents the largest portion, making up 7% (904 trees) of the total tree population. This is closely followed by blue spruce (*Picea pungens*) with 7% (881 trees) and callery pear (*Pyrus calleryana*) at 7% (831 trees). Green ash (*Fraxinus pennsylvanica*), Siberian elm (*Ulmus pumila*), and Rocky Mountain juniper (*Juniperus scopulorum*) each comprise 6% of the population, with 759, 750, and 702 trees respectively. The top ten most prevalent species comprise 56 percent of the total publicly managed inventoried tree population. The remaining 45 percent is composed of other species that are primarily silver maple, littleleaf linden, Accolade elm, quaking aspen, bur oak, Austrian pine, sugar maple, white ash, ponderosa pine, American elm, and boxelder— each with at least 200 trees or more

The 10-20-30 rule in community forestry is a guideline for biodiversity in urban tree populations. It suggests that no single tree species should make up more than 10 percent of the trees in any urban area, no single genus should make up more than 20 percent, and no single family should make up more than 30 percent. This rule aims to increase diversity among urban trees, thereby reducing the risks associated with pests and diseases and increasing the resilience of the community forest. When trees of the same genus are planted together, they are more susceptible to being attacked by a single pest or disease, which can spread rapidly and cause significant damage. Diversifying plantings can significantly reduce the risk of large-scale damage from species-specific threats.

Within the public tree inventory, no species exceeds the 10 percent threshold for individual species diversity. The genus *Acer*, which includes maple trees, approaches the 20 percent threshold with a representation of 16 percent in the city's public tree inventory. Although this is not an immediate cause for alarm, there is a prudent need to diversify beyond maple species, to mitigate potential threats from pests and diseases. Maples are not well suited to Colorado soils and are prone to late-stage chlorosis, resulting in greater maintenance needs as they age. In Durango's inventoried trees, no family exceeds or approaches the 30 percent threshold.

The inventoried tree population in Durango represents only about 6% of the total estimated trees in the community forest. As a result, the actual number and species representation across the entire community forest are likely higher than shown in this report. For example, Siberian elms are probably more prevalent than the inventory indicates, potentially comprising over 10 percent of Durango's tree population.

To maintain ecological balance, the City should regularly update its tree inventory, keeping a close watch on species variety among public trees.

Size and Relative Age Distribution

The distribution of public tree ages and size classes influences the structure of the citywide community forest and impacts present and future management costs. An unevenly aged community forest offers continued flow of ecological benefits and a more uniform workflow allowing managers to more accurately allocate annual maintenance schedules and budgets.

To optimize the value and benefits of Durango's trees, the public tree population should have a high percentage of large canopy trees which provide greater ecosystem benefits. On the other hand, there must be a suitable number of younger, smaller trees in the community forest to account for and eventually replace large and mature trees in decline. Having a healthy percentage of young trees in the community forest will ensure a sustainable tree population.

To compare Durango's community forest structure to industry-recommended standards, the "ideal distribution" is used (Richards, 1983 and 1993). The diameter at standard height ("DSH" measured at 4.5-feet above grade) is used to measure relative age.

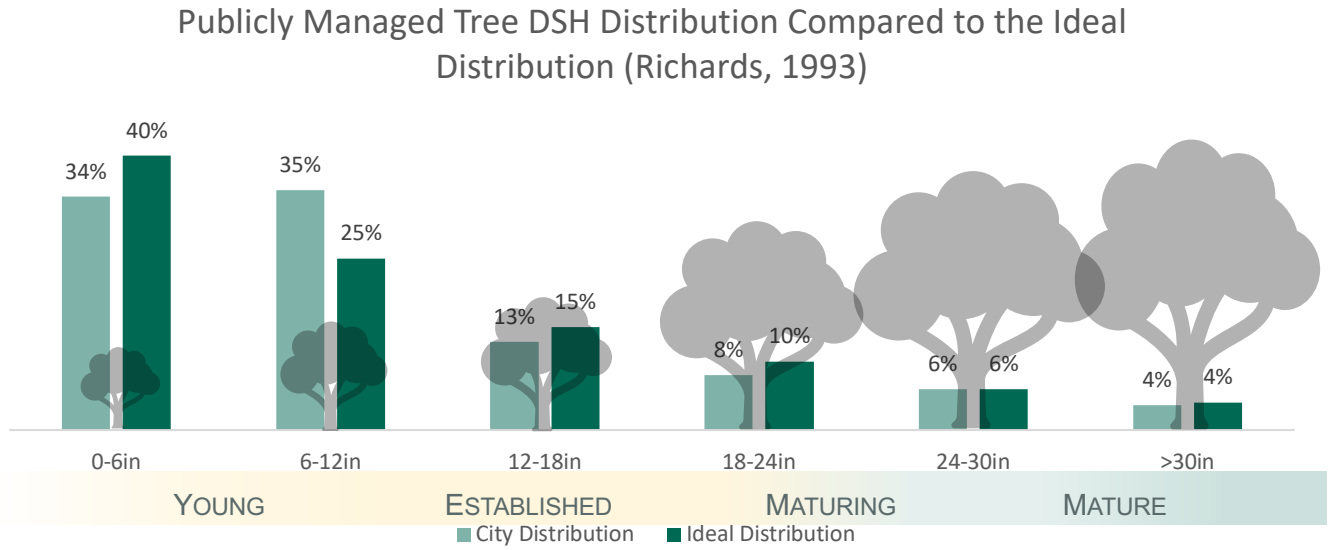


Figure 5. Comparison of size distribution of Durango's publicly managed trees to an ideal distribution.

Durango's publicly managed tree population shows a higher-than-ideal proportion of younger trees, especially in the 6-12 inch category, where the city distribution exceeds the ideal by 10 percent. This suggests an active young tree population, possibly due to recent plantings or effective tree establishment practices. However, trees in the developing stages (12-18 inches and 18-24 inches) are slightly underrepresented, with the city's figures two percent below the ideal in each category. This may reflect challenges in supporting trees through this critical development phase, potentially due to gaps in survival rates as trees mature or in watering practices that cease once a tree is perceived as established. Mature trees match the ideal distribution, suggesting a stable population of mature trees, indicating a healthy presence of well-established older trees.

While the inventory of publicly managed trees shows a skew toward younger trees, it is important to note that the inventoried trees are estimated to represent only about six percent of Durango's overall community forest. Observations and experiences from the forestry team and community members suggest that the citywide community forest is aging, with many mature trees nearing the end of their lifespans and requiring increased maintenance. To achieve a more balanced age distribution, efforts should extend beyond planting new trees to include ensuring that existing trees receive the care needed to grow and thrive into maturity. Strategies might include reinforcing tree care practices, educating residents on the importance of continued watering beyond the initial establishment phase, protecting trees from development pressures, and mitigating urban stressors that impact tree health. These efforts are vital for sustaining a resilient and thriving community forest.

Condition

Tree characteristics and environmental factors affect the management needs for urban trees. An analysis of the condition can provide an indicator of how well the trees are managed and how they are performing given site-specific conditions. Understanding current and changing conditions plays an important role in planning, budgeting, and resource allocation. Tree maintenance needs are assigned for public safety reasons and by tracking these needs, managers are better able to plan and manage Durango's public trees and the citywide community forest.

The inventory of public trees was analyzed to identify potential trends in tree condition and the management recommendations to improve condition or minimize the deterioration of tree condition. Each

inventoried tree's health was evaluated by ISA Certified Arborists based on the condition of the wood and the foliage as well as the structure.

Based on the analysis, it is estimated that three out of four public trees (77 percent) are in good condition and 18 percent are in fair condition with five percent of trees in poor or dead condition. The dead trees or trees noted for removal should be addressed and planned for immediately. Trees classified as "Fair" or "Poor" should be examined to determine the necessary mitigation or plant health care, if any to improve their condition.

Relative Performance Index

In addition to understanding the overall condition of Durango's inventoried public trees to inform management strategies, an analysis of performance was also conducted for the ten most prevalent tree species using the Relative Performance Index approach. Relative Performance Index (RPI) is a comparison of a species' condition rating of "Good" and the tree population's "Good" rating. Using the percent of Good trees for a given species divided by the tree population percentage of Good trees gives a value of equal to 1, less than 1, or greater than 1. A value equal to 1 means the species is as healthy as the overall tree population. A value less than 1 means the species is not as healthy as the overall tree population. A value greater than 1 means the species is healthier than the overall tree population.

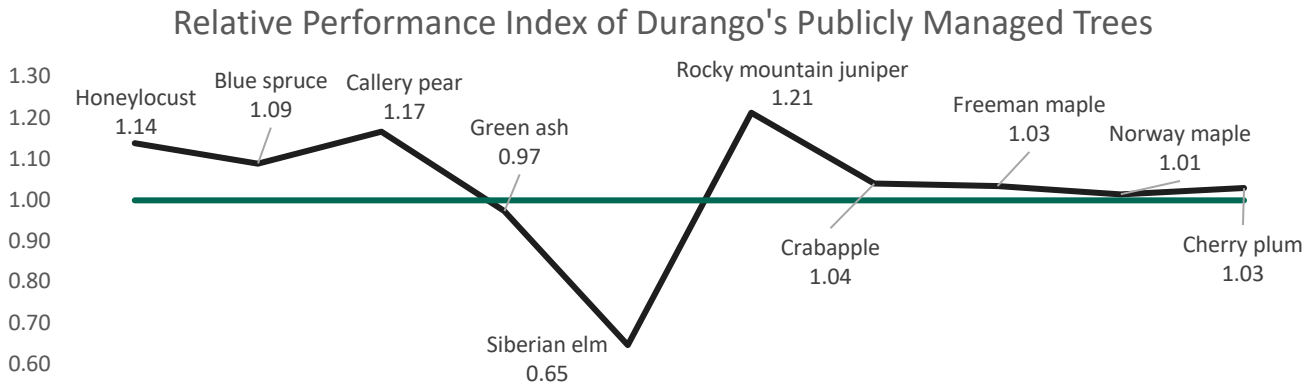


Figure 6. Relative Performance Index (RPI) of the most common public trees.

RPI answers the question of how well a species is performing in terms of health compared to the entire inventoried population. For the inventoried public trees, honeylocust, blue spruce, callery pear, rocky mountain juniper, crabapple, Freeman maple, Norway maple, and cherry plum are performing better than the overall public tree population.

Green ash is performing close to the average, with an RPI slightly below 1.0. At this time, the emerald ash borer is not known to be present in Durango, so the decline could be attributed to other factors such as environmental stress, age and maintenance issues, or other pests and diseases. Increased monitoring and maintenance of green ash is recommended, as stressed trees will be more susceptible to EAB should it be introduced.

Siberian elms are underperforming with a Relative Performance Index (RPI) of 0.65, the lowest among evaluated species. Known for brittle branches, wetwood, slime flux, and high susceptibility to pests, Siberian elm is not recommended for urban plantings. It is also classified as a List C Species on the state's noxious weed list.

Observations and Defects

Tree observations (or defects) were recorded for the publicly managed inventoried trees to further describe a tree's health, structure, or location when more detail was needed. A total of 20 unique observation options were included in the inventory. In the tree inventory, 4,298 trees (35 percent of the total inventory) had one or more defects, and a total of 9,221 observations were recorded.

Of the 9,221 observations recorded, codominant stems was the most frequent defect recorded (18 percent or 2,159 trees). Fifteen percent or 1,777 trees were noted as having deadwood, 11 percent or 1,288 trees were observed to have crown dieback, and 10 percent or 1,239 trees were observed to have poor structure.

Of the total observations made, 72 percent are preventable or mendable meaning the defects or concerns observed are primarily human-caused. For example, poor structure can be prevented or limited with proper young tree pruning. Implementing best practices and standards would prevent or reduce the number of improperly pruned trees, and poor root systems can be prevented by choosing quality tree nursery stock, proper planting, and amending soils. Trees with hardscape damage observations could have been prevented by choosing the appropriate species for the site and ensuring adequate root space. Lastly, adequate mulch rings, increased growing space, better managed grates, and awareness would reduce the count of mechanical damage observations. The data also shows the impacts of deferred maintenance. About 61 percent of the observations recorded could be addressed or prevented with proactive pruning (codominant stems, crown dieback, poor structure, improperly pruned, girdling roots, included bark, and vines).

Maintenance Needs

Of the 12,110 publicly managed trees, 94 percent require routine pruning with 7,360 (61 percent) large trees and 4,031 (33 percent) small trees. Of the Priority 1 and Priority 2 trees, only two percent (257 trees) are recommended for removal. A programmed pruning cycle, addressing all public trees within a 3- to 7-year span, is recommended to maintain tree health and public safety efficiently. Studies indicate this cycle is optimal, as pruning more frequently has minimal additional benefits, while less frequent pruning leads to deferred maintenance issues.

Newly planted trees should be structurally pruned within five years of planting. Young tree training pruning, recommended every three years due to their faster growth, improves tree form and structure. This involves pruning from the ground using pole pruners or pruning shears, aiming to establish one dominant leader for most species. Species-specific pruning develops strong structural architecture to ensure future growth results in healthy, sound trees. During this cycle, additional maintenance tasks like mulching, watering, and removing stakes may be performed.

Young trees, generally less than six inches DBH, often require correction of potential structural problems such as codominant leaders, multiple limbs at the same point, crossing limbs, or damaged limbs. Addressing these issues early prevents increased risk and liability as the tree matures.

Summary of Tree Inventory Analysis

Understanding the extent, structure, condition, characteristics, and maintenance needs of public trees enables Durango's Community Forestry Team to effectively budget, plan, and address maintenance and planting needs in a sustainable, safe, and equitable manner. The City undertook a comprehensive tree inventory as part of this Plan, and it is essential that the City maintain the data and routinely update the inventory.

Challenges such as pests and diseases, invasive plant species, climate resiliency, among other threats to the community forest can be addressed for private trees by providing resources, education, training, and other support to property owners to support growing a sustainable and resilient community forest.

As stated at the beginning of this section, additional summaries and analyses of the sample public and private tree inventories from 2024 are provided in a separate report, Tree Inventory Summary Report October 2024.

Tree Canopy Cover

Overview

An assessment of tree canopy cover citywide provides the data and information to develop goals and strategies relating to tree planting, preservation, tree equity, and risk management along with the data to

support community outreach and education. These urban tree canopy assessments, referred to as “UTC Assessments” or “Tree Canopy Assessments” and “TCA’s” provide the information for long-term planning and serve as a measurement of change and progress over time.

This information can be utilized with other city planning efforts for sustainability, equity, human health, climate resiliency, stormwater management, water quality, wildlife preservation and enhancement, air quality improvements, and development guidelines among many others.

UTC assessments provide a baseline understanding of existing canopy cover across the entire city. In addition, these assessments provide an analysis of possible planting areas citywide and by various planning boundaries. This assessment for Durango represents an important step in better understanding current conditions of the community forest, its tree canopy distribution and value, and the importance of community forestry during planning processes. This baseline assessment should be utilized in measuring progress resulting from implementing this Plan.

Urban Tree Canopy (UTC) Findings

This Urban Tree Canopy (UTC) Assessment of Durango, Colorado was conducted by PlanIT Geo, Inc. for the City of Durango. Using high-resolution aerial imagery from the USDA's National Agriculture Imagery Program (NAIP), PlanIT Geo used remote sensing and GIS techniques to map and measure land cover types across several geographic scales. This assessment identifies existing UTC and Possible Planting Areas (PPA) to assist in developing a community forest management plan.

2024 UTC Findings – Citywide

The City of Durango is 17.2 square miles in size. Tree canopy covers 4.3 square miles of this area (24%) according to 2024 imagery

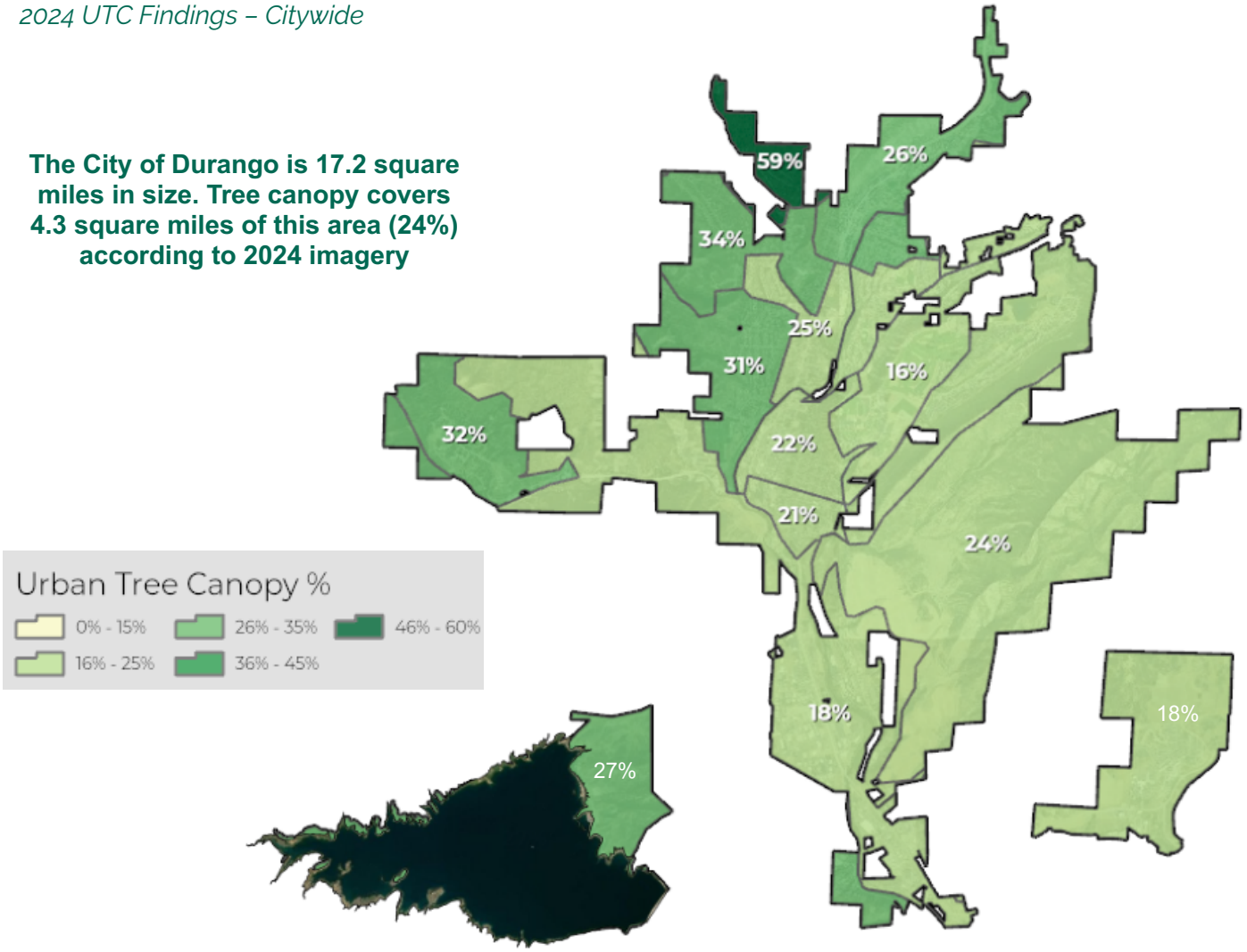


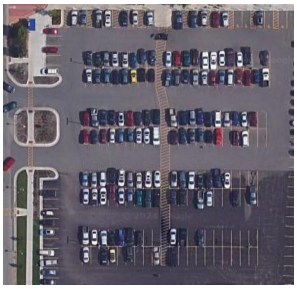
Figure 7. Map displaying the tree canopy by census block group in Durango, CO mapped from 2024 imagery.

Urban Tree Canopy

"Tree"

Non-Canopy Vegetation

"Field"



Impervious

"Urban"

Waterbodies

"Water"

Figure 8. Examples of the land cover classes analyzed as part of the tree canopy study.

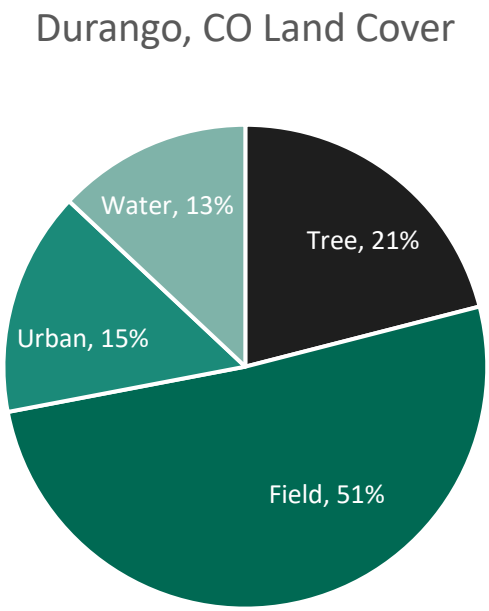


Figure 9. Citywide land cover statistics based on Durango's total area.

The 2024 Urban Tree Canopy (UTC) assessment classified Durango's land cover by various types, including tree canopy, field, urban areas, and water. Based on the city's total area of 12,815 acres, the assessment initially found that 21 percent of the city's area is covered by tree canopy, 34 percent is classified as field, 15 percent is urban, and 13 percent is water.

However, following industry standards for urban tree canopy assessments, water (totaling 1,631 acres) is excluded from the calculations. Removing water from the total land area provides a more accurate representation of land cover types that could be actively managed or improved. Once the 1,631 acres of water are removed from the calculation, the total land area considered becomes 11,184 acres, and the tree canopy percentage increases to 24 percent.

This adjusted 24 percent canopy coverage represents approximately 2,739 acres or 4.3 square miles of tree canopy when viewed from above. By adjusting the assessment to focus only on land areas that could potentially support canopy, the percentages for the other land covers (field and urban) are also recalculated, reflecting this change.

Of the 11,184 land acres of Durango, 59 percent is classified as “field” meaning it is land cover that is either grass, turf, low-lying shrubs, or bare soil. These areas may be potential future opportunities for tree plantings.

Land Cover Class	Percentage of Durango’s Land Area
Field	**59%**
Tree	**24%**
Urban	**17%**

Table 2. Land cover classes based on the City of Durango's total land area.

Seventeen percent of the area that is classified as “urban” means these areas are either buildings, road surfaces, parking lots, sidewalks, or other paved and impervious surfaces. Certain impervious areas such as parking lots and sidewalks could potentially be new opportunities for tree planting. While it may be more difficult and costly to plant trees in these areas, the benefits of the trees once established may be far greater due to the reduction of impervious surfaces that contribute to stormwater runoff, urban heat islands, and reduced air quality.

Communities frequently use this data to establish tree canopy goals and achieve a shared vision for the community forest. When canopy data is available, goals are set based on a comparison of existing and potential tree canopy coverage with a focus on equitable distribution. According to a national analysis by U.S. Forest Service researchers, a 40-60 percent urban tree canopy is achievable in forested communities. Realistic baseline targets are lower in grassland cities (20 percent) and arid and semi-arid cities (15 percent). However, higher percentages are attainable through greater investment and prioritization (Leahy, 2017). It is important to note that urban tree canopy percentage is just one of many criteria to consider. Age and species diversity, condition of trees, and equitable distribution are equally important (Leahy, 2017).

Durango is located at the intersection of the Sedimentary Mid-Elevation Forest and Semiarid Benchlands and Canyonlands ecoregions, where annual precipitation ranges from 10 to 25 inches. Despite its arid climate, Durango boasts a 24 percent tree canopy—well above the 15 percent recommended for arid and semi-arid cities. This reflects the city’s strong commitment to community forest management and the prioritization of green infrastructure, delivering significant environmental benefits to the community.

2024 UTC Findings –– Land Ownership Type

Tree canopy cover and potential planting areas were analyzed using land ownership categories from the City's parcel maps: City-owned properties, private land, and the Right-of-Way (ROW). While ROW areas are technically city-owned, they were categorized separately to highlight the distinction between canopy contributions from street trees and those in parks and around city facilities. The analysis showed that 47 percent of Durango's canopy is on city-owned properties (41 percent on city properties and six percent in ROW areas), while 53 percent is on privately owned parcels.

Open Space	Canopy Coverage
Dalla Mountain Park	62%
Sacred Waters	43%
Birkett and Animas Mountain	42%
Overend	39%
Horse Gulch	32%

Table 3. Canopy coverage for the top five open space areas with the highest UTC in Durango.

The consulting team conducted further analysis to evaluate the canopy coverage within Durango's vast open spaces and natural areas. While these areas comprise 24.5% of the city's total land area, they contribute 34.7% to the overall urban canopy. This underscores the critical need to monitor and manage the trees within these spaces and emphasizes the importance of fostering stronger collaboration with the Open Space team to enhance the health and resilience of Durango's community forest.

Tree Canopy Equity

Tree canopy is often not distributed equitably across city landscapes and ownership types. The American Forests organization created the Tree Equity Score (TES, www.treeequityscore.org) tool to measure tree equity across 150,000 U.S. neighborhoods and 486 municipalities in urban areas. Each community’s

TES indicates whether there are enough trees for everyone to experience the health, economic, and climate benefits that trees provide.

The scores are based on how much tree canopy and surface temperature align with income, employment, race, age, and health factors. A 0- to-100-point system makes it easy to understand how a community is doing. With the knowledge the score provides, Durango's community leaders, tree advocates, and residents alike can address climate change and public health through the lens of social equity, attract new resources, factor the scores into technical decisions, guide implementation of the 2024 Community Forest Management Plan, and track progress toward achieving tree equity.

A score of 100 represents tree equity. Based on a 2024 analysis, Durango's overall tree equity score is 99 out of 100. Based on the nationwide dataset for 197,505 U.S. Census-defined urban areas, the average score is 85 (as of 2024).

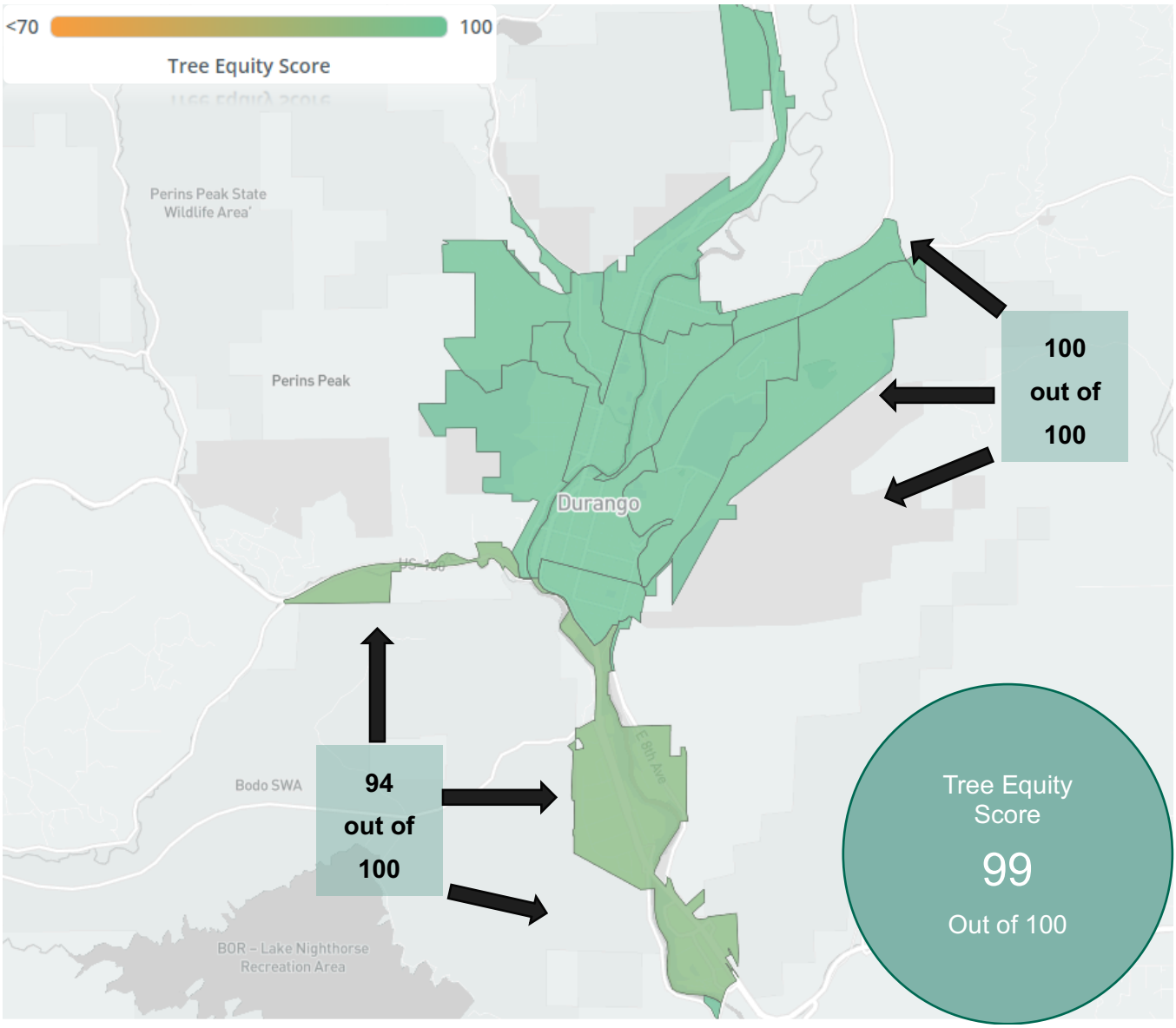


Figure 10. Map showing the Tree Equity Score for Census Block Groups in Durango, CO. Source: American Forest's Tree Equity Score Tool.

The map displaying Tree Equity Scores for each of the 15 U.S. Census Block Groups (CBGs) within the City of Durango offers crucial insights into community forestry efforts, highlighting an overall achievement in tree equity with fourteen CBGs scoring a perfect 100. This indicates that most areas are benefiting

from sufficient tree canopy. The presence of only one CBG in the 90-99 score range presents a unique opportunity for the City. While the City can focus on maintaining its existing canopy, equitable distribution of trees could be improved by addressing limitations in the 50/50 Cost Share Program, which allows residents to opt out of having trees in City-owned ROWs. Moving forward, expanding canopy coverage in these areas may require a more direct approach to planting in ROWs. As Durango expands its urban canopy, strategic prioritization of new plantings will be crucial to ensure equitable distribution and prevent any CBG from lagging in canopy coverage.

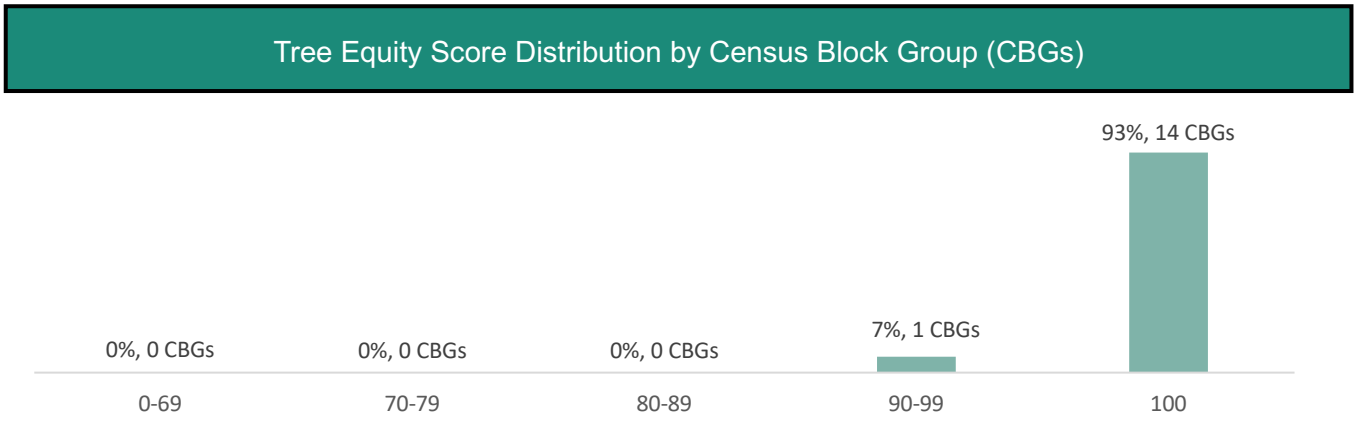


Figure 11. Count and percent of Census Block Groups by Tree Equity Score ranges. Source: American Forests' Tree Equity Score Tool.

Compared to other cities in the state, Durango's Tree Equity Score of 99 is above the average of 77 for 10 Colorado cities assessed as part of the study (see figure below) and above the national average of 85 as of 2024.

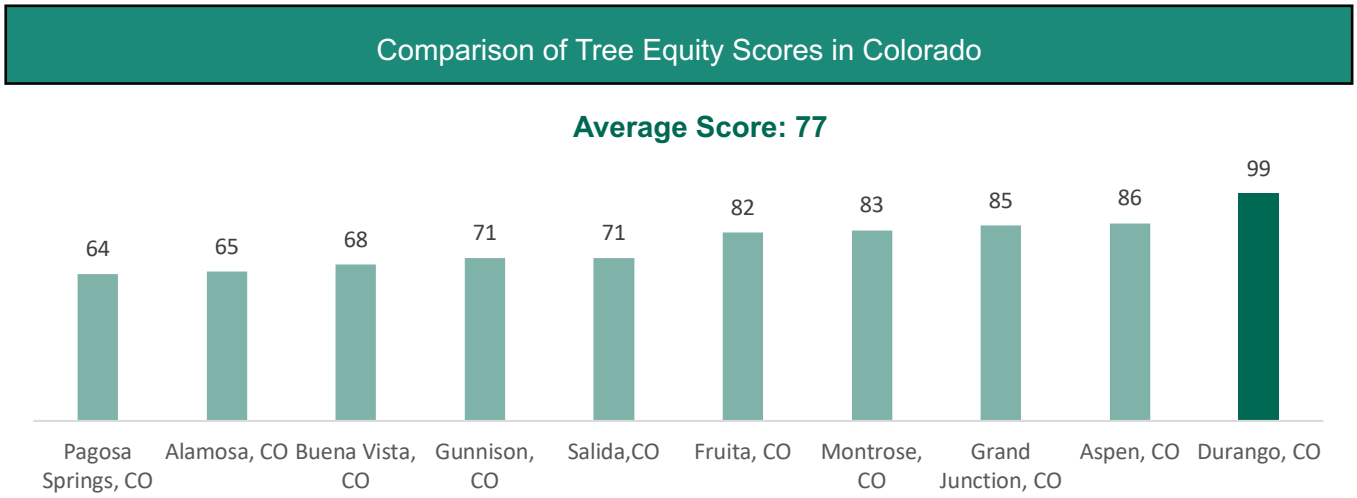


Figure 12. Comparison of Tree Equity Scores for select Colorado cities based on a 2024 study. Source: American Forests' Tree Equity Score Tool.

The Tree Equity Score tool utilized data from EarthDefine and found the canopy cover percentage to be 29% though this Plan uses the 24% determined by the City provided data from 2024.

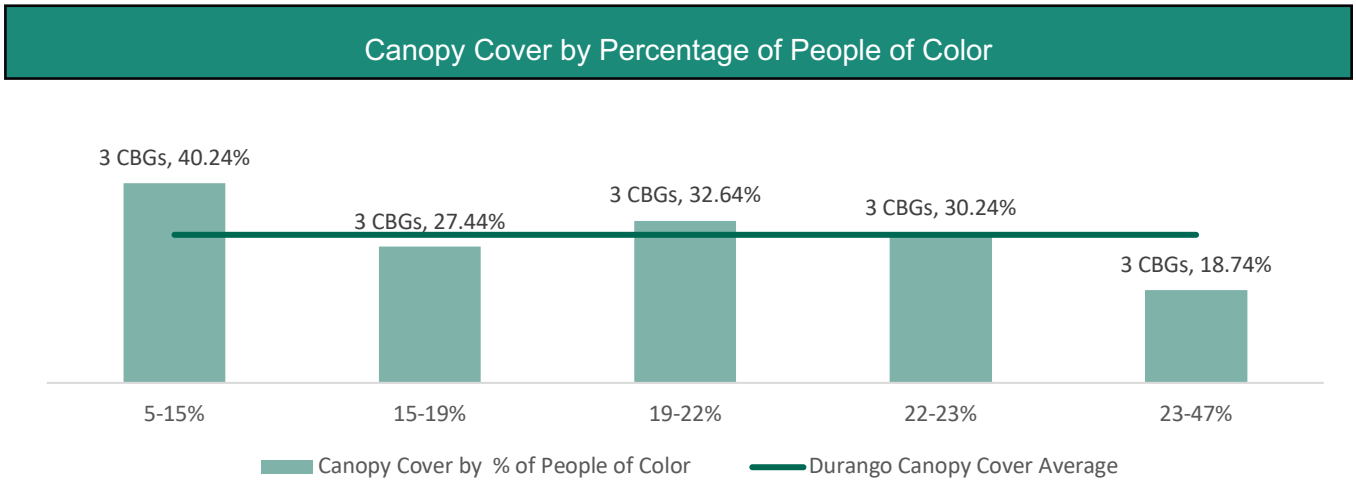


Figure 13. Canopy cover (%) and count of Census Block Groups by ranges of people of color. Source: American Forests' Tree Equity Score Tool.

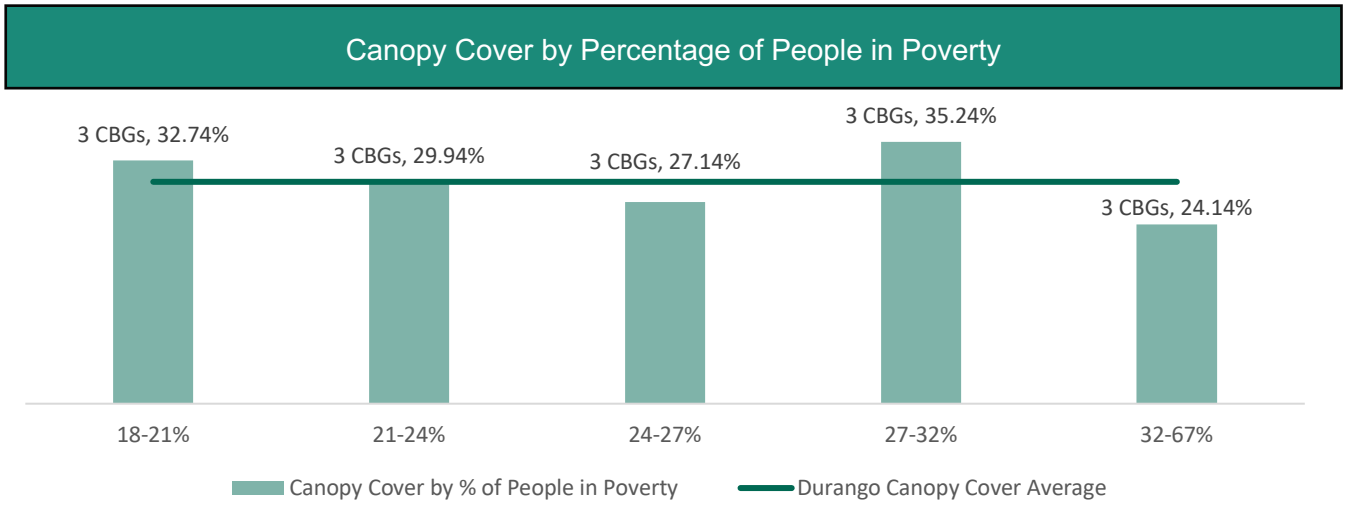


Figure 14. Canopy cover (%) and count of Census Block Groups by ranges of people in poverty. Source: American Forests' Tree Equity Score Tool.

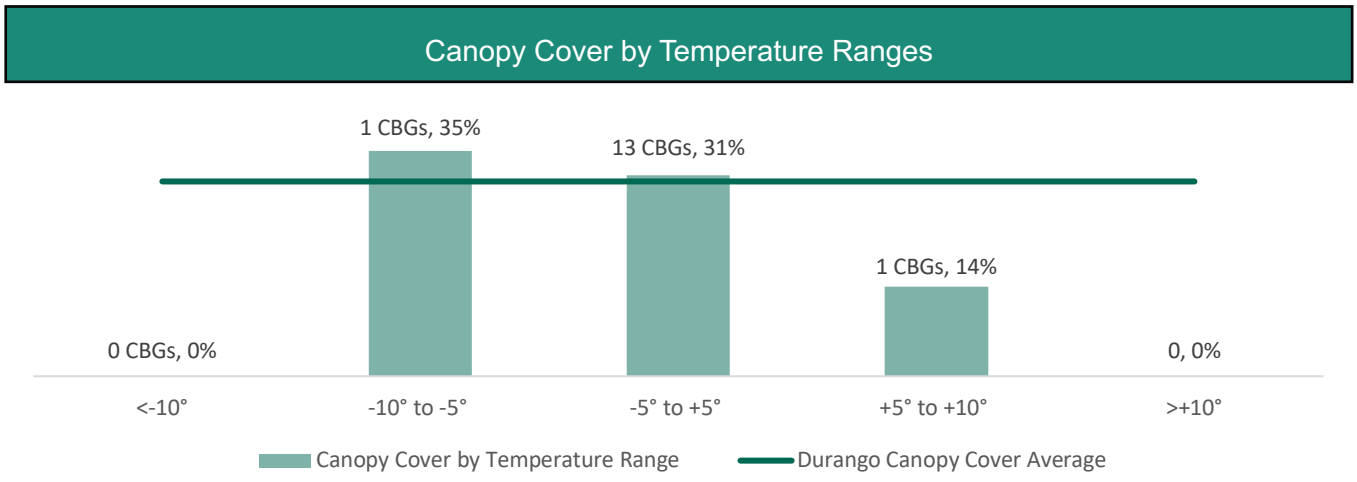


Figure 15. Canopy cover (%) and count of Census Block Groups by temperature ranges in degrees Fahrenheit. Source: American Forests' Tree Equity Score Tool.

The summaries on the previous page provide insights into the distribution of canopy cover across 15 CBGs and sociodemographic data, including the proportion of people of color, people in poverty, and changes in temperature by CBG. Canopy cover tends to decrease as the percentage of people of color in the population increases. Block groups with 5-15% people of color have a higher-than-average canopy cover, while those with over 15% people of color predominantly have less canopy cover than the average. Similarly, areas with a lower percentage of people in poverty exhibit higher canopy coverage, while the lowest canopy cover is seen in block groups where the poverty rate exceeds 32%. CBGs with less than the average canopy coverage experience greater temperature variations and an increase in the urban heat island effect.

As previously stated, the Tree Equity Score tool utilized data from EarthDefine and found the canopy cover percentage to be 29%. However, this Plan uses the 24% determined by City-provided data from 2024. These charts underscore the importance of equitable distribution of community forestry efforts, as there appears to be a correlation between lower canopy coverage and higher percentages of marginalized populations, as well as warmer temperature ranges. This data should be utilized in prioritizing public and private tree plantings to address inequities and low canopy cover. Targeted interventions are particularly necessary in heat-vulnerable and underserved communities to ensure equitable access to the benefits of a robust community forest..

Current Tree Management in Durango

The City of Durango has a long history with managing and maintaining the community forest, and has policies and programs that are used to manage the City's community forest. Durango has been recognized as Tree City USA for 44 years, ranking alongside other cities like Canon City, Greeley, Pueblo, and Longmont, the fourth longest running designation in Colorado. The City has received Tree City USA Growth Award recognition for 32 years, the longest in Colorado. The Growth Award recognizes major milestones and annual activities in five categories that combine to build sustainable community forestry programs over the long term. Durango remains committed to its 134-year legacy of community forestry.

Programs for Managing Durango's Trees

Summary of Programs and Services

The City of Durango Parks and Recreation Department oversees the management of the community forest, with the Arborist Supervisor playing a pivotal role in this process. The Arborist Supervisor is tasked with reviewing and approving new trees and vegetation planted on city property. This includes ensuring all development proposals that require landscaping meet the stipulated guidelines before approval. Additionally, the Parks and Recreation Department is responsible for the stewardship and maintenance of all city-owned land in Durango. The Arborist Supervisor, along with other city staff, works collaboratively to ensure that the community forest meets national and state standards required to maintain the Tree City USA designation from the National Arbor Day Foundation. The City of Durango Tree Inventory, which

includes street trees and those in city parks, is updated and maintained by the Forestry Team. The Arborist is also responsible for identifying future planting sites to promote the health of the community forest on city-owned lands. It's important to note that adverse impacts on trees can often be minimized or avoided if tree professionals are consulted before any damage occurs.

The Arborist Supervisor works closely with all city departments to adjust activities that could negatively affect city-maintained trees. Departments must notify the Forestry Team of any proposed construction that may require the removal or injury of a street tree or interfere with the street tree plan. For effective tree preservation, collaboration and communication among city departments, agencies, utility companies, and the community forest program are essential when operations may impact trees.

The Forestry team, responsible for trees on public lands such as parks, medians, rights-of-way, city facilities, and cemeteries, includes four full-time employees: an Arborist Supervisor, an Arborist, a Senior Technician, and a Technician. However, the division has faced staffing challenges with hiring and retention. The team is equipped with a 2018 Freightliner bucket truck, 2017 Vermeer stump grinder, 2012 Bandit chipper, and various tools like chainsaws, pole saws, pruners, and safety equipment. While city staff handle much of the pruning, tree removals, and tree plantings, contractors are also utilized to manage the volume of work. These contractors are overseen by the Arborist Supervisor, who ensures that all work, including that of the Forestry Team, adheres to ISA (International Society of Arboriculture) standards.

Staffing Levels for Community Forest Management

Many cities struggle to maintain adequate staffing and resource allocation. Available resources may cover short-term needs while neglecting important initiatives necessary to sustain long-term community forest management. Determining and maintaining optimal staffing levels is critical to a program's efficiency. Optimal staffing depends on several factors including the number of public trees, how authority and responsibility is defined in the municipal code, internal and external expectations, customer service (i.e., the public), operations, and existing programs. Understaffed programs typically contend with excess overtime, morale issues, absenteeism, employee burnout, and difficulty with relief coverage and training requirements.

Using the Hauer and Peterson Study as a benchmark offers valuable insights into Durango's staffing levels compared to similarly sized communities. This study surveyed urban forestry programs across various U.S. regions and population classes, with participation from 670 communities. Key focus areas of the study included community and staff profiles, funding, tree management policy and planning, volunteer and partnership involvement, contracting tree care activities, tree populations, operations, and assistance programs.

For municipalities with populations between 10,000 and 25,000, the study found an average of 25,819 public trees. In comparison, Durango manages a total of 12,110 public trees. Additionally, Durango manages 3,028 trees per full-time employee, while the benchmark average was 5,967 trees per employee. With four full-time forestry staff, Durango falls within the expected staffing range of three to five employees for communities of its size.

While Durango's staffing levels align with similar municipalities, this does not confirm they are adequate for effective community forest management. Optimal staffing requires aligning workforce capacity with the community forest's specific needs, which vary by local conditions (Hauer, et al., 2014). The survey lacks critical data, including hiring trends, tree age and condition, community forest composition, and regional differences like climate, resource availability, and community priorities. Without this information, the survey offers a limited perspective, underscoring the need for a more detailed, localized analysis to guide staffing decisions and resource planning. Staffing is discussed more in Staffing and Resources for an Aging Community Forest and Increased Demand

The City of Durango's commitments to public health and safety, combating climate change, and addressing inequities translates into a growing demand for both long-term initiatives, and the staff to operate them. The growing community forest will require increased staffing levels to achieve and maintain

community forest goals. To assess growth and demand, the Community Forestry Team should develop annual work plans and reports (as applicable) based on key performance indicators provided with this Plan.

Public Tree Maintenance and Planting

The Arborist Supervisor utilizes a daily calendar to track the forestry team's activities. Pruning tasks are categorized into Clearance, Visibility, Form, and Maintenance Pruning, allowing the team to prioritize and address the specific needs of the community forest. All pruning efforts are compiled annually under the category of "Total Trees Pruned," providing a comprehensive overview of the City's maintenance efforts. The Arborist Supervisor employs the Tree Risk Assessment Qualification (TRAQ) to assess and prioritize tree work based on risk, ensuring that resources are efficiently allocated to address the most urgent needs. However, the Forestry Team's focus on addressing residents' requests within rights-of-way (ROW) areas often limits their capacity to maintain trees in parks and other municipal spaces. Despite ongoing public education efforts on proper tree maintenance procedures and legal requirements, delays in service sometimes lead residents to take unauthorized actions, such as pruning or removing trees in the ROW.

Most tree work performed in Durango is the result of service requests, with the City Forestry Team handling an estimated of 312 requests per year. Approximately 80-90% of these requests come from residents, while the remainder are initiated by the Forestry Team and other City department staff.

Forestry is actively addressing tree risks by removing large co-dominant trees when they are determined to pose a hazard and pruning co-dominant stems on smaller trees to mitigate future risks. The City recognizes the need for a structured routine maintenance program to transition from a primarily reactive approach to a more preventive maintenance strategy and plans to integrate more structured priorities into its Community Forest Management Plan (CFMP).

Year	Trees Removed	Trees Planted	Trees Pruned
2017	62	122	717
2018	59	153	433
2019	74	166	298
2020	123	368	483
2021	180	142	589
2022	236	144	897
2023	166	81	771

Table 4. Durango's tree pruning, planting, and removal work from 2017 to 2023.

Tree removals in the City of Durango are organized into two categories: Inventory and Non-Inventory Tree Removals, with detailed records maintained for each category. Every removal is carefully evaluated to ensure thorough consideration. Non-Inventory Tree Removals primarily target invasive species, including Siberian elm, Russian olive, tamarisk, and tree-of-heaven.

The City is actively involved in tree planting and removal across public lands, balancing the needs of the community with the health of the community forest. Due to the aging community forest, drier climate, and increasing wind events, the frequency of tree removals has increased, currently outpacing plantings at nearly a 2:1 ratio. Despite this challenge, the City maintains a diligent record of tree plantings, including those carried out through Capital Improvement Program (CIP) projects and requirements for new developments. These planting efforts contribute to the City's Tree City USA (TCUSA) and Growth Award status, reinforcing the City's commitment to maintaining and expanding its urban canopy.

The City of Durango recognizes the recent challenges in maintaining a balance between tree removals and plantings, a situation driven by multiple factors. The community forest is experiencing the compounded effects of an aging tree population, increasing pest pressures, a hotter and drier climate and increased winds, all of which have led to more frequent tree failures. Additionally, while residents are encouraged to water new trees, proper watering practices are not always followed, leading to higher-than-desired mortality rates for newly planted trees. In response, Durango has set strategic goals to enhance planting rates and improve mitigation efforts. Recent inventory efforts identified 751 potential planting sites and 165 additional locations needing stump removal to prepare for new plantings. By addressing these factors holistically, Durango aims to foster a resilient community forest for future generations.

Public Engagement

Arbor Day is an annual event where individuals of all ages, including children, are educated about the importance of trees and community forests. Recently, the event has expanded to include tree planting activities with school children and Scouts, furthering their understanding of tree benefits. The Durango Forestry Team frequently interacts with the public, offering education on various tree-related topics and directing them to university resources for further information on tree care, diseases, or pests.

The Arborist Supervisor is often contacted by residents seeking advice on both public and private trees, dedicating significant time to addressing these inquiries and educating the public on proper tree care and the management of our community forest. This includes raising awareness about invasive species such as Russian Olive, Tamarisk (Salt Cedar), and Siberian Elm, and explaining the necessity of their removal due to their detrimental impacts. The City also provides a Tree and Shrub guide that provides recommended species for planting and those that are prohibited or should be avoided to further inform and guide residents. The City of Durango Forestry Team collaborates with the Mountain Studies Institute to remove invasive Russian Olive trees from Bodo Industrial Park.

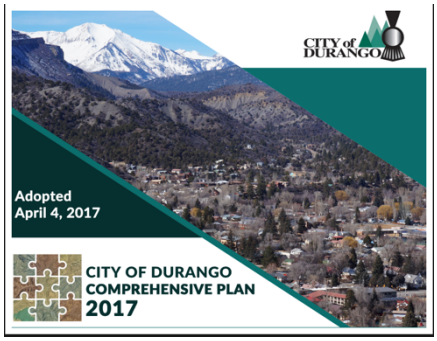
Urban and community forestry has become a key environmental issue in public awareness. A CFMP that highlights the benefits of Durango's community forest, along with the city's green infrastructure like parks, riparian corridors, and open spaces, will help guide efforts to maintain the city's quality of life. Durango residents continue to value the community forest, as reflected by its robust canopy and large tree inventory. With the guidance of this CFMP, residents can actively participate in the growth and management of the community forest.

Tree-related Plans and Regulations in Durango

Evaluating the alignment of existing policies and plans in Durango with community forest management elements ensures a strong connection among the programs that manage the community forest and the projects and initiatives that support them. Proper alignment of community forestry program recommendations reduces the risk of wasting resources and enables success of key projects that support community forestry goals. Plans cannot live in isolation, therefore, cross-examining various plans and documents brings to light any projects or initiatives that are a misplacement of resources and time. Tree regulations in the city provide the foundation from which tree canopy cover can be preserved, protected, and expanded while aligning with industry standards and best practices. Regulations for trees on private property are the primary tools for community foresters to guide private landowners and developers in sustainable practices.

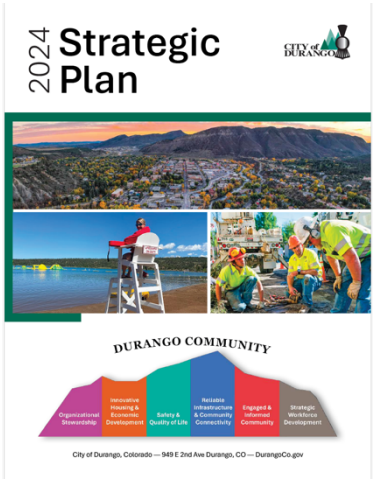
Several documents and resources were reviewed and indexed as part of the information discovery process to develop the Community Forest Management Plan. These documents included:

Relevant Plans and Studies

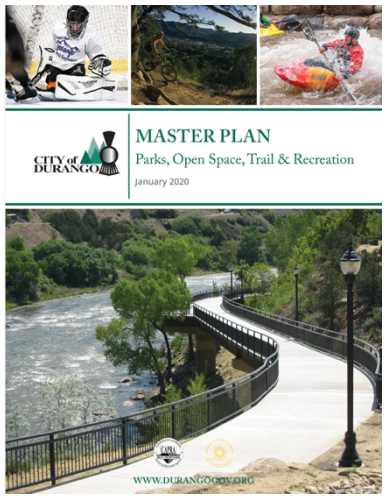


City of Durango 2040 Comprehensive Plan (2017): The Plan embodies Durango's shared community vision for the future, guiding decision-makers through updated goals and prioritized implementation strategies. It considers key regional and national trends, such as an aging population, the unsustainability of single-occupancy vehicle transportation, economic pressures reducing socio-economic diversity, the crucial role of environmental quality in economic vitality and quality of life, and the need for regional solutions to challenges like transportation, housing, air quality, and coordinated growth.

City of Durango Sustainability Plan (2022): The Sustainability Plan builds upon years of prior sustainability-oriented efforts and planning, providing an opportunity to reinforce established commitments and reevaluate our community's approach to sustainability planning and implementation. The City of Durango is committed to and greatly benefits from the protection and conservation of its natural resources. Additionally, the city acknowledges its role in contributing to state, national, and global commitments to mitigate climate change. Sustainability is central to the purpose and mission of the City of Durango.



City of Durango 2024 Strategic Plan: The 2024 Strategic Plan sets long-term goals that guide the city's budgeting and operations. It aims to enhance service delivery, support housing and economic growth, ensure public safety, and improve the quality of life for residents. A key component is sustainability, with a focus on preserving natural resources and reducing environmental impact. The plan also emphasizes community engagement, infrastructure resilience, and workforce development.



City of Durango Parks, Open Space, Trail & Recreation Master Plan (2020): The 2020 Parks, Open Space, Trails, and Recreation Master Plan outlines a community-driven vision with ambitious goals, including the expansion of Lake Nighthorse Recreation Area, development plans for Durango Mesa Park, increasing trail connectivity, and exploring the expansion of the Recreation Center. Additionally, the adopted 2010 Parks, Open Space, Trails, and Recreation Master Plan identified the initiative to establish and implement a healthy forest management plan and develop and manage an community forest, while also setting forth the community mission and vision for parks, open space, trails, and recreation in Durango.

City of Durango Community Forest Management Plan (2012): The 2012 Community Forest Management Plan (CFMP) sets out a vision for managing the community forest, emphasizing its significant role in enhancing the quality of life in Durango. The mission of the CFMP is to promote effective management of trees and natural systems, while enhancing green infrastructure in an environmentally sustainable manner. This Plan, implemented in 2012 was last updated in 2019. The new CFMP builds upon this foundation by creating updated goals and strategies, further enhancing and updating the plan to address current and future challenges and opportunities for Durango's community forest.

The relevant plans and studies are summarized above to demonstrate the parallels among community forestry and other planning efforts in the City. The Community Forest Management Plan's long-term framework aims to complement goals and policies within these city plans and studies that pertain to trees in Durango. This evaluation of existing resources serves to reduce conflicting priorities in the City.

Tree Ordinances and Standards in Durango

- Chapter 26. – Vegetation, Article III: Trees and Shrubbery: The City of Durango has established comprehensive ordinances under Chapter 26, Vegetation, to manage and protect its community forest. These ordinances cover various aspects, including the care, removal, and regulation of trees and shrubs on public properties.
    - Purpose and Enforcement: The ordinances aim to enhance the city's beauty through controlled and planned tree care programs. Voluntary compliance is preferred, but enforcement measures are in place to ensure City beautification goals are met.
    - Tree and Shrub Care: The Director of Parks and Recreation is authorized to inspect trees and shrubs for diseases and pests. Property owners are notified in writing to remove infested plant materials, with the City intervening if compliance is not met. Trees causing obstructions or hazards must be trimmed by property owners to specified clearances. Trees whose roots cause sidewalk damage are considered nuisances and must be addressed by the property owner. Trees in the rights-of-way (ROW) are under management of the City, but it is the responsibility of the adjacent property owner to water trees in the ROW.
    - Licensing and Regulations: Individuals or businesses engaged in tree trimming or removal must obtain a license from the Finance Director. Applications require detailed information on experience and references, and a practical test may be administered. Licensed tree trimmers must display their name and address on all vehicles and equipment, and maintain insurance coverage to protect against personal injury and property damage.
    - Permits and Planting Regulations: Permits are required for any pruning, trimming, planting, or removal of trees and shrubs on public property. Applications must specify the work and location, with permits typically expiring within 60 days. The city maintains exclusive control over planting trees and shrubs on public streets and rights-of-way, ensuring that plantings follow ISA (International Society of Arboriculture) and industry standards and that visibility and safety standards are met at intersections and other public areas. Importantly, while city departments such as Public Works are exempt from permit requirements for tree-related activities, they are still required to notify the Arborist

Supervisor if proposed construction could impact trees. This ensures that the Arborist Supervisor is informed of potential impacts on the community forest, allowing for proactive preservation and management strategies.

- Chapter 27 – Land Use and Development Code: The City Land Use and Development Code specifies the quantity of replacement trees, if trees have to be removed due to the lack of viable alternatives. And requires a two year guarantee for all new street tree plantings.
    - Tree Replacement: Trees are to be replaced according to the following criteria; replacement tree quantities are based on installation of either 3" caliper OR 2" caliper replacement trees.

Diameter of Trees to be Removed	Number of Required 3" Caliper Replacements	Number of Required 2" Caliper Replacements
Group of 5 or more trees 3" diameter and above	1	2
Less than 10"	1	2
10 – 15"	2	3
15 – 20"	3	4
20" and above	5	6

- Irrigation and Landscape Standards: The 2012 Irrigation and Landscape Standards for Durango referenced as part of the Land Use and Development Code outlines several key regulations and standards related to tree planting, maintenance, and removal within the city.
    - Tree Planting Requirements: Trees must be planted in locations that ensure their long-term survival, considering visibility, community benefit, and likelihood of private participation. Specific spacing and placement standards must be adhered to, such as maintaining a minimum distance from driveways, buildings, and utilities. For example, no tree shall be planted closer than 15 feet from any driveway or alley. Tree plantings in sidewalks require a minimum cutout area of 15 square feet, and certain height restrictions apply for trees under overhead power lines.
    - Tree Removal Criteria: Trees may only be removed if they meet specific criteria such as being infected with an uncontrollable disease, posing an extreme public nuisance, being a severe safety hazard, or having very low aesthetic value. The policy encourages replacing removed trees with new plantings, ensuring the continued presence of the community forest.
    - Maintenance Standards: Public deciduous trees must be pruned on a rotational basis of not more than seven years to promote health and safety. Trees must be maintained to prevent them from becoming a hazard or obstructing public spaces. This includes maintaining clearance heights above streets and sidewalks.
    - Forestry Standards: Defines responsibilities for street trees and park trees, which fall under the jurisdiction of the Department of Parks and Recreation – Forestry Team. Detailed standards for pruning and removal are provided to ensure that all work is performed to promote tree health and safety.
    - Public Tree Planting and Maintenance: New developments and public projects must include provisions for tree planting as part of the landscape planning process. A warranty period for newly planted trees ensures they are maintained in healthy condition for at least two growing seasons.

A cursory review of existing tree-related ordinances and standards in Durango was conducted based on industry tools and resources, comparisons of findings from benchmarking research, input gathered from internal stakeholders, and a cross-examination of regulations compared to industry standards and best practices. This integrated approach aims to balance goals for tree canopy cover, development, and other priorities in the future.

Stakeholder Feedback on Current Conditions

Internal and external engagement is critical to the success of a community forest management plan. By engaging with Durango's staff, residents, businesses, and other stakeholders, community forestry team are given a better understanding of the needs and concerns of the community. Engagement was conducted throughout the development of Durango's Community Forest Management Plan. The feedback and input gathered was used to shape a plan that is representative of the needs of all stakeholders in the city. The engagement conducted throughout the development of the Plan also helps to build support for Durango's community forest and to ensure the Plan is implemented effectively.

Internal Stakeholder Feedback

An online survey was conducted using Google Forms to gather input from select City staff on workflows, priorities, strengths, challenges, and desired outcomes related to the Community Forest Management Plan (CFMP). The survey, open from February to March 2024, was sent via email to 34 staff members, with 14 responses received. Respondents included staff from Parks and Recreation (three staff), Community Development (four staff), IT/GIS, Transportation (one staff), Human Resources, the City Manager's Office, and Sustainability (six staff).

The survey revealed collective aspirations and concerns about the city's trees, highlighting key areas of involvement such as ordinance and code enforcement, development permitting and land use regulations, city planning, human health and environmental justice, recreation and community engagement, and advocacy for public tree and park improvements.

Issues & Concerns: Primary concerns include staffing issues or lack of qualified personnel, infrastructure conflicts with utilities, and unclear or unenforced ordinances. Infrastructure conflicts with ADA access or mobility/visibility are also significant concerns.

Priorities & Viewpoints: Improving processes and regulations around tree protection and development is a high priority. There is also a strong interest in implementing best practices, increasing the number of trees in the city, and maintaining resources for their upkeep, with an ongoing emphasis on prioritizing tree programs.

Desired Strategies & Programs: Respondents desire resources for improved tree maintenance, species selection, and planting site selection. Other key strategies include public education tools, FAQs, and improved internal workflows and communications.

Desired Outcomes: Key outcomes include better coordination of staff and resources across departments, adequate staffing levels, a comprehensive tree maintenance plan, and resources for best planting and pruning practices. Additionally, there is a strong desire for public education programs and inventory data for public trees.

Goals for the Community Forest: Important goals include better maintenance of the community forest through policies and practices that address threats like climate change, maximizing tree benefits and services, increasing species diversity, and maintaining current levels of canopy cover.

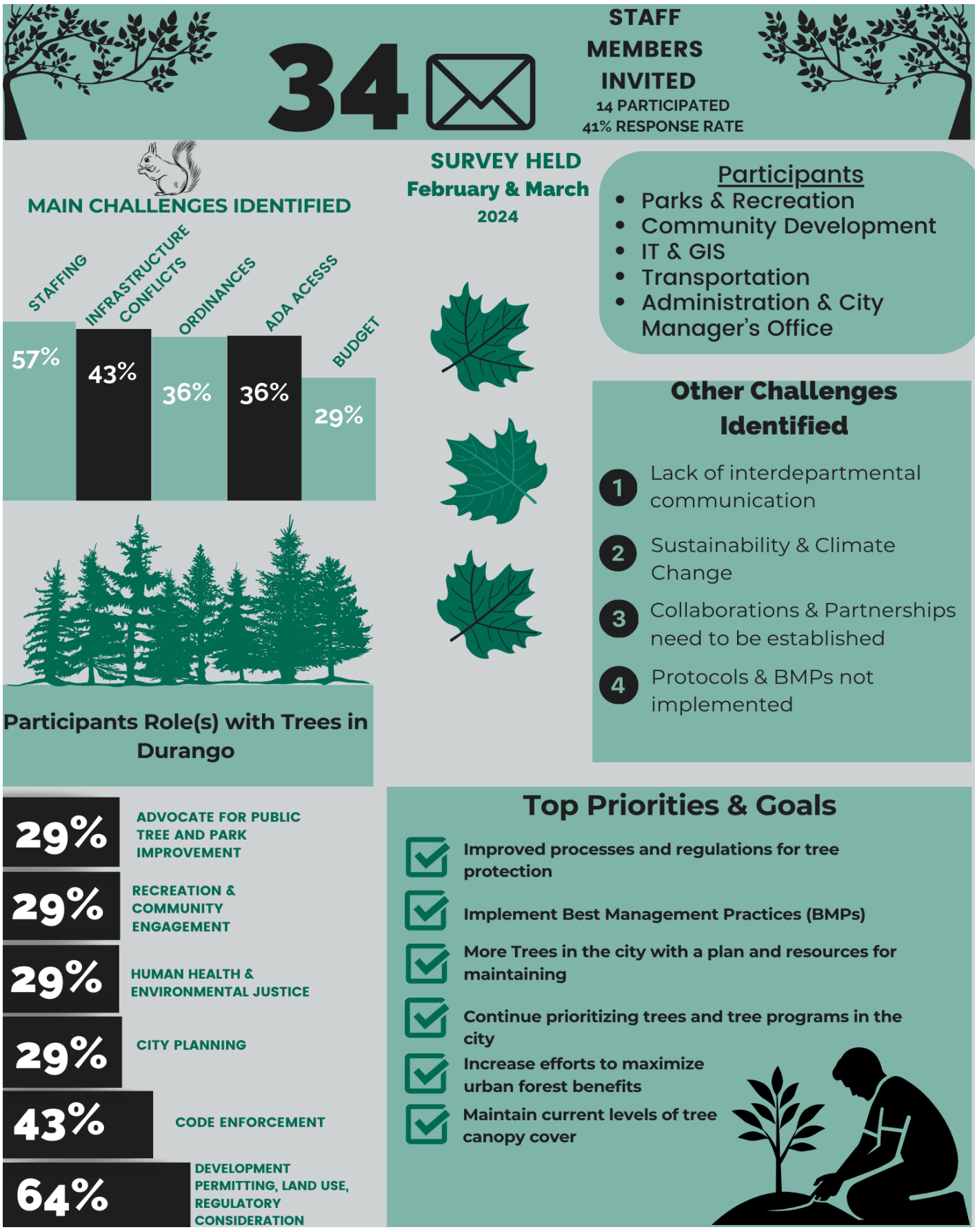


Figure 16. Infographic summary of feedback received from internal stakeholders.

External Stakeholder and Community Feedback

In April and May 2024, two hybrid public engagement meetings were held with Durango residents. These interactive sessions featured survey questions designed to explore how trees impact residents' lives, gather feedback on canopy goals and priority planting areas, and identify where the City should focus its resources. Conducted in English with translation services available, the meetings aimed to highlight the most valued benefits and services provided by trees within the community. Attendance was modest, with approximately six community members participating.

In September and October 2024, two focus group meetings brought together a diverse group of engaged community members, including master gardeners, private nursery representatives, and tree care professionals. The group first met in person and later virtually to build and refine the goals, strategies, and actions for this CFMP. These discussions were guided by insights from previous internal and external engagement activities. Attendance for these meetings ranged between ten and twelve participants, fostering a collaborative environment for shaping the plan's direction.

The feedback gathered represents valuable public perception and insights from highly engaged community members, reflecting their priorities and concerns. While this input may not always fully align with inventory data or broader community sentiment, it provides an important perspective for shaping the CFMP. Regular engagement activities like these are essential for monitoring trends in public opinion and ensuring the CFMP remains adaptable and responsive as priorities evolve. The following priorities, goals, and locations provide a foundation for understanding public interests while balancing feasibility and alignment with city resources and planning efforts.

Key Priorities of the CFMP: The community prioritizes setting and achieving tree coverage goals to reduce heat, improve ecosystems, and expand the canopy in underserved areas. They also emphasize allocating additional resources for tree maintenance and proactively maintaining trees to ensure health and safety by managing pests and diseases. Planting trees that can withstand droughts and high temperatures is important, as is incorporating more tree plantings and preservation efforts into development projects. Additionally, many participants expressed keen interest in the removal and sustainable replacement of invasive species such as Siberian elm, Russian olive, and Tamarisk.

Key Goals of the CFMP: The community emphasizes the importance of establishing and maintaining optimal tree cover levels to maximize ecosystem benefits and promoting the conservation of existing tree resources. They support maintaining healthy trees through good cultural practices, establishing age and species diversity, and fostering community support for the forestry program. Additionally, encouraging good tree management on privately-owned properties is a key priority.

Key Locations for Future Plantings: The community prioritizes tree planting in parks, greenways, and other public spaces, as well as on school campuses. They also support initiatives that encourage tree planting on private residential and commercial properties while emphasizing the importance of planting and maintaining street trees.

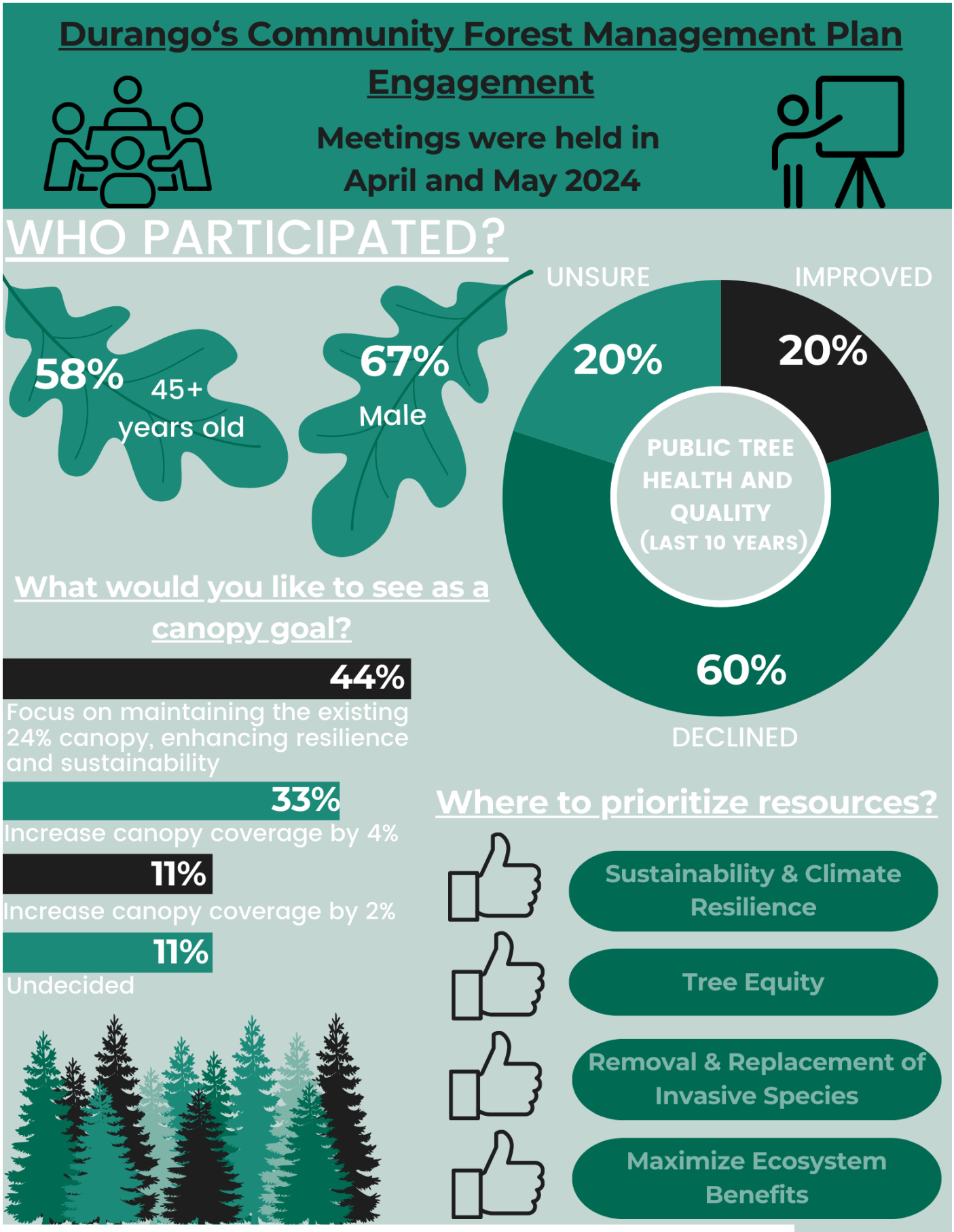


Figure 17. Infographic summary of feedback received from external stakeholders.

Development and Land Use Changes

Durango's trees face multiple challenges from various sources. The community forest is vulnerable to the pressures of urbanization, extreme weather, and pests and diseases. As urbanization and population growth continue, secondary effects, such as an increase in vehicles, further impact tree management activities.

Durango's approach to growth and sustainability, as outlined in its Sustainability, Strategic, and Comprehensive Plans, recognizes the dynamic nature of the region. This region is no stranger to change, having experienced significant population increases, demographic shifts, economic fluctuations, and the impacts of natural disasters. La Plata County's population has seen substantial growth, increasing from 19,225 in 1960 to 43,941 in 2000, marking a 129% rise. During the same period, the City of Durango experienced a population increase from 10,530 to 13,922, a growth of 32%. Between 2000 and 2015, the County's population further expanded to 54,688 and Durango's to 18,006, representing growth rates of 24% and 30% respectively.

Although this Plan primarily focuses on the City of Durango and its planning area, the rapid population growth in La Plata County significantly impacts the City's facilities, services, employment, and traffic. According to the 2040 Trip: The Durango/La Plata County Regional Transportation Study, the County's population is projected to grow at an annual rate of approximately 1.8%. By 2040, the County's population is expected to reach 85,770, a 56% increase from the 2015 population of 54,688. This projected growth underscores the need for strategic planning and resource management to accommodate the increasing demands on the City's infrastructure and services.

Addressing this growth sustainably calls for meticulous regional and local planning. This planning must ensure a balance between the escalating demands for resources—natural, transportation, housing, and public services—and the ability to provide them without compromising the area's ecological integrity or quality of life for its residents.

Altered Soils

Urban trees must often survive in compacted soils that have been altered for the built environment. A good growing medium for trees contains approximately 50% pore space (which allows the root system access to the air and water it needs to survive) and a layer of organic matter. In contrast, construction soils typically have less than 25% pore space and organic matter combined.

Competition for Space

Conflicts with hardscapes and utilities often occur when trees are not provided adequate space for root and canopy growth. In rights-of-way, trees may compete for space with signs and streetlights, underground utilities, and overhead electric and telephone lines. As trees outgrow available space, their roots can raise sidewalks as they search for water, air, and growing space. The resulting sidewalk repairs may require removal of the tree or application of alternative sidewalk solutions. The City has regulations and best management practices (BMPs) for addressing these situations.

The prevention of future conflicts requires streetscape design that considers the mature size of trees being planted as well as available technologies that allow trees to thrive in this environment. Examples of these unique designs are provided in the graphic below:

Figure 18. Examples of potential streetscape design solutions for preventing or mitigating tree and infrastructure conflicts.

Climate Change Impacts

As climate change intensifies, trees in Durango will face accelerating declines, with stressed trees weakening faster and even healthy ones encountering increased threats. Extreme heat and drought will decrease water availability, shift plant hardiness zones, and drive the spread of invasive species, which further strain water resources by absorbing moisture that should support more beneficial species. Stronger storms may lead to additional downed trees and limbs, while pests and diseases will thrive in stress weakened trees.

Without a proactive, long-term investment in tree health, Durango risks escalating costs from declining trees, affecting public safety, budgets, road access, and utility services. The environmental, public health, and aesthetic impacts will also be considerable. Currently, 77% of Durango's public trees are in good condition, but nearly a quarter are vulnerable, and climate change exacerbates the risks to the city's urban canopy.

Urban Tree Pests and Diseases

Tree pests and diseases are a natural part of any ecosystem, but their impact is significantly worsened by climate change. In an urban environment, these pests and diseases add to the existing stresses faced by trees. Stressed trees are more vulnerable to insects and diseases, though some pests and diseases can also affect healthy trees. Climate change creates conditions that favor the spread of pests and diseases, and prolonged drought further stresses trees, making them more susceptible to these threats.

Figure 19. Emerald ash borer (EAB). Source: Colorado State Forest Service.

Emerald Ash Borer (EAB) poses a severe threat to North American ash trees, including the white and green ash varieties found in Durango. These species are particularly vulnerable to EAB as they lack any natural resistance. If left untreated, EAB can eradicate every unprotected ash tree within a decade, turning affected trees into safety hazards. This invasive pest attacks both healthy and compromised ash trees, leading to extensive die-off and requiring costly removal efforts. Since its detection in Boulder in 2013, EAB has spread throughout Colorado, impacting many communities. Although no cases of EAB have been documented in Durango as of 2024, the city has implemented proactive measures, including a ban on new ash tree plantings, to mitigate the potential threat. EAB continues to be a significant concern for communities across the state.

Figure 20. Ips beetle. Source: Colorado State Forest Service.

Ips beetle, known as the "engraver beetle," poses a significant threat to spruce and pine trees in Colorado, including lodgepole, ponderosa, and Austrian pines. These beetles burrow into the bark, disrupt the tree's vital systems and often kill stressed trees. High beetle populations and infestations can also occur in healthy trees due to drought and the accumulation of cut wood from fire mitigation efforts. The piñon ips beetle *(Ips confusus*) is particularly concerning due to its ability to adapt to environmental changes, switch host trees, and spread rapidly. Outbreaks typically begin in the wildland-urban interface or open spaces and then move into municipalities, targeting stressed pine or spruce trees. Austrian and piñon pines often suffer the most, but all pine and spruce trees are susceptible under the right conditions.

Figure 21. Elm leaf beetle. Source: University of Colorado.

Elm Leaf Beetle, a European pest in North America for over 150 years, primarily targets elm trees, causing significant defoliation that can weaken and eventually kill them. These beetles often take refuge indoors during winter months. Biological control measures, particularly the introduction of the parasitic wasp *Oomyzus gallerucae*, have been used to control beetle populations effectively since their initial introduction in the early 20th century, with re-introductions in the 1970s. Although these biological controls have been largely successful, periodic increases in beetle populations still necessitate ongoing management. Forestry efforts in Colorado prioritize maintaining the health of elms, while gradually removing others, such as Siberian elm, to support a more resilient community forest.

Figure 22. Asexual fruiting bodies in bark cracks of thyronectria canker. Source: Colorado State University.

Thyronectria canker, caused by the fungus *Pleonectria austroamericana*, primarily affects honeylocust trees and poses a significant threat to community forests where these trees are common. Honeylocust trees are often used as street trees due to their adaptability to harsh urban environments. Although Thyronectria canker poses little threat to healthy trees, it can cause significant damage to stressed trees, especially under extended drought conditions and variable winter temperatures. The disease, which was first identified in Massachusetts in the early 1930s, is now widely distributed throughout the United States.

Figure 23. Adult mountain pine beetle, Source: Colorado State Forest Service.

Mountain Pine Beetle (MPB) is a bark beetle native to the forests of western North America, primarily attacking pine species in the Western United States, including ponderosa, lodgepole, and limber pines. All pine species in Colorado, including ornamental pines, are susceptible during population explosions. Climate change, with warmer winters and prolonged droughts, weakens trees and lowers beetle larvae winter mortality, while also increasing beetle reproduction from once to twice a year. This surge in MPB populations poses a significant threat to forests, potentially killing entire stands of trees if not managed.

Figure 24. Spruce Beetle, Source: Colorado State Forest Service.

Spruce Beetle (SB), a native bark beetle, infests Engelmann spruce and Colorado blue spruce, causing significant tree mortality. While the spruce beetle has been Colorado's most devastating forest pest for nearly a decade, its activity has declined across the state as of 2023. This decline is attributed to depletion of suitable host trees in previously heavily infested areas. However, it continues to invade and decimate new stands, particularly high-elevation Engelmann spruce forests. Spruce beetles (*Dendroctonus rufipennis*) primarily infest subalpine Engelmann spruce but also target Colorado blue spruce.

Figure 25. Honeylocust borer. Source: Utah State University.

Honeylocust borer (*Agrilus difficilis*) is a wood-boring beetle that targets honeylocust trees, often affecting those with trunk wounds, cankers, or severe stress. Infestations can cause severe defoliation and reduced growth. In some cases, the damage becomes so extensive that tree removal is necessary. Native to the United States and widely distributed east of the Rocky Mountains, its spread is linked to the widespread planting of honeylocust trees and the transport of their wood. In Durango, the pest has been found in honeylocust trees weakened by environmental stresses and thyronectria canker.

Invasive Tree Species

Invasive plant species are characterized by their resilience, adaptability, rapid reproduction, and absence of natural predators. These traits enable them to outcompete native plants, consume more water than native species, and pose a serious threat to natural ecosystems. Climate change often benefits these invasive species, expanding their range and enabling colonization of new areas. In Durango, four species (Russian olive, Siberian elm, tree-of-heaven, and tamarisk) are listed as invasive by the Colorado Weed Management Association. Although these species have minimal representation in the inventory, they likely have a larger presence in Durango's community forest, significantly impacting the ecosystem in multiple negative ways.

Figure 26. Siberian elm (*Ulmus pumila*). Source: Colorado Department of Agriculture.

The Siberian elm (*Ulmus pumila*), native to Asia, is known for its rapid growth and ability to thrive in disturbed environments such as stream banks, pastures, and roadsides. This deciduous tree can reach 70 feet in height and features a crown of upward-growing branches, heart-shaped leaves, and wind-pollinated flowers that produce samaras, or wing-like fruits. Its high germination rate and need for sunlight allow it to quickly colonize new areas but limit its spread to mature forests.

In Colorado, management of this invasive species is guided by the Colorado Noxious Weed Act where it is classified as a "List C" species. Land managers are encouraged to maintain healthy native plant communities, address disturbed areas promptly, and remove young Siberian elms before they mature. Mechanical removal is effective for young seedlings, especially when the soil is moist, while mature trees may require herbicide treatments post-cutting to prevent sprouting. Effective management of the Siberian elm involves education, prevention, monitoring, and a combination of cultural, mechanical, and chemical control methods to protect local ecosystems.

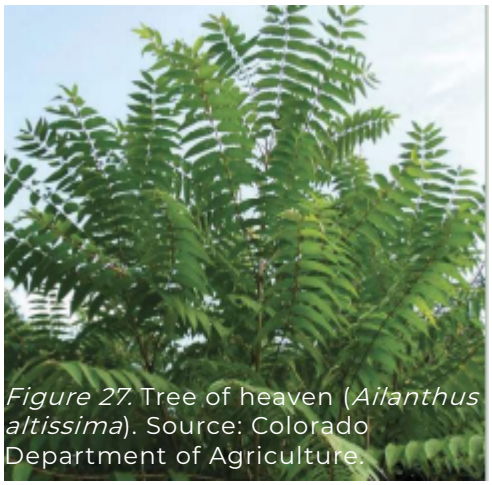


Figure 27. Tree of heaven (*Ailanthus altissima*). Source: Colorado Department of Agriculture.

The tree-of-heaven (*Ailanthus altissima*), originating from China, is a fast-growing deciduous tree, reaching heights of 70 feet and crown widths of 80 feet. This species prospers in harsh conditions, such as poor, compacted soils, and withstands heat, drought, and pollution, posing problems in both urban and natural landscapes. It reproduces through wind-dispersed seeds and asexually via root sprouts, with female trees producing numerous seeds. The leaves are dark green with a unique lanceolate shape and teeth at the base; the bark is light brown to pale gray and fissured.

Tree-of-heaven, which aggressively invades roadsides, railways, and woodland edges, can damage infrastructure with its roots, has brittle wood, and competes with native species. It also facilitates the

spread of the spotted lanternfly. In Colorado, where it is classified as a "List C" species in the Noxious Weed Act, effective control includes preventing establishment, promoting healthy native vegetation, and removing seedlings. While no biocontrol agent is yet approved, methods like hand-pulling seedlings, cutting older trees followed by herbicide treatment, and cultural management strategies are recommended for its control.

Figure 28. Russian olive (Elaeagnus angustifolia). Source: Colorado Department of Agriculture.

The Russian olive (*Elaeagnus angustifolia*) is a perennial tree native to Europe and Asia, notable for its rapid reproduction via seeds or root suckers. Originally introduced for use as a windbreak, it is now regarded as environmentally harmful. Russian olive aggressively outcompetes native plants, disrupts natural plant succession and nutrient cycling, and depletes water resources. Although its fruits are consumed by birds, they provide limited nutritional value, and areas with native vegetation generally support a richer diversity of bird species. Russian olive is also allelopathic, releasing toxins into the soil to inhibit the growth of nearby native plants, thereby further destabilizing local ecosystems. This tree or shrub produces olive-shaped fruits that transition from silvery to yellow-red when mature, and it can reach up to 30 feet in height. It features branches with 1- to 2-inch thorns and narrow leaves with silvery-white undersides and light green upper surfaces. Fragrant yellow flowers bloom in clusters from May to June, with fruits maturing from September to November. A mature tree can consume up to 75 gallons of water per day, leaving the soil drier and saltier.

Figure 29. Saltcedar or tamarisk (Tamarix Spp.). Source: Colorado Department of Agriculture.

Management of Russian olive in Colorado, guided by the Colorado Noxious Weed Act, includes maintaining healthy native plant communities, addressing disturbed areas promptly, and removing young Russian olive plants before they mature. Mechanical removal is effective for young seedlings, particularly when soil is moist, while mature trees may require herbicide treatments post-cutting to prevent regrowth. Effective management involves prevention, monitoring, and combining cultural, mechanical, and chemical control methods to protect local ecosystems.

Tamarisk or saltcedar (*Tamarix spp*.), is an invasive tree native to Europe and Asia, introduced to North America in the early 1800s for ornamental purposes and erosion control. It typically grows 5 to 20 feet tall, with small, scale-like bluish-green leaves and clusters of tiny pink to white flowers. Saltcedar thrives in disturbed habitats with poor soil conditions and drought, spreading rapidly and outcompeting native plants. Each tree can consume up to 20 gallons of water per day, exacerbating water shortages.

Identifiable by its reddish-brown bark on saplings and its scaly leaves, saltcedar increases soil salinity, making it inhospitable to native species. Effective management involves preventing its establishment through proper land management, monitoring for new infestations, and employing an integrated weed management approach that includes mechanical, biological, and chemical control methods. Removing saltcedar and replanting native species is crucial to restoring and maintaining healthy riparian and wetland ecosystems.

Urban Heat

Like many urban areas, Durango is experiencing the detrimental effects of excessive summer heat. Urban heat is a phenomenon that describes the higher air and surface temperatures in urban areas compared to surrounding rural areas. The temperature difference is largely due to the prevalence of buildings, roads, and other elements of the built environment that absorb and retain heat. Increased emissions of greenhouse gases and reduced tree canopy serve to magnify these impacts. Without strategic intervention, urban heat threatens the well-being and health of the community, particularly vulnerable populations lacking the cooling shade of trees.

With urban heat rising, the concern of tree decline is at the forefront of planning in urban areas. To understand Durango's community forest vulnerability to urban heat, it's essential to consider the potential impacts on its trees. These impacts include:

- **Increased stress on trees:** Urban heat adds to stress trees are already facing from factors such as air pollution, drought, and pests, making it more difficult for trees to survive and thrive.
- **Reduced tree growth:** Urban heat can slow down tree growth, which can lead to a decline in the overall health of the community forest.
- **Increased tree mortality:** Urban heat increases the risk of tree loss, which can lead to gaps in the community forest.
- **Reduced air quality:** Urban heat tends to hold pollutants in the atmosphere, worsening air quality. This places an additional burden on trees' air purifying capabilities while also having a negative impact on human health and the environment.
- **Changes in plant communities:** Urban heat can lead to changes in the composition of plant communities, as some species are more tolerant of heat than others. This can lead to a loss of biodiversity in the community forest.

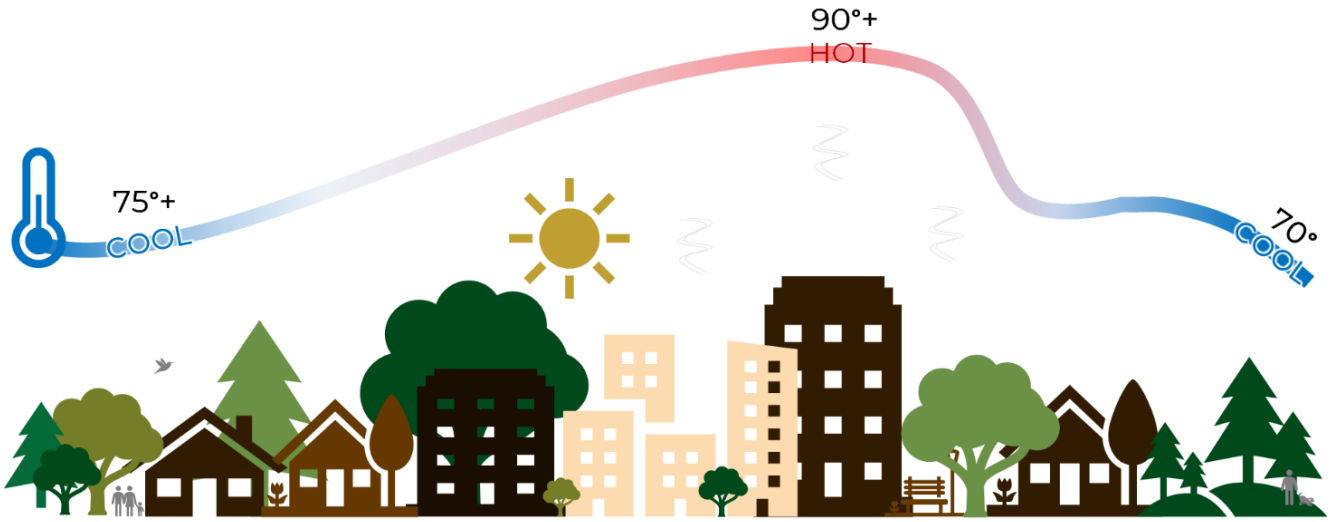


Figure 30. Illustration of the temperature difference in urban areas due to the urban heat island effect.

Changes in Plant Communities

Durango, located in the greater Southwest region of the United States, is poised to experience significant environmental changes due to climate change, including rising temperatures, more frequent droughts, and an increase in severe precipitation events. These shifts will profoundly impact Durango's community forest, affecting which tree species can survive and thrive. This situation calls for proactive and strategic planning to ensure the long-term health and sustainability of the community forest.

Climate projections indicate that Durango will shift from USDA hardiness zone 6a to zone 7b by 2040. This necessitates incorporating future climate conditions into urban planning. Collaborating with cities already experiencing similar climatic conditions can provide valuable insights for managing Durango's community forest. By selecting tree species that will be well-suited to the anticipated climate 30 to 50 years from now, community foresters and planners can ensure that today's plantings will contribute positively to the community forest of the future. This forward-thinking approach involves gradually transitioning away from species that may become less viable as the climate changes.

However, while plant hardiness zones are crucial tools for planning, they do not capture all the factors necessary for successful community forestry. When planting trees outside of their native hardiness zones, it's important to recognize that species adapted to warmer climates may struggle to establish and thrive. These trees may be vulnerable to colder temperatures that exceed their natural tolerance, leading to poor growth or even failure to survive.

Local soil conditions, water requirements, and pest susceptibility must also be considered. For example, while maples may thrive in zone 5 conditions, Colorado's soils can cause chlorosis in these trees due to iron deficiencies. Similarly, green ash, although potentially suitable for the changing climate, is vulnerable to pests like EAB. These complexities underscore the need for a holistic approach to community forestry that accounts for the diverse and interconnected elements of ecosystem management.

Durango faces increasing challenges in identifying suitable tree species as the climate continues to warm. Many of the species currently planted, have been introduced from the Eastern United States and require significant time and effort to adapt to local conditions. Compounding this issue is the limited availability of local tree nurseries, which makes sourcing and acquiring appropriate species even more difficult. To address these challenges, the City sources trees from various vendors and suppliers but often struggles to obtain nursery stock of approved species. Given Durango's location in southern Colorado, sourcing trees from New Mexico and Arizona offers a promising solution. Trees grown in hotter, drier climates are more likely to withstand the conditions Durango is projected to face over the next 30–50 years. To strengthen its efforts, the City should explore additional partnerships with nurseries in these regions to ensure a more resilient and sustainable community forest. Suitable species for Durango, based on their success in New Mexico, include chitalpa, raywood ash, and Idaho locust. As winters become warmer, additional species such as Chinese pistache and Arizona sycamore should also be considered to enhance climate adaptability and long-term resilience. When undertaking revegetation projects, the City should explore opportunities like the New Mexico State Forestry Department's seedling sale, which offers tree stock suited to hotter, drier climates.

Water Efficiency in a Changing Climate

In the American Southwest, water is a scarce and increasingly expensive resource, particularly as the region faces prolonged drought and aridification. In Durango, where summers are typically dry and hot from May through September, water costs can influence residents' willingness to properly water newly planted trees. These trees require about 5-10 gallons of water per week to establish, and even after establishment, trees need supplemental watering during periods of drought or extreme heat to reduce environmental stress. Older trees are especially vulnerable to these changes and will need occasional watering during such events.

For established trees, deep and infrequent watering is crucial to encourage deep root growth, making them more drought resistant. When roots grow deeper into the soil, trees become more resilient to dry conditions. A lack of water, however, can lead to tree canopy dieback, so monitoring smaller plants for signs of drought stress, such as leaf-scorch, can act as an early warning to water trees.

Efficient use of irrigation systems is vital for maintaining tree health. Modern drip irrigation systems are designed to minimize water waste by delivering water slowly and directly to the roots. Smart irrigation technology can further optimize water usage by adjusting schedules based on weather and soil moisture, ensuring trees receive the right amount of water.

Incorporating water-efficient and sustainable landscaping practices can help balance the needs of the community forest while conserving water. Sustainable landscapes function as mini-watersheds, retaining and filtering stormwater, reducing resource consumption, and creating habitats for wildlife. These landscapes, which use native grasses, wildflowers, and low-water-use plants, are replacing traditional turf grass in many areas, reducing water usage, green waste, and maintenance costs.

Prioritizing native and drought-tolerant plants in yards, gardens, and public spaces allows water resources to be reserved primarily for irrigating trees, even during drought or water restrictions. This approach ensures a resilient urban canopy that continues to provide essential environmental and social benefits.

A study from Santa Monica, California, compared sustainable and conventional landscaping practices, highlighting the advantages of sustainable methods. The sustainable landscape used significantly less water (6,000 gallons compared to 57,000), produced less green waste (200 pounds versus 670), and required fewer maintenance hours (15 hours compared to 80). This underscores the value of sustainable landscaping in conserving resources and supporting urban tree health.

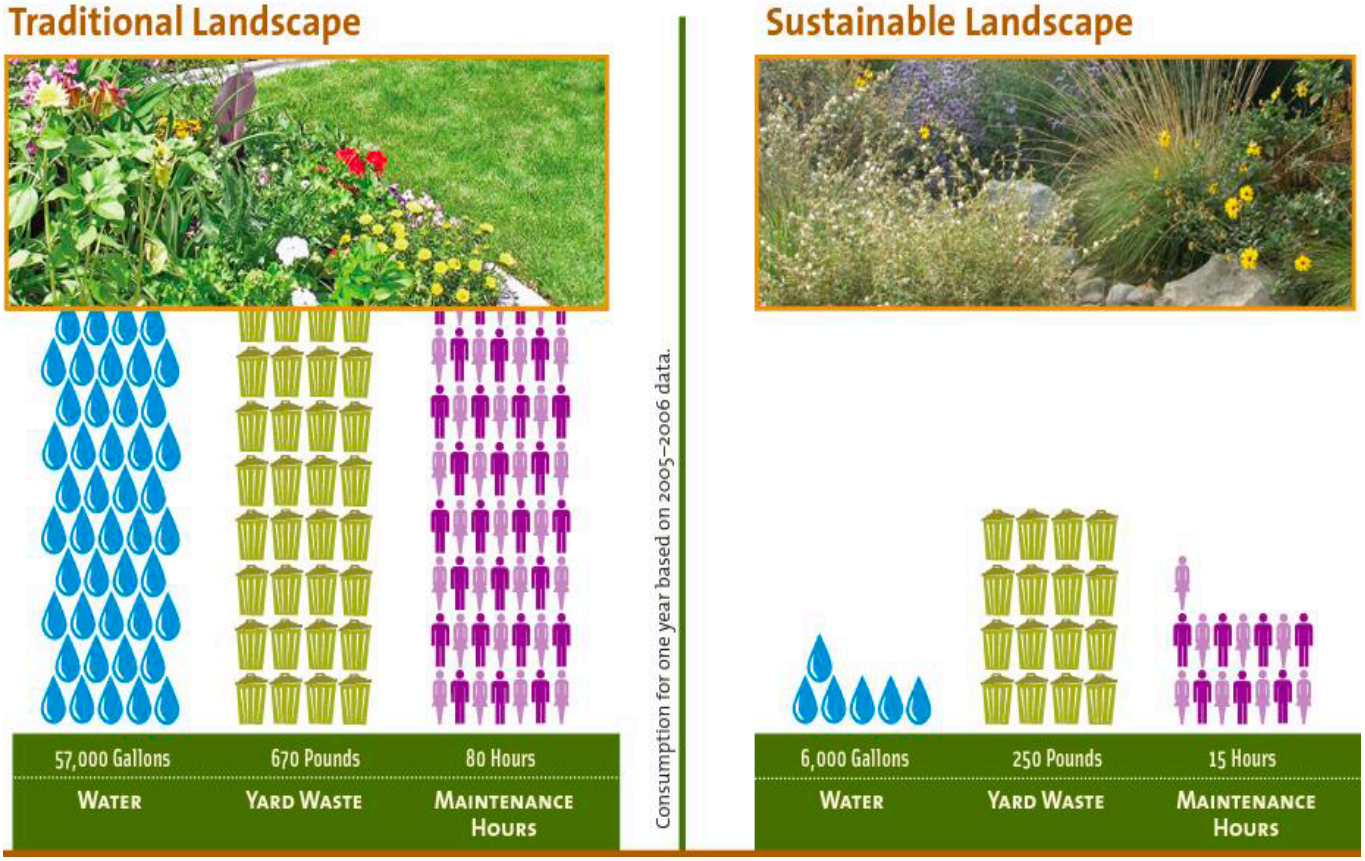


Figure 31. Comparison of traditional landscapes and sustainable landscapes. Source: The Garden Project, Santa Monica, CA.

Urban Forest Program Audit

To develop a CFMP that reflects the community of Durango, 30 local documents, plans, and resources were gathered and reviewed by applying the U.S. Forest Service's Urban Forest Sustainability and Management Audit's Discovery Matrix. This matrix includes a total of 11 urban forest categories, each containing a multitude of supporting elements. All of Durango's resources were reviewed and assessed for each of the categories and supporting elements.

Examples of the elements supporting the Management Policy and Ordinances category include (but not limited to) natural resources, tree protection, risk management, canopy goals, infrastructure conflicts, and

public health. The primary objectives of the audit are defined by the Urban Forest Audit System authors and adapted by the project team to engage the full spectrum of the organization, provide program direction to increase efficiency, conduct a gap analysis of management practices and the health of community forests, provide strategic direction to improve the health of the forest, and optimize management for environmental justice and equitable distribution of resources.

Urban Forest Audit Process

The process of analyzing the community forest involved extensive information and document gathering and research to identify policies, practices, programs, and standards pertaining to categories of community forest sustainability and management as defined by Clark et al. (1997), Kenney et al. (2011), and the Forest Service.

Each element was ranked or scored based on the consultants' evaluations in 2024 for the Community Forest Management Plan. All available documents and plans were reviewed and tallied in the audit worksheet as part of the information discovery phase. Based on the evaluation of the documents and outcomes of all planning processes (i.e., research, City staff interviews, community forest benchmarks, data analyses, and community engagement) each subcategory within the 11 categories was "ranked" using the following system:

Ranking	Description	Points
Not Practiced	Doesn't exist or is not practiced	0
In Development	In development as part of or aside from this Plan	1
Adopted Practice	Routinely practiced	2

The points were then totaled for an overall rating to provide a summary of the City's level of achieving each category of community forest management and sustainability.

This audit or "gap analysis" provides a data-driven approach to growing and shaping different aspects of the City of Durango's community forestry program. It also enables effective monitoring of Plan's strategies in that the audit categories and elements can be revisited at key intervals in the Plan implementation process to measure progress and adapt strategies accordingly. The Implementation section includes guidance and strategies for completing updates to the audit as progress is made in the City's community forestry program. It is recommended the City's Community Forestry Team complete a bi-annual audit to inform any alterations to actions and strategies.

Durango's Audit Results

According to the analysis of findings from the needs assessment, **Durango scored a 63% in terms of community forest sustainability and management** as defined by the U.S. Forest Service, partners, and planning consultants. Based on similar audits completed by the urban forestry consultants, of the 18 audits, the average score is 59%. The City of Durango scored above average when compared to other community forestry audits completed by the consultants for other communities of similar size. While commendable, this ranking is to be expected of a city that has prioritized their community forest but not yet transitioned from reactive to more proactive management practices. While all areas of community forestry require improvement, significant improvements could be made in the Professional Capacity and Training, Funding and Accounting, Inventories, Urban Forest Management Plans, and Disaster Planning categories — all of which are below the City's overall audit score of 63%.

Based on the audit of 129 subcategories (11 primary categories), Durango is achieving "Adopted Common Practice" for 64 (50 percent) of these. 35 subcategories (27 percent) are "In Development". Applying the multipliers of 2 for Adopted Practice and 1 for In Development results in a total score of 163 out of 258 possible points, or 63 percent (detailed in the following table).

Overall Audit Tools				
Category	**Description**	**Overall Rating**	**Total Possible Points**	**Overall (% Achieved)**
1	Management Policy and Ordinances	21	28	75%
2	Professional Capacity and Training	7	18	39%
3	Funding and Accounting	5	12	42%
4	Decision and Management Authority	5	8	63%
5	Inventories	13	26	50%
6	Urban Forest Management Plans	13	24	54%
7	Risk Management	10	18	67%
8	Disaster Planning	4	14	29%
9	Standards and BMPs	41	60	68%
10	Community	25	30	83%
11	Green Asset Evaluation (Observed Outcomes)	17	20	85%
Totals		**163**	**258**	**63%**

Table 5. Durango's Urban Forest Audit results 2024.

Interpreting the Urban Forest Audit Scores

The Urban Forest Audit System should serve as a baseline assessment from which progress can be measured and strategies can be adjusted using an adaptive management approach. Overall, Durango scored a 63 out of 100 based on the consultants' evaluation. The scores resulting from the evaluation are informative but should not be considered a definitive assessment or a reason for excessive action due to a currently low score or inaction due to a high score.


What Do We Want?

Vision

What does the community forest and its programs look like 10 years from now?

The vision guides direction on where Durango is headed and helps guide recommendations for the future.

Guiding Principles

What are we aspiring to achieve?

These are the aspirations for the city over the next 10 years. They are key themes for organizing the Plan and include a citywide canopy cover goal.

Goals

How do we achieve our principles and vision?

The goals are specific opportunities for the city to move toward the 10-year vision.

Strategies

What is the approach to take?

Strategies provide the general direction or method to take to achieve the goals.

Priority Actions

What is the next step?

This is the prioritized list of steps to take.

Vision

"Our vision is to create a climate-resilient and sustainable Durango by proactively managing and caring for our community forest. Through thoughtful stewardship, we aim to cultivate a diverse, healthy, and thriving tree canopy that enhances Durango's environmental, social, and cultural values. By aligning with the City's commitment to environmental responsibility, we will foster a vibrant, inclusive, and adaptable community forest capable of supporting future generations in a hotter, drier climate while improving the quality of life for all residents."

The CFMP vision aligns with the City of Durango's Strategic Plan, reinforcing a shared commitment to environmental responsibility, sustainability, and community well-being. By adopting a citywide perspective, the CFMP positions urban forestry as a cornerstone of Durango's broader goals, fostering cohesion, collaboration, and long-term resilience across all initiatives.

Guiding Principles and Goals Overview

Durango's Community Forest Management Plan was designed to guide the city in managing, protecting, and growing its community forest. The goals, strategies, and priority actions were developed based on research and analysis of available data, extensive internal and external engagement, and an evaluation of community forest sustainability criteria. The resulting goals and recommendations address the current conditions, existing and potential challenges, and shared priorities described in previous sections of the Plan. The Plan's long-term framework supports the shared vision for Durango's community forest.

Goal and Strategy Framework

Through the analysis of data, information collection, and input from both internal and external stakeholders, a set of overarching guiding principles emerged to shape the Plan's direction and strengthen its foundation. These principles reflect the community's priorities and are supported by feedback from internal stakeholder engagement sessions. Together with the Urban Forest Audit and the Indicators of Sustainable Urban Forestry—detailed in earlier sections—they form the core framework of the Plan. The goals are directly linked to the audit categories, with the overall audit score representing the average of these categories, as outlined in Durango's Audit Results.

Tree Management Policy Goal

Optimize and sustain existing tree canopy and ecosystem services, addressing environmental challenges while managing the removal of aging trees in poor condition. Through proactive planting, care, and community education we aim to enhance the sustainability and resilience of the community forest for future generations.

Capacity, Training, & Authority Goal

To strengthen tree health and diversity, we aim to utilize current technology, provide comprehensive training, establish strong policies, and build strategic partnerships, while optimizing existing capacity and resources.

Budget & Funding Goal

Adequate levels of funding and resources enable comprehensive and sustainable community forest management for the preservation and enhancement of tree benefits.

Assessments & Plans Goal

To improve regulatory framework and coordination, we aim to conduct comprehensive assessments, streamline regulations, and enhance inter-agency collaboration to ensure effective and cohesive community forestry management.

Community Engagement Goal

To expand education and community involvement, we aim to enhance public awareness, offer educational programs, and create opportunities for community engagement in community forestry initiatives.

Green Asset Management Goal

To enhance conservation and management practices, we aim to implement sustainable strategies, optimize resource allocation, and adopt best practices for the maintenance and preservation of our green assets, while proactively addressing and adapting to the impacts of climate change.

In support of the six goals, specific objectives, actions, and targets were developed to establish an actionable and achievable work plan for Durango's community forest. The Implementation section of this CFMP includes recommendations and guidance based on city objectives, feedback, and needs identified in the planning process. Examples include risk tree management, sustainability and resilience, among others.

Tree Management and Policy Goal

Optimize and sustain existing tree canopy and ecosystem services, addressing environmental challenges while managing the removal of aging trees in poor condition. Through proactive planting, care, and community education we aim to enhance the sustainability and resilience of the community forest for future generations.

MP

Audit Score: 72%

Objectives

1. Increase public understanding of tree-related policies and tree care best management practices.
2. Clarify and formalize tree planting requirements, inspection procedures, and enforcement processes.
3. Adapt community forestry strategies to mitigate the impacts of climate change, including heat island effects, stormwater management, and air quality improvement.

Tree Management Policy (MP) Strategies	
MP.01	Revise and update the Tree and Shrub Guide to consolidate tree-related policies, guidelines, best practices, and standards for planners, developers, homeowners, contractors, and private tree care companies.
MP.02	Conduct a periodic review of city policies and codes to evaluate and, if necessary, update guidelines for managing invasive species, promoting low-water-use species, and enhancing climate adaptability. Prioritize practical updates that ensure community forest resilience while aligning with regional climate goals and city capacity.
MP.03	Align tree-related resources and planning efforts across City departments and partners to meet common goals and improve efficiency.
MP.04	Develop and implement resilience plans to address potential threats to the community forest, such as extreme weather events.
MP.05	Regularly review and update development and landscaping standards to reinforce tree warranties, sustainability requirements, and adherence to landscaping standards. Collaborate with relevant departments to ensure practical enforcement and compliance.

Capacity, Training, & Authority Goal

To strengthen tree health and diversity, we aim to utilize current technology, provide comprehensive training, establish strong policies, and build strategic partnerships, while optimizing existing capacity and resources.

CT

Audit Score: 51%

Objectives

1. Staff are trained and qualified to routinely inspect and evaluate public trees for tree risk, public safety, and community forest health.
2. Ensure various City Departments working with trees are consistently using the current Best Management Practices and Industry Standards.
3. Promote a knowledgeable, safe, and efficient workplace by providing staff with access to certifications and training.

Capacity, Training, & Authority (CT) Strategies	
CT.01	Encourage and support staff to obtain certifications from recognized organizations in arboriculture, community forestry, and pest control to enhance their expertise and skills.
CT.02	Stay current with industry research, science, and technology through various platforms. An example includes management of current and potential exotic tree pest and disease threats.
CT.03	Provide or support training to departments involved in plan reviews, tree inspections, project design, and construction. ISA Certified Arborists within the department or supporting department should be involved with these processes.
CT.04	Implement a phased training program for the city tree trimmer applicant process, starting with foundational skills and advancing to specialized techniques under the guidance of the arborist supervisor. Include a volunteer work component where applicants work on publicly managed trees under the supervision of the of the forestry team to ensure compliance and best practices.
CT.05	Promote and encourage certifications for landscape contractors and professionals in the private sector to foster a healthier and more sustainable community forest. Partner with local institutions to improve access to certifications such as CSU Master Gardener, Arborist Certification, or Qualified Water Efficient Landscaper (QWEL). Collaboration efforts will focus on exploring options to make these programs more accessible in Durango, such as potential partnerships or incentives, aligning the workforce with the city's goals for tree health and resilience.
CT.06	Develop internship programs in partnership with local universities and organizations to bring in valuable support for community forestry while providing hands-on experience for future forestry professionals. Address potential housing challenges to make internships more feasible.

Budget & Funding

Adequate levels of funding and resources enable comprehensive and sustainable community forest management for the preservation and enhancement of tree benefits.

BF

Audit Score: 42%

Objectives

1. Pursue community forestry grants and technical assistance opportunities to support staff in ensuring that the City of Durango is operating safely and efficiently.
2. Periodically evaluate the staffing levels, structure, and resources for tree-related programs and adjust as needed to meet the goals of the CFMP and growing demands of the community forest.
3. Create a multi-year financial plan that allocates resources for ongoing maintenance, tree planting, emergency response, and community engagement activities.

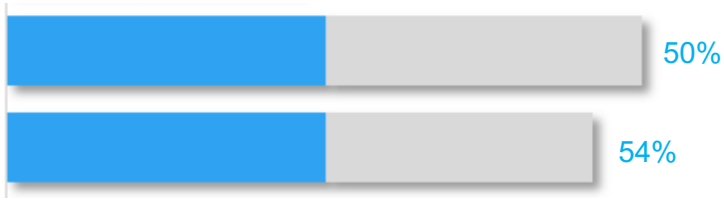
Budget And Funding (BF) Strategies	
BF.01	Develop an annual education and training budget for tree management staff that supports attending CEU accrediting seminars, workshops, and conferences each year.
BF.02	Utilize the UFMP's Tree Maintenance and Budget Sheet to secure funding for community forest management activities and tree plantings, including after care.
BF.03	Evaluate staffing resources needed to safely and effectively plant trees and provide post-planting care, ensuring efforts align with canopy recommendations, community needs, and population.
BF.04	Monitor grants and technical assistance opportunities from organizations such as the State of Colorado, U.S. Forest Service, CSU Extension Office, and others.
BF.05	Establish a continuous advocacy plan that communicates the importance of the community forest as an essential component of city infrastructure and quality of life, with the aim of increasing support for community forest initiatives including securing funding, supporting preservation, and/or facilitating expansion.
BF.06	Capitalize on the community forest's economic benefits to boost tourism, support local businesses, and position the city as a green destination. Highlight its contributions to property values, energy savings, and stormwater management to strengthen support among decision-makers.

Assessment and Plan Goal

To improve regulatory framework and coordination, we aim to conduct comprehensive assessments, streamline regulations, and enhance inter-agency collaboration to ensure effective and cohesive community forestry management.

AP

Audit Score: 52%



Objectives

1. Maintain an inventory of all public trees to inform tree management practices.
2. Track and monitor Durango's tree canopy through periodic assessments to measure canopy health, identify trends in decline or growth, and strive to maintain canopy cover above 20% as a key recommendation for a sustainable community forest.

Assessments and Plans (AP) Strategies	
AP.01	Maintain the inventory of public trees. Update public tree inventory as maintenance and new plantings occur.
AP.02	Review, update, and document the tree species appropriate for planting in the public right-of-way and encourage appropriate trees for private property in a Recommended Tree Planting List.
AP.03	Update the Tree Canopy Assessment (TCA) every 5-10 years using industry recommended protocols.
AP.04	Create an annual activity calendar for community forest management aligned with actions in this UFMP.
AP.05	Regularly update and utilize tree inventories and canopy assessments to proactively guide preservation efforts, inform development, address ecological concerns, and prioritize tree planting. These tools can identify vulnerable areas, enhance climate resilience, and support urban planning for a sustainable community forest.
AP.06	Periodically assess the city's Approved Tree List to include species that are well-suited to projected climate conditions. Engage community members and local arborists in the evaluation process to balance ecological needs with practical maintenance.

Community Engagement Goal

To expand education and community involvement, we aim to enhance public awareness, offer educational programs, and create opportunities for community engagement in community forestry initiatives.

CE

Audit Score: 83%

Objectives

1. Inform Durango's community members about CFMP goals, strategies, and progress.
2. Improve the public's understanding of community forestry by improving staff communications skills and materials for distribution.
3. Engage the community in tree-related activities that are educational and encourage stewardship of the community forest.

Community Engagement (CE) Strategies	
CE.01	Develop an community forestry outreach strategy that covers UFMP progress, tree care education, tree planting news, and other relevant updates.
CE.02	Develop consistent talking points and interdepartmental memos covering tree ordinances, mitigation strategies, tree planting, invasive species, pest and disease identification, best practices for planting and young tree care, pruning roles and procedures, and tree maintenance responsibilities.
CE.03	Continue to track and annually report community forestry activities to maintain Arbor Day Tree City USA designation and continue to achieve Arbor Day Foundation Growth Awards.
CE.04	Create a Community Tree Stewardship Network that engages residents in monitoring urban tree health through citizen science, providing them with the necessary training and tools, and supporting community groups with resources and recognition to foster collaboration and improve community forestry management.
CE.05	Create educational initiatives to increase residents' knowledge and appreciation of the community forest. Use interactive learning opportunities and visible markers to foster community engagement with trees.

Green Asset Management Goal

To enhance conservation and management practices, we will implement sustainable strategies, optimize resource allocation, and adopt best practices for the maintenance and preservation of our green assets.

GA

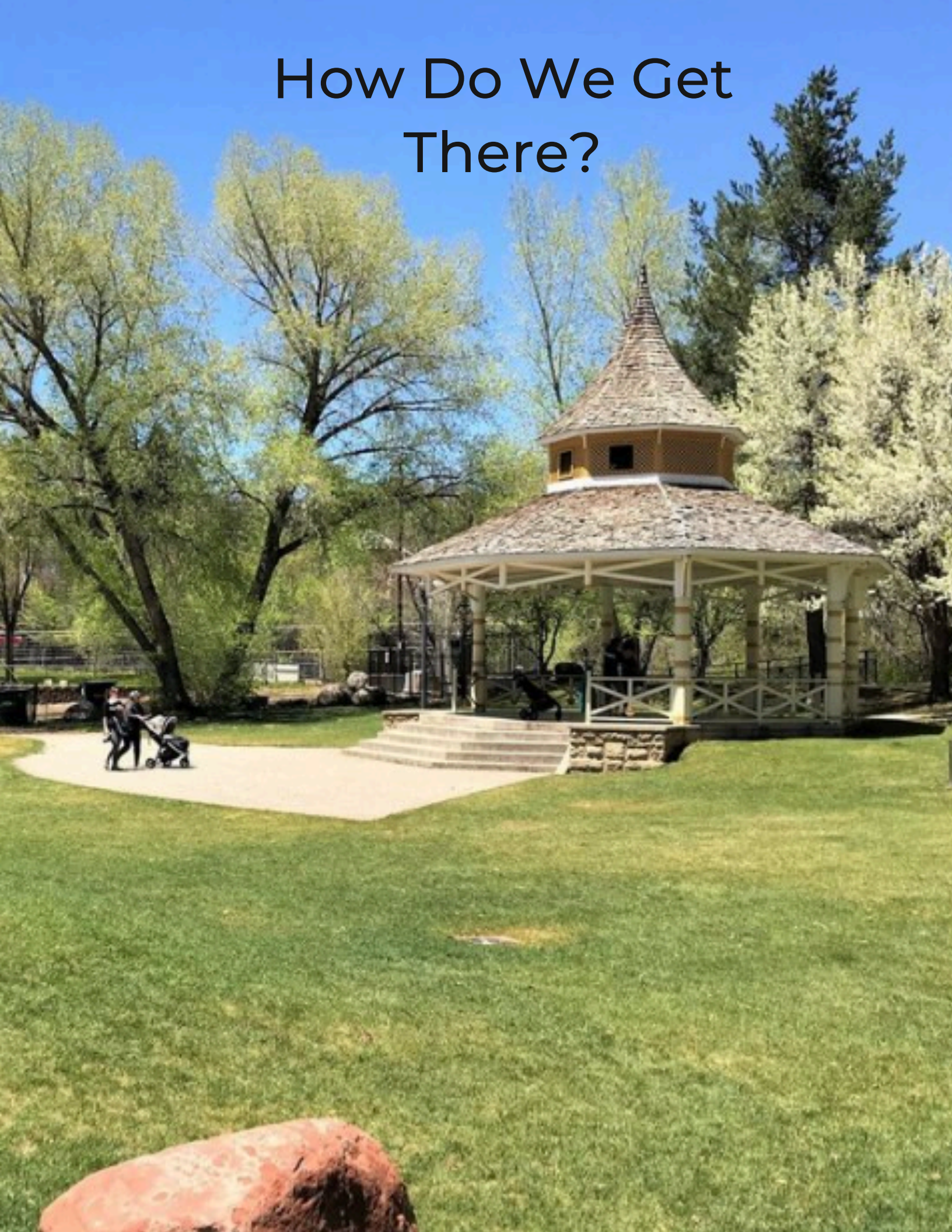
Audit Score: 60%

Objectives

1. Promote a resilient community forest through policies and practices that reduce Durango's vulnerability to known diseases or pest infestations, storms, and the impacts of climate change.
2. Develop and promote sustainable practices for wood waste management for public and private sectors.
3. Reduce the inherent risk posed by public trees by requiring City staff and contractors to use Best Management Practices and Industry Standards.

Green Asset Management (GA) Strategies	
GA.01	Develop an integrated pest management (IPM) program using citywide tree inventory data and the latest scientific research to plan and manage current and future tree pests and diseases in the city's community forest for long-term sustainability.
GA.02	Revise the suitable tree list by incorporating tree inventory data, climate change projections, site suitability (Right Tree, Right Place), drought tolerance, ecosystem services, and tree canopy goals, among other factors.
GA.03	Educate the community and implement programs to control and reduce invasive species in the community forest, protecting beneficial species.
GA.04	Annually revisit contract specifications and in-house policies and directives to ensure that tree care operations adhere to current industry standards, including ANSI A300 Standards for Tree Care Operations, ANSI Z133.1-2012 for Arboricultural Operations Safety
GA.05	Replace poor condition ash trees with diverse, resilient species, while enhancing the health of trees in fair condition to mitigate the impact of EAB.
GA.06	Establish programs for recycling green waste, such as tree trimmings and fallen leaves, into mulch and compost to be reused within the green asset management system.
GA.07	Implement climate-resilient planting practices and trial programs to adapt the community forest to future conditions and engage the community in the process.

How Do We Get There?



Implementation

This Community Forest Management Plan builds upon and expands the Durango CFMP from 2012. It sets the stage for long-term health, sustainable management, and resilience of the trees that comprise the community forest. Implementing a community forest management plan effectively after it is approved or adopted requires a committed group or team— likely consisting of members from the City and from the community— that organizes, manages, monitors, reports, and adjusts strategies and actions using an adaptive management approach. This approach is a structured, iterative process of robust decision making in the face of uncertainty and as changes to programs and resources arise. The goal of this approach is to reduce the uncertainty over time through systematic monitoring and to ensure the plan remains relevant and impactful.

It is recommended the City utilize the expertise of the Community Forestry Team and establish a community forestry working group or stakeholder group to manage Plan implementation and monitoring. This team should coordinate the implementation of actions with the respective partners or collaborators.

For Durango's 2024 Community Forest Management Plan, the goals detailed in the "What Do We Want?" section were informed by the tree canopy and public tree inventory data, stakeholder input, reviews of existing plans and policies, and the alignment with industry standards and best practices that were detailed in the "What Do We Have?" section. With this framework, the roadmap to achieve these goals is provided in this section, "How Do We Get There?" by detailing the recommended or priority actions and the supporting guidance. Based on the assessment of Durango's community forest resource, the programs that manage it, and the community that shapes and benefits from it, the following implementation schedule is recommended. Over time, as the Plan's initial strategies are implemented and its successes demonstrated, opportunities may arise to secure additional funding, partnerships, or staffing to support longer-term actions and expand the impact of the Plan.

Implementation Summary

Tree Management and Policy Goal Actions

Purpose Statements

1. A well-managed community forest ensures sustainability, resilience, and reduced risks, providing long-term benefits.
2. Effective partnerships and coordination are crucial for achieving shared community forestry goals efficiently.
3. Oversight and adherence to tree-related ordinances support canopy preservation and community forest expansion, aligning with long-term planning goals.

MP.01: Update and revise the Tree and Shrub Guide to consolidate tree-related policies, guidelines, best practices, and standards for planners, developers, homeowners, contractors, and private tree care companies.

- **Action Target 1:** Update and revise the Tree and Shrub Guide to consolidate tree-related policies, guidelines, best practices, and standards for planners, developers, homeowners, contractors, and private tree care companies. Disseminate the updated guide via workshops, digital platforms, and print. (Year 5)
- **Action Target 2:** Review and update the Tree and Shrub Guide based on stakeholder feedback and evolving needs to ensure its relevance and effectiveness. (Year 10)

MP:02: Conduct a periodic review of city policies and codes to evaluate and, if necessary, update guidelines for managing invasive species, promoting low-water-use species, and enhancing climate adaptability. Prioritize practical updates that ensure community forest resilience while aligning with regional climate goals and city capacity.

- **Action Target 1**: Develop and implement a framework for regularly reviewing and updating city policies related to species suitability, water use, and climate resilience. (Year 2)
- **Action Target 2**: Update city codes to incorporate best practices for managing invasive species and promoting climate-resilient planting in alignment with regional climate goals. (Year 5)

MP:03: Align tree-related resources and planning efforts across City departments and partners to meet common goals and improve efficiency.

- **Action Target 1**: Identify all tree-related resources, planning efforts, and stakeholders across City departments and partners to establish a shared framework. (Year 2)
- **Action Target 2**: Initiate regular cross-departmental meetings and collaborative efforts to improve alignment and achieve shared tree management goals. (Year 3)

MP:04: Develop and implement resilience plans to address potential threats to the community forest, such as extreme weather.

- **Action Target 1:** Conduct a comprehensive vulnerability assessment of the community forest to identify risks from extreme weather and other threats. (Year 2)
- **Action Target 2**: Develop and implement resilience strategies, such as planting wind-resilient species and integrating green infrastructure, to mitigate identified risks. (Year 4)

MP:05: Regularly review and update development and landscaping standards to reinforce tree warranties, sustainability requirements, and adherence to landscaping standards. Collaborate with relevant departments to ensure practical enforcement and compliance.

- **Action Target 1**: Update tree warranty requirements to include enforceable care timelines and inspection checkpoints for newly planted trees. (Year 3)
- **Action Target 2**: Strengthen landscaping sustainability standards by emphasizing drought-tolerant plantings and ensuring practical enforcement and compliance. (Year 5)

Capacity, Training, and Authority Goal Actions

Purpose Statements

1. Staff training enhances efficiency, safety, and service quality, contributing to a well-managed community forest.
2. Continual research and adaptive planning are essential for sustainable community forest management as cities evolve.
3. Improved training ensures transparency, consistency, and effectiveness in community forestry practices.

CT.01: Encourage and support staff to obtain certifications from recognized organizations in arboriculture, community forestry, wildfire management, and pest control to enhance their expertise and skills.

- **Action Target 1:** Identify required certifications and qualifications for tree management staff and contractors, and develop a plan to meet these standards. (Year 2)
- **Action Target 2:** Ensure all staff and contractors maintain active certifications, with annual tracking and reporting of compliance. (Year 5-10)

CT.02: Stay current with industry research, science, and technology through various platforms. An example includes management of current and potential exotic tree pest and disease threats.

- **Action Target 1**: Establish a framework to regularly access and disseminate critical industry research and updates. (Year 2)
- **Action Target 2:** Require forestry team staff to attend at least two industry conferences, webinars, or training sessions annually and integrate insights into operations. (Year 3–10)

CT.03: Provide or support training to departments involved in tree reviews, inspections, project design, and construction. ISA Certified Arborists within the department or supporting department should be involved with these processes.

- **Action Target 1:** Conduct a training needs assessment to align with departmental goals and priorities. (Year 3)
- **Action Target 2:** Implement annual training sessions incorporating best practices, emerging technologies, and updated regulations. (Year 3–10)

CT.04: Implement a training requirement for the city tree trimmer application process, including a hands-on work component where applicants perform tasks on publicly managed trees under the supervision of the forestry team to ensure compliance with best practices.

- **Action Target 1:** Develop and finalize training program materials, including safety protocols, program requirements, and evaluation criteria. (Year 2)
- **Action Target 2:** Launch the training program, requiring all new applicants and existing tree workers to complete it annually or upon application renewal. (Year 5)

CT.05: Promote certifications like CSU Master Gardener, Arborist Certification, and QWEL for private-sector professionals to support a healthier and more resilient community forest. Partner with local institutions to improve access through partnerships or incentives, aligning the workforce with the city's goals for tree health and sustainability.

- **Action Target 1:** Identify essential certifications, such as Master Gardener, Arborist Certification, and QWEL, to support a healthy community forest. (Year 2)
- **Action Target 2:** Partner with certification organizations to host accessible training sessions in Durango, providing incentives to boost participation. (Year 5)

CT.06: Develop internship programs in partnership with local universities and organizations to bring in valuable support for community forestry while providing hands-on experience for future forestry professionals. Address potential housing challenges to make internships more feasible.

- **Action Target 1**: Collaborate with local universities and state organizations to establish the structure of internship programs, including roles, responsibilities, and potential funding sources. (Year 3)
- **Action Target 2**: Launch the program with an initial cohort, incorporating housing support through partnerships, stipends, or field housing options provided by the State Forest Service or BLM. (Year 5)

Budget and Funding Goal Actions

Purpose Statements

1. Adequate and diversified funding is essential for achieving long-term community forest management goals and sustaining a healthy community forest.
2. Proper staff training and resources enhance efficiency, safety, and service levels, contributing to a productive and effective working environment.

BF.01: Develop an annual education and training budget for tree management staff that supports attending CEU-accrediting seminars, workshops, and conferences each year.

- **Action Target 1:** Conduct a training needs assessment and establish a budget plan to support staff education. (Year 1)
- **Action Target 2:** Ensure all tree management staff maintain necessary certifications and licenses (Year 2–10)

BF.02: Monitor grants and technical assistance opportunities from organizations such as the State of Colorado, U.S. Forest Service, CSU Extension Office, and others.

- **Action Target 1:** Identify and apply for grants to support projects such as tree planting, inventory, and planning. (Year 3)

- **Action Target 2:** Maintain a schedule for continuous grant submissions to secure funding for priority projects annually. (Year 3–10)

BF.03: Utilize the CFMP's Tree Maintenance and Budget Sheet to secure funding for community forest management activities and tree plantings, including aftercare.

- **Action Target 1:** Identify funding priorities using the CFMP budget tools and implement funding strategies for key projects. (Year 3)
- **Action Target 2:** Secure sustainable funding for priority activities, including tree planting and post-planting care. (Year 5–10)

BF.04: Evaluate staffing resources required to safely and effectively plant trees aligned with canopy goals and provide post-planting care.

- **Action Target 1:** Conduct a staffing analysis to determine resources needed for planting and maintenance aligned with canopy goals. (Year 3)
- **Action Target 2:** Develop and submit a budget proposal to secure necessary staffing resources for long-term tree care. (Year 5)

BF.05: Establish a continuous advocacy plan that communicates the importance of the community forest as an essential component of city infrastructure and quality of life, with the aim of increasing support for community forest initiatives including securing funding, supporting preservation, and/or facilitating expansion.

- **Action Target 1:** Develop an advocacy calendar and messaging framework emphasizing the community forest's infrastructure benefits. (Year 3)
- **Action Target 2:** Provide advocates with tools and resources, such as case studies and talking points, to strengthen public and decision-maker support. (Year 5)

BF.06: Capitalize on the community forest's economic benefits to boost tourism, support local businesses, and position the city as a green destination. Highlight its contributions to property values, energy savings, and stormwater management to strengthen support among decision-makers.

- **Action Target 1:** Partner with City departments to promote the community forest in marketing campaigns and green initiatives. (Year 3)
- **Action Target 2:** Develop materials that showcase trees' economic contributions, such as property value increases and energy savings, to gain support for forestry investments. (Year 5)

Assessment and Plans Goal Actions

Purpose Statements

1. Updated inventories and assessments inform maintenance needs, resource allocation, and help establish new policy and canopy goals.
2. Accurate tracking and structured programs guide management, prioritize actions, and enhance efficiency in achieving community forest sustainability.
3. A diverse and well-planted community forest enhances resilience to pests, diseases, and climate change, aligning with tree and site-specific requirements.

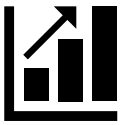
AP.01: Maintain the inventory of public trees. Update the public tree inventory as maintenance and new plantings occur to ensure accurate and actionable data.

- **Action Target 1:** Equip crews with real-time inventory tools (tablets) to update tree data and identify priority planting areas during maintenance and planting activities. (Year 2)
- **Action Target 2:** Conduct annual inventory updates for street trees in at least one City planning area, ensuring current data. (Year 3-10)

AP.02: Review, update, and document the tree species appropriate for planting in the public right-of-way and encourage suitable trees for private property through a Recommended Tree Planting List. Engage community members and local arborists in the evaluation process to balance ecological needs with practical maintenance.

- **Action Target 1:** Assess and update the tree species list with input from local arborists and community members to ensure suitability for ecological and maintenance needs. (Year 3-10)
- **Action Target 2:** Publish and distribute the updated Recommended Tree Planting List through workshops, city resources, and digital platforms. (Year 5)

AP.03: Update the Tree Canopy Assessment (TCA) every 5-10 years using industry recommended protocols.



- **Action Target 1:** Secure budget approval and select a consultant to complete the updated TCA. (Year 4)
- **Action Target 2:** Complete and publish the updated TCA, ensuring it aligns with community forest management goals. (Year 5)

AP.04: Create an annual activity calendar for community forest management aligned with actions in this UFMP.

- **Action Target 1:** Draft and finalize an annual community forest management calendar based on CFMP actions and priorities. (Year 2)
- **Action Target 2:** Implement the calendar to guide forestry team activities and community engagement. (Year 3)

AP.05: Utilize tree inventories and canopy assessments to proactively guide preservation efforts, inform development, address ecological concerns, and prioritize tree planting. These tools can identify vulnerable areas, enhance climate resilience, and support urban planning for a sustainable community forest.

- **Action Target 1:** Use inventory and canopy data to identify vulnerable areas and prioritize preservation and planting efforts. (Year 2)
- **Action Target 2:** Develop a framework to integrate inventory data into city planning and ecological restoration decisions. (Year 4)

AP.06: Periodically assess the city's Approved Tree List to include species that are well-suited to projected climate conditions. Engage community members and local arborists in the evaluation process to balance ecological needs with practical maintenance.

- **Action Target 1:** Evaluate and update the Approved Tree List based on projected climate data and local ecological needs. (Year 2)
- **Action Target 2:** Collaborate with stakeholders to ensure the list balances ecological benefits and maintenance practicality. (Year 4)

Community Engagement Goal Strategies

Purpose Statements

1. Consistent messaging and accessible information enhance public awareness and support for community forestry goals.
2. Demonstrating care for the community forest and its caretakers reinforces community commitment and engagement.
3. Supports the UFMP's long-term objectives of expanding canopy coverage and biodiversity through active community involvement.

CE.01: Develop a community forestry outreach strategy that covers CFMP progress, tree care education, tree planting news, and other relevant updates.

- **Action Target 1:** Collaborate with City departments and partners to draft an outreach plan aligned with community forestry goals. (Year 1)
- **Action Target 2:** Fully integrate community forestry outreach and education into City and partner initiatives, ensuring ongoing alignment. (Year 2)

CE.02: Develop consistent talking points and interdepartmental memos covering tree ordinances, mitigation strategies, tree planting, invasive species, pest and disease identification, best practices for planting and young tree care, pruning roles and procedures, and tree maintenance responsibilities.

- **Action Target 1:** Develop and distribute talking points and interdepartmental memos aligned with the outreach strategy. (Year 2)
- **Action Target 2:** Share information and resources annually, ensuring consistent communication and alignment. (Year 2-10)

CE.03: Utilize the Community Recreation Center and local schools to distribute educational materials on tree planting and care. Collaborate with local environmental organizations to offer workshops and presentations, promoting the benefits of tree planting and care to residents.

- **Action Target 1:** Distribute tree care and planting guides through community centers and schools to reach diverse audiences. (Year 2)
- **Action Target 2:** Partner with environmental organizations to host workshops and presentations on tree care and benefits. (Year 2-10)

CE.04: Continue to track and annually report community forestry activities to maintain Arbor Day Tree City USA designation and continue to achieve Arbor Day Foundation Growth Awards.

- **Action Target 1:** Ensure annual reporting to maintain Tree City USA designation and strive for consecutive ADF Growth Awards. (Year 1)
- **Action Target 2:** Monitor progress and continue to achieve Tree City USA and Growth Awards annually. (Year 10)

CE.05: Establish a Community Tree Stewardship Network to engage residents in monitoring urban tree health through citizen science, providing training, tools, and support to enhance collaboration and community forestry management.

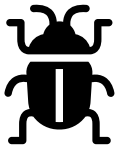
- Action Target 1: Form a Tree Stewardship Network by partnering with at least three community groups and providing necessary support and tools. (Year 2)
- Action Target 2: Train Tree Stewards and volunteers in citizen science techniques and tree health monitoring, providing them with monitoring kits. (Year 3)

Green Asset Management Goal Strategies

Purpose Statements

1. A well-managed community forest is sustainable, resilient, and beneficial, reducing risks and enhancing public perception.
2. Adherence to tree species recommendations and consistent assessments ensure a resilient community forest across public and private properties.
3. Partnerships, community engagement, and coordinated efforts are essential for achieving shared goals and expanding the urban canopy for long-term sustainability.

GA.01: Develop an integrated pest management (IPM) program using citywide tree inventory data and the latest scientific research to plan and manage current and future tree pests and diseases in the city's community forest for long-term sustainability.



- **Action Target 1**: Tree inventory data is analyzed and cross-referenced with industry research to identify emerging pest-related vulnerabilities (Year 1)
- **Action Target 2**: A tree pest and disease plan is implemented and a strategy for managing other susceptible tree species is established. (Year 1)

GA.02: Revise the suitable tree list by incorporating tree inventory data, climate change projections, site suitability (Right Tree, Right Place), drought tolerance, ecosystem services, and tree canopy goals, among other factors.

- **Action Target 1**: Update the approved tree species list based on inventory analysis, CFMP, and stakeholder input. (Year 6)
- **Action Target 2**: Integrate the updated list into City projects, policies, and manuals. (Year 8)

GA.03: Develop a program to identify, remove, and replace invasive species with desirable species to restore ecological balance and improve biodiversity.

- **Action Target 1**: Use tree inventory data to create a plan for removing invasive species on city property, aiming to replace 50-100 trees annually. (Year 5)
- **Action Target 2**: Monitor and maintain new plantings to ensure high survival rates and prevent regrowth of invasives. (Year 6-10).

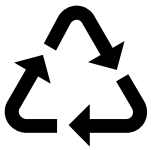
GA.04: Annually revisit contract specifications and in-house policies and directives to ensure that tree care operations adhere to current industry standards, including ANSI A300 Standards for Tree Care Operations, ANSI Z133.1-2012 for Arboricultural Operations Safety Requirements, and ISA Series Best Management Practices (BMPs).

- **Action Target 1**: Update contractor specifications to comply with ANSI, ISA, and OSHA standards, with compliance reviewed annually. (Year 1)
- **Action Target 2**: Monitor adherence to standards, showing reduced tree care malpractices. (Year 10)

GA.05: Replace poor condition ash trees with diverse, resilient species to mitigate the impact of EAB, while enhancing the health of trees in fair condition.

- **Action Target 1:** Maintain healthy high-value ash trees and ensure replacement survival through regular assessments and treatments. (Year 1-10)
- **Action Target 2:** Use inventory data to create a plan for replacing 50 ash trees annually on city property, focusing on those in poor condition. (Year 5)

GA.06: Establish programs for recycling green waste, such as tree trimmings and fallen leaves, into mulch and compost for reuse within the green asset management system and collaborate with local woodworkers to repurpose suitable wood from removed trees. Distribute recycled materials to the community to promote sustainable practices.



- **Action Target 1:** Expand the program to recycle tree trimmings and leaves into mulch and compost for city use, increasing community awareness. (Year 1)
- **Action Target 2:** Partner with artisans to repurpose removed trees into furniture or community-use items. (Year 2)

GA.07: Implement climate-resilient planting practices and trial programs to adapt the community forest to future conditions and engage the community in the process.

- **Action Target 1:** Assess city microclimates and identify suitable tree species for trial plantings. (Year 2)
- **Action Target 2**: Launch pilot programs to test selected species in identified microclimates, monitoring their adaptability and resilience to projected climate conditions. (Year 3-10)

Considerations and Recommendations

Durango's Tree Canopy Cover

A citywide tree canopy goal is an essential tool for guiding community forest management and improving livability. Urban tree canopy (UTC) goals, typically expressed as a percentage of canopy cover, simplify the complex benefits of a community forest into a single, measurable metric. However, these goals must balance ambition with practicality. For Durango, this means setting targets that reflect the city's environmental challenges, resource constraints, and community needs.

Durango already exceeds industry recommendations for semi-arid ecoregions—typically 15–18% canopy cover—with an impressive 24% canopy cover and a Tree Equity Score of 99 out of 100. While commendable, these achievements are only part of the story. The city must address critical questions about the sustainability of maintaining this canopy, the species composition, and the presence of invasive or undesirable trees that may jeopardize long-term ecological health.

Expanding Durango's tree canopy is not advisable due to resource and climate constraints. Instead, the Community Forest Management Plan (CFMP) emphasizes maintaining and improving the health and diversity of the existing canopy. This includes addressing invasive species like Siberian Elms (750 inventoried trees) and replacing them with more desirable species better suited to long-term sustainability. Although this may result in initial canopy loss, such actions are essential investments in ecological health and future recovery.

Deferred maintenance and aging trees further strain the community forest. Insurance pressures to remove large street trees exacerbate this challenge, creating short-term obstacles for maintaining canopy coverage. Despite these pressures, Durango can build a healthier, more resilient community forest by focusing on mitigation plantings, ensuring removed trees are replaced with desirable species, and providing the necessary care to establish them. These efforts align with industry standards and will gradually position the city to recover its canopy while delivering enhanced ecosystem benefits.

While maintaining a 24% canopy cover already exceeds regional standards, the CFMP prioritizes optimizing tree health and resilience by addressing deferred maintenance, removing undesirable species, and focusing on proactive management. These efforts not only align with broader city priorities—such as environmental stewardship, climate resilience, and public health—but also pave the way for a healthier, more sustainable community forest. Achieving equity and sustainability requires careful attention to

canopy composition, as focusing solely on percentage goals without addressing quality can lead to significant ecological and economic challenges.

By framing canopy goals as part of a broader strategy to improve tree health and diversity, Durango's approach fosters a shared vision of a vibrant, resilient community forest. Proactive management ensures the city can adapt to future challenges while building a resource that benefits residents and the environment for generations to come.

Tree Management and Prioritization Workbook

Effective tree maintenance is critical for sustaining a healthy community forest, mitigating risks, and optimizing the benefits provided by the community forest. While the industry-recommended maintenance cycle is every 7 years, some municipalities, including Durango, may adopt a 10-year cycle as an interim measure. This approach addresses practical constraints while laying the foundation for achieving the 7-year goal over time.

Some constraints that make a 10-year maintenance cycle more approachable include:

- **Budget Constraints**: Limited funding often prevents municipalities from immediately adopting the 7-year cycle. A 10-year cycle enables basic maintenance within existing budgets while exploring opportunities to increase funding for community forestry.
- **Staffing Challenges:** Many municipalities face staffing shortages, making it difficult to meet the demands of a 7-year cycle. A 10-year cycle provides a manageable workload for the current team while the city works toward expanding staffing capacity.
- **Phased Transition**: A 10-year cycle serves as a practical steppingstone, allowing the municipality to gradually build resources, improve efficiencies, and increase capacity to meet the 7-year standard.
- **Prioritization of High-Risk Trees:** During the extended cycle, priority can be given to high-risk or high-value trees, ensuring that critical areas are addressed while maintaining a longer overall timeline.
- **Local Context Considerations:** Environmental factors, such as species composition, climate, or urban density, may reduce the immediate need for a shorter cycle, making a 10-year approach suitable in the short term.

While not the industry standard, a 10-year cycle ensures all trees are regularly inspected and maintained within limited resources, providing a systematic approach to community forest management that prevents deferred maintenance, reduces risks, and demonstrates a commitment to proactive care.

To transition from a 10-year to a 7-year cycle, the following strategies should be implemented:

- **Secure Additional Funding:** Pursue grants, partnerships, and dedicated budget allocations to support increased maintenance capacity.
- **Expand Staffing**: Hire additional forestry team staff or contract professionals to meet the demands of a shorter cycle.
- **Leverage Technology:** Use inventory software and data-driven scheduling to optimize efficiency and prioritize work.

- **Community Engagement:** Develop programs that involve residents, such as volunteer tree care initiatives, to supplement staff efforts and build community support.
- **Monitor and Evaluate Progress:** Regularly assess the effectiveness of the 10-year cycle and progress toward transitioning to the 7-year standard.

Adopting a 10-year tree maintenance cycle provides a realistic and sustainable approach for municipalities working within budgetary and staffing constraints. With a clear goal of transitioning to the 7-year industry standard, this phased approach allows the city to maintain tree health and safety while building the capacity needed for long-term success. By prioritizing high-risk trees, leveraging technology, and securing additional resources, Durango can ensure its community forest continues to thrive.

The recommended Public Tree Management Program is based on inventory data collected as of September 2024 and does not include updates to the public tree population made after that date. The tree management workbook focuses solely on the trees inventoried and their associated routine and recommended maintenance. It does not incorporate additional recommendations, such as the removal of target or invasive species.

The table below summarizes the tree maintenance and removal prioritization criteria and process as determined by the analysis of the publicly managed tree inventory:

Durango's Public Tree Management Prioritization Parameters		
Priority Ranking	**Filters Applied**	**Justification**
Priority 1 **High Risk Removal or Prune**	Status = Dead, or Condition = Dead Risk Assessment = High	These trees are the most critical to address first in maintenance to reduce risk and create new planting spaces. **32 trees are eligible** (as of September 2024)
Priority 2 **Critical Removal or Prune**	Status = Alive Condition = Poor Risk Assessment = Medium	Trees that have the potential to be a high risk and need to be maintained. **687 trees are eligible** (as of September 2024)
Priority 3 **Large Tree Routine Maintenance (7-year cycle)**	Diameter at Standard Height (DSH) >6" Status = Alive Condition ≠ Dead or poor Risk Assessment = Low	These trees require routine maintenance to maintain their health over time. **7,360 trees are eligible** (as of September 2024)
Priority 4 **Young Tree Routine Pruning (3-year cycle)**	DSH <6" Status = Alive Condition ≠ Dead or poor Tree Work ≠ Remove	These are young trees and are being maintained to reduce structure and pruning issues in the future. **4,031 trees are eligible** (as of September 2024)

Table 6. Summary of the public tree maintenance and removal prioritization criteria and process.

Management Activity Counts	Duration	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Activity Totals
Priority 1 High Risk Removal	Years 1-3	4	3	4	-	-	-	-	-	-	-	11
Priority 1 High Risk Prune	Years 1-3	7	7	7	-	-	-	-	-	-	-	21
Priority 2 Critical Removal	Years 1-3	82	82	82	-	-	-	-	-	-	-	246
Priority 2 Critical Prune	Years 1-3	147	147	147	-	-	-	-	-	-	-	441
Priority 3 Large Tree Routine Prune	Years 1-10	736	736	736	736	736	737	735	736	736	736	7,360
Priority 4 Small Tree Routine Prune	Years 1-4	1,008	1,008	1,008	1,007	-	-	-	-	-	-	4,031
Annual Totals	**10 Years**	**1,984**	**1,983**	**1,984**	**1,743**	**736**	**737**	**735**	**736**	**736**	**736**	**12,110**

Figure 33. Summary of tree counts for the recommended ten-year Public Tree Management Program.

Management Activity Costs	Duration	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Activity Totals
Priority 1 High Risk Removal	Years 1-3	$8,130	$6,720	$8,490	-	-	-	-	-	-	-	$23,340
Priority 1 High Risk Prune	Years 1-3	$7,678	$7,504	$7,970	-	-	-	-	-	-	-	$23,152
Priority 2 Critical Removal	Years 1-3	$84,240	$86,130	$86,670	-	-	-	-	-	-	-	$257,040
Priority 2 Critical Prune	Years 1-3	$190,382	$190,382	$190,414	-	-	-	-	-	-	-	$571,178
Priority 3 Large Tree Routine Prune	Years 1-10	$510,942	$510,210	$510,210	$510,414	$510,738	$511,638	$509,718	$510,210	$510,924	$510,384	$3,573,870
Priority 4 Small Tree Routine Prune	Years 1-4	$292,842	$293,016	$292,842	$292,668	-	-	-	-	-	-	$1,171,368
Annual Totals	**10 Years**	**$1,094,214**	**$1,093,962**	**$1,096,596.00**	**$803,082**	**$510,738**	**$511,638**	**$509,718**	**$510,210**	**$510,942**	**$510,384**	**$5,619,948**

Figure 32. Summary of estimated costs for the recommended ten-year Public Tree Management Program.

The Public Tree Management Prioritization Workbook provides a detailed 10-year framework for tree maintenance, utilizing data from the City of Durango's tree inventory and prioritization analysis. Developed using average on-call tree work costs for Colorado municipalities, the workbook categorizes tasks by maintenance priority and diameter size class (DSH) to guide effective resource allocation.

The workbook identifies four priority levels: immediate and necessary tree removals, pruning for established trees, and pruning for newly planted trees. These priorities are based on the City's public tree inventory as of September 2024, with the workbook designed to accommodate updates to tree counts, which in turn adjust prioritization figures. Over the 10-year period, the City will address 11 immediate removals within the first three years, remove an additional 246 trees concurrently, prune an average of

736 established trees annually, and conduct structural health pruning for 1,008 young trees annually. As new trees are added to the inventory, they will need to be incorporated into the pruning schedule, increasing costs over time.

The program's projected cost is approximately $715,148 annually, totaling $5,619,948 over 10 years. These estimates are based on the assumption that all work will be contracted out, highlighting the significant investment required to maintain a healthy, safe, and sustainable community forest. Given the challenges of securing budget approvals exceeding one million dollars, it is critical to allocate funds strategically. The City should prioritize budget requests and funding efforts toward addressing Priority 1 and Priority 2 trees. Accelerating the maintenance of these high-risk trees beyond the workbook's schedule can reduce the overall workload, alleviate resource constraints, and allow staff to shift their focus to routine pruning and other essential tasks.

Pruning tasks are estimated at an industry standard of three hours per tree. According to the maintenance worksheet, the annual pruning workload for large and small trees is approximately 5,232 hours. With four full-time Forestry Team employees providing 8,320 work hours annually (excluding time off for PTO, holidays, and additional responsibilities), this framework offers a practical guide for prioritizing tasks and optimizing resource management. Conducting a brief time study could help identify efficiency improvements, enabling the team to streamline operations further and make the most of available resources.

The proposed 10-year cycle offers a practical interim solution to address deferred maintenance while building capacity for the industry-recommended 7-year cycle. It focuses on reducing resource constraints, fostering partnerships, and engaging the community through strategies outlined in the CFMP, such as internships and citizen science programs. Framing this effort as a strategic investment underscores its alignment with broader city goals and long-term forest health. While achieving all benchmarks may be ambitious, even partial progress will significantly improve the status quo. Prioritizing high-risk trees, leveraging data for efficiency, and building capacity will guide Durango toward a healthier, more sustainable community forest and set a clear path for achieving the 7-year maintenance standard.

Routine (Proactive) Pruning of Established Public Trees

Routine pruning is essential for creating structurally sound trunk and branch architecture, maximizing tree lifespan, and managing potential risks. This proactive or programmed pruning sustains a tree's benefits for as long as possible, ideally until the tree naturally reaches senescence—a gradual process of aging and deterioration. Proactive pruning is typically performed citywide or within prioritized maintenance corridors on a rotation of five to seven years, depending on species, tree density, pedestrian and vehicle activity, budget, and other factors. Each tree in the proactive pruning cycle is pruned for clearance, risk reduction, health, and structural development at least once during the programmed cycle. Proper pruning minimizes risks, such as branch failure, while delivering benefits such as improved storm resilience, reduced breakage, better clearance, enhanced health and appearance, and increased safety for pedestrians and vehicles.

Routine pruning efforts will serve as a cornerstone for improving tree health and reducing the overall maintenance burden over time, making the eventual transition to a 7-year cycle more achievable. By aiming to prune 736 trees annually, Durango will move closer to achieving sustainable maintenance practices, recognizing that this goal represents progress rather than a firm commitment.

Proactive pruning should remain a critical component of Durango's recommended Tree Management Program for City-maintained public trees. These plans should align with the CFMP goals, complementing other management initiatives such as tree planting, plant health care, and emergency response programs to foster an equitable and resilient community forest.

The level of maintenance performed directly influences tree establishment, survival, growth, and condition, which, in turn, affect the benefits provided by the community forest. Suboptimal maintenance may result in reduced benefits, highlighting the "costs" of not maintaining trees. A robust proactive pruning program ensures that the community forest generates maximum ecosystem services while minimizing risks and liabilities.

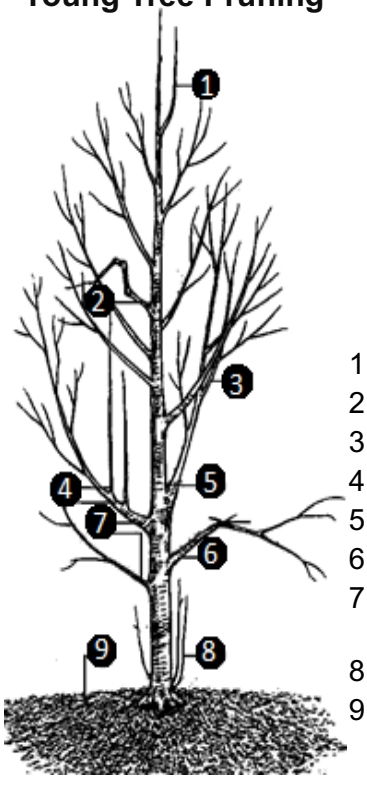
From 2017 to 2023, the Forestry Team pruned an average of 598 trees annually, peaking at 897 trees in 2022. Equipped and trained to handle much of the tree maintenance in-house, the team utilizes established protocols to determine when external contractors are needed, enabling effective allocation of time and resources. These protocols, combined with the tree maintenance worksheet and budget considerations, should continue to guide the scheduling of contracted work at the start of each year. Addressing priority one and two trees over time will gradually reduce the workload, freeing resources for routine pruning tasks.

With 12,110 trees in the City's inventory, approximately 7,360 (61%) are eligible for routine pruning. To maintain a 10-year pruning cycle, the City would need to increase annual pruning to approximately 736 trees. To transition to a seven-year cycle, this number would need to scale further. Regular evaluation of pruning metrics, tree care demands, and service requirements is critical to ensuring sustainable staffing and resource allocation. By integrating routine pruning into a comprehensive maintenance strategy, Durango can build capacity, improve tree health, and progress toward its long-term goal of a seven-year pruning cycle.

Young Tree (Structural) Pruning

Young tree pruning is performed to improve tree form or structure; the recommended length of young tree pruning cycles is three years since young trees tend to grow at faster rates (on average) than more mature trees. The young tree cycle differs from a routine pruning cycle in that these trees generally can be pruned from the ground with a pole pruner or pruning shear.

The objective is to increase structural integrity by pruning for one dominant leader in most cases for most tree species. Young tree pruning is species-specific, since many trees may naturally have more than one leader. For such trees, young tree pruning is performed to develop a strong structural architecture of branches so that future growth will lead to a healthy, structurally sound tree. In addition to training pruning, young trees may also require additional maintenance such as added or amended mulch, watering, added or removed stakes and ties, and/or clearance of debris and litter. These needs can potentially be addressed during young tree pruning.



1. Prune competing leader
2. Prune malformed branches
3. Remove crossing branches
4. Remove water sprouts
5. Remove branches with poor angles
6. Prune broken or damaged branches
7. Prune temporary branches over time
8. Remove suckers
9. Apply 2-3" of mulch

Figure 34. Illustration and description of the young tree pruning methods and considerations (Source: Arbor Day Foundation).

Trees included in the young tree pruning cycle are generally less than six inches DSH. These younger trees sometimes have branch structures that can lead to potential problems as the tree ages. Potential structural problems include codominant leaders, multiple limbs attaching at the same point on the trunk, crossing/interfering limbs, or dead/diseased/damaged limbs. If these problems are not corrected, they may worsen as the tree grows, increasing risk and creating potential liability.

Durango's public tree inventory identifies 4,031 trees (33%) requiring young tree pruning under the Public Tree Management Program. These trees, under six inches in diameter, are alive and not slated for removal. Figure 32 outlines the recommended pruning cycle and associated costs for young tree pruning. To alleviate the workload on Forestry Team, this CFMP recommends creating a citizen science group to assist with pruning small and young trees, ensuring these maintenance tasks are addressed efficiently while engaging the community in forest stewardship.

Mitigation Plantings

While Durango is not emphasizing a canopy goal in this CFMP, mitigation plantings remain essential to offset tree removals, maintenance activities, and anticipated annual tree mortality. Initial mitigation planting needs were calculated based on the priority removals identified in the Tree Maintenance Workbook. Approximately 86 trees are slated for removal annually over the first three years, and these will need to be replaced.

Further mitigation requirements account for the expected annual mortality of all live inventoried trees and the newly planted mitigation trees. Predicted mortality rates assume a one percent loss annually for both the existing tree population and new mitigation plantings. These calculations are based on the inventoried tree population and the recommended maintenance activities outlined in the workbook.

It is important to note that these estimates do not account for potential changes to the broader community forest. The Forestry Team must regularly update these figures to reflect changes in the community forest and ensure mitigation planting efforts remain aligned with current needs and goals.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Mitigation Plantings Based on Annual Mortality	82	82	82	82	82	82	82	82	82	82
Mitigation Plantings Based on Priority Removals	86	85	86	-	-	-	-	-	-	-
Total	168	167	168	82	82	82	82	82	82	82

Table 7. Summary of tree planting counts for the recommended ten-year Public Tree Management Program

Based on tree planting contract costs provided by the City, the average cost per tree planted is approximately $1,000. This brings the total cost for mitigation plantings in the first three years to an estimated $167,000 to $168,000 if the City opts to contract out all mitigation plantings. These costs underscore the significant financial commitment required to maintain the health and sustainability of Durango's community forest.

It is essential to recognize that mitigation planting needs will evolve beyond the initial inventory projections due to factors such as weather events, pest and disease outbreaks, and other unforeseen circumstances. As these changes occur, additional trees will need to be replaced, and costs may fluctuate accordingly. This variability highlights the critical importance of mitigation plantings in offsetting tree loss and sustaining the community forest's benefits.

To manage costs effectively, the City should adopt innovative strategies to meet mitigation planting requirements. Recommendations include partnering with local nurseries to source affordable tree stock, organizing volunteer and community-led planting events, and balancing in-house planting efforts with contracted work based on budget availability. Establishing trial planting sites in microclimates across the city, in collaboration with research partnerships, can help identify resilient species and introduce new tree stock. While risks such as site-specific mortality exist, these efforts can accelerate tree planting, engage the community, and support the long-term health the community forest. Programs like Colorado Tree Select or Select Tree Evaluation Program, a citizen science initiative that trials new species and cultivars under Colorado-specific conditions, offer valuable opportunities. Partnering with such groups can provide Durango with access to affordable nursery stock for trial plantings and other resources, helping evaluate species for future sustainability and survivability in the region’s arid climate.

Wherever possible, mitigation plantings should occur at or near the original tree’s location to preserve ecological and aesthetic benefits. These plantings are more than a financial commitment, they represent a strategic investment in Durango’s community forest, ensuring resilience, sustainability, and longevity.

Invasive Species

The City aims to prioritize invasive species management, particularly addressing the 750 Siberian Elms identified on public property, as well as numerous unaccounted elms within Durango's urban ecosystem. While removing all 750 trees is not part of the current maintenance plan, the program focuses on removing 28 Siberian Elms as part of Priority One and Two tasks, with an additional 100 trees slated for immediate pruning. Over the 10-year maintenance cycle, the Forestry Team will schedule routine maintenance on all inventoried Siberian Elms and evaluate available resources to determine opportunities for further removals or replacements based on budget and staffing availability.

Removing these undesirable species is a significant undertaking but also an essential investment in the health of Durango's community forest. While canopy loss may occur during this process, this is an acceptable trade-off when tree removals are paired with suitable mitigation plantings within one to two years.

To manage Siberian Elm removal effectively, the Forestry Team can integrate their removal into the routine maintenance cycle using tools like TreePlotter software. Instead of performing routine pruning on these trees, the City can strategically schedule a manageable number of removals annually. For example:

- Removing 75 trees per year would eliminate all 750 inventoried Siberian Elms within 10 years.
- Removing 100 trees per year would reduce the timeline to approximately 7.5 years.

Given the importance of establishing a routine maintenance cycle and the City's resource limitations, the Forestry Team should prioritize building capacity over the first three years of the Plan. Efforts should focus on routine maintenance, citizen science initiatives, and community education on managing invasive species on private property.

It is important to recognize that full eradication of Siberian Elm and other invasive species is unlikely due to their vigor and rapid growth. As mature trees are removed, new sprouts, seedlings, and suckers will emerge. To address this, the City should consider the selective use of herbicides where appropriate and incorporate principles of Integrated Pest Management (IPM) to mitigate regrowth effectively. While complete eradication may not be possible, every effort to remove invasive species and replace them with suitable plantings will contribute to a healthier, more sustainable community forest and urban ecosystem. By balancing removals, mitigation plantings, and community engagement, Durango can work toward reducing the long-term impact of invasive species while maintaining a thriving community forest.

Pests and Disease

Durango's Community Forest Management Plan (CFMP) places a strong emphasis on proactive tree pest and disease management to ensure the long-term health, growth, and sustainability of the urban canopy. Both native and invasive pests and diseases pose significant risks by directly causing tree mortality or weakening trees, leaving them vulnerable to other stressors such as drought, poor soils, or storm damage.

A key component of the CFMP is the development of a Tree Pest and Disease Management Plan, which is grounded in the principles of Integrated Pest Management (IPM). This comprehensive, sustainable approach prioritizes tree health while minimizing pesticide use. The IPM framework considers pest life cycles, ecological interactions, and applies a range of techniques—biological control, habitat manipulation, cultural practice adjustments, and the use of pest-resistant species—to address pest damage economically and with minimal risks to public health, property, and the environment. Chemical treatments, when necessary, are applied conservatively, guided by monitoring and adherence to environmental standards. The plan emphasizes flexibility to adapt to changing pest dynamics, ensuring a resilient community forest while fostering biodiversity and reducing reliance on chemical interventions.

Many municipalities, due to resource and budget constraints, often respond reactively to pest and disease outbreaks rather than proactively preventing them. However, innovative programs like Westminster, Colorado's Save-Your-Ash program demonstrate how grant funding and community investment can shift this paradigm. Westminster's program identified approximately 3,000 privately managed ash trees worth

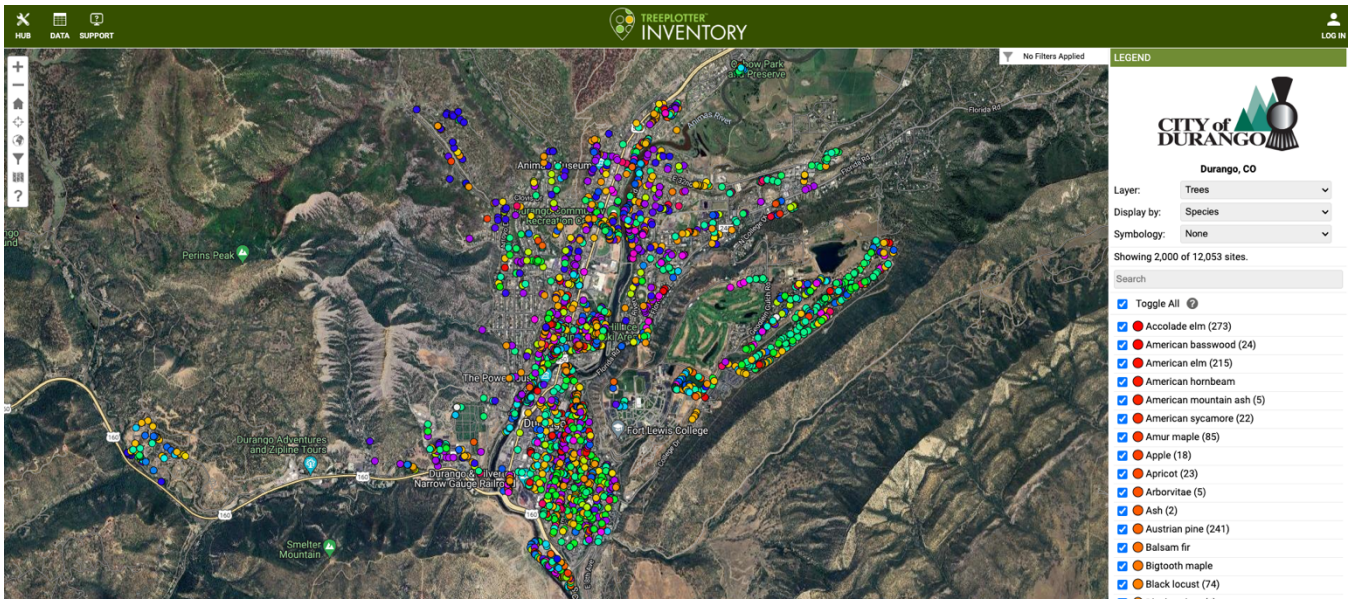
preserving and provided residents with a one-time preventative treatment at no cost to protect against emerald ash borer (EAB).

Durango could adopt a similar model tailored to its needs:

- Honeylocust Protection: Provide preventative treatments for honeylocust trees to guard against honeylocust borer infestations.
- Pine and Spruce Management: Offer targeted treatments during years of high beetle populations to protect key species.
- Ash Tree Strategy: As EAB has not yet reached Durango, the City could proactively reduce its impact by implementing a program to remove ash trees in poor condition, reducing the food source for potential infestations. This could be paired with cost-share incentives to plant suitable replacement trees, ensuring both pest mitigation and canopy recovery.

Implementing these strategies requires significant community participation and access to funding sources such as grants and partnerships. By fostering programs that engage residents, Durango can mitigate the risks of invasive pests like EAB while protecting its community forest. These initiatives demonstrate a strategic investment in tree health, resilience, and community stewardship, ensuring Durango's community forest remains a valuable, sustainable resource for future generations.

TREEPLOTTER



As part of the inventory project, the City of Durango received a one-year subscription to TreePlotter, a GIS-based tree management software that enhances efficiency and strategic planning for community forest management. TreePlotter allows staff to maintain accurate, real-time tree inventory data, track work history, prioritize tasks, and plan maintenance effectively. By using mobile devices like tablets or phones, staff can update inventory information in the field, reducing the need for costly, full-scale inventory updates in the future.

TreePlotter offers features such as interactive dashboards, work order management, and advanced filtering tools, allowing the City to prioritize maintenance, identify high-risk trees, and plan pruning and removals systematically. For example, Basalt, Colorado successfully utilized TreePlotter to monitor ash tree treatments, plan progressive tree removals, and streamline communication with contractors and the public. Similarly, Durango can leverage TreePlotter to create manageable maintenance zones, track work completed, and schedule priority tasks efficiently.

The software can also serve as a platform for community engagement and transparency. By adding QR tags to new plantings or high-priority trees, residents can learn about the tree's maintenance status and

benefits, fostering a stronger connection to the community forest. TreePlotter's capabilities for sharing data with stakeholders, such as City Council or engineering departments, also ensure better alignment of tree management with city infrastructure projects.

To maximize TreePlotter's value and build capacity, the City should:

- Fully integrate TreePlotter into daily operations, requiring all fieldwork to include real-time data updates.
- Use TreePlotter's filtering tools to focus resources on high-priority tree removals and pruning tasks.
- Establish maintenance zones and schedules to streamline workflows and enable contractors to efficiently support in-house teams.
- Leverage TreePlotter for community outreach by tagging trees and sharing maintenance updates, fostering awareness and engagement.
- Consider extending the TreePlotter subscription to ensure continued access to its powerful tools and data insights.

By incorporating TreePlotter into the Community Forest Management Plan, Durango can enhance operational efficiency, reduce resource constraints, and strategically prioritize tree maintenance. This approach not only builds capacity but also strengthens long-term resilience and sustainability for the city's community forest.

City Code and Ordinances

Preserving urban and community forests begins with establishing strong policy frameworks. However, when policies are implemented, they are often spread across various sections of municipal codes, creating confusion or frustration during enforcement. Most cities have public tree ordinances that provide protections for public trees and outline penalties for damages, but these ordinances must be regularly reviewed and updated to remain effective.

As cities evolve, so do environmental challenges, development patterns, and climate conditions. Outdated regulations may fail to address modern needs, such as mitigating climate change impacts, managing invasive species, and accommodating urbanization. Regularly reviewing and updating city codes ensures they align with best practices in community forestry, supporting proactive strategies for tree management, protection, and growth.

Updating ordinances also reinforces the goals of the CFMP, promoting proper tree care, safeguarding trees during development, and prioritizing planting in areas where trees provide the most significant benefits. These efforts help preserve essential community forest functions, such as stormwater management, air quality improvement, and urban cooling, while enhancing resilience to environmental challenges. By adapting policies to meet current needs, cities ensure their community forests remain sustainable and valuable for future generations.

Durango has an established process for reviewing and updating municipal codes and ordinances. To further align existing codes with CFMP goals, the City should consider conducting a benchmarking review of tree-related ordinances in other municipalities. This process can help identify best practices and innovative approaches. Benchmarking criteria can be developed internally or with the support of consulting firms experienced in community forestry policy. Based on these findings, the City should draft and implement updates to its ordinances, ensuring they reflect desired outcomes for tree health, protection, and growth.

The City should consider reviewing Sec 26.37 to broaden its interpretation or increase the power of the Department to proactively mitigate pest outbreaks. This could include the authority to mandate the removal of vulnerable or unhealthy trees, such as ash trees in poor condition, to reduce the availability of preferred host species and prevent infestations before they start.

By prioritizing regular updates and leveraging benchmarking insights, the City can build a more robust policy framework that supports a thriving, resilient community forest.

Staffing and Resources for an Aging Community Forest and Increased Demand

Adequate staffing and resources for public tree management are essential to sustaining the quality of service provided by the Forestry Team to the community. Proactive management of public trees requires a trained, qualified, and dedicated team capable of balancing regular pruning cycles, planned removals, new plantings, and emergency responses while addressing customer service needs.

The City of Durango is committed to public health and safety, combating climate change, and advancing environmental justice. The Forestry Team is making commendable efforts to meet growing service demands as Durango's community forest matures, parks expand, and climate-related challenges intensify. While these increasing needs place additional pressure on existing resources, the team continues to manage its responsibilities with dedication, supported by local contract arborist companies. Proactive planning will be essential to address the rising demands and ensure the continued health and sustainability of the city's trees.

This Community Forest Management Plan highlights both the challenges and the successes of Durango's forestry program. With approximately 50% of the average benchmarked public tree population and ~3,000 trees per full-time employee, the City's Forestry Team is operating below optimal efficiency as defined by industry standards (Hauer, et al., 2014). However, Durango boasts an impressive tree equity score, an exceptionally high canopy cover for a semiarid region, and strong relative performance index scores for the top ten most common species—clear indicators of the Forestry Team's exceptional commitment and service. Additionally, the team's popularity among community members reflects their strong engagement and the widespread support they receive from residents. The team's achievements, bolstered by community support, lay a strong foundation for future growth and sustainability.

Meeting CFMP goals and sustaining a healthy community forest will require additional planting, watering, maintenance, engagement, and administrative resources, particularly for public trees. Currently, the Forestry Team includes four full-time employees: an Arborist Supervisor, an Arborist, a Senior Technician, and a Technician. Key tasks such as community engagement and inventory management could require dedicated full-time roles in the future.

Based on the benchmarking results, CFMP goals, and experience of the urban forestry consultants, it is advised that the Forestry Team hire two temporary or seasonal staff members to address peak workloads and increase capacity. Seasonal workers, traditionally hired during the summer, should instead be employed during the winter months to address peak tree work. While unconventional, offering off-season positions has proven successful in comparable communities, such as those in the Roaring Fork Valley. Retaining these three additional positions for at least five years will enable the Forestry Team to meet industry standards, identify operational inefficiencies, and build long-term capacity. For a city the size of Durango, a forestry team of five to six members is recommended as optimal by the consultants.

The Forestry Team must rely on technology, community science, volunteer groups, and private contractors to implement CFMP goals and manage increasing workloads. Concurrently, the City should begin building a case for additional staffing to ensure readiness when hiring opportunities arise. When planning for additional staffing, it is important to account for associated costs such as training, professional development, and maintaining certifications to uphold safety standards and industry best practices.

Looking ahead, the Forestry Team should closely monitor changes in service demands and advocate for budget and staffing adjustments as needed. This includes presenting a clear plan to address future challenges posed by climate change and the growth of the public tree population. With year-round maintenance responsibilities, especially during winter preventative and rotational work, this focused approach will allow the Forestry Team to manage increasing demands more effectively.

Improved Coordination

To implement effective communication and workflow management in community forest management, a structured and collaborative approach is essential. This begins with regular internal meetings to review activities, address challenges, and plan future actions. Clearly defining roles and responsibilities helps streamline communication and ensures all aspects of community forest management are covered, minimizing overlaps and gaps.

Documenting current workflows, such as tree planting, maintenance, data collection, stakeholder engagement, and emergency responses, is crucial. Visual tools like flowcharts and process maps enhance understanding, while a centralized digital information system can store relevant data, such as tree inventories and maintenance schedules, accessible to all team members. Utilizing project management tools improves task tracking and coordination, ensuring all team members are aligned and aware of progress.

Annual workflow assessments help refine processes by integrating technological advancements, best practices, and team feedback. Continuous training on new tools and processes is vital to maintain efficiency. Documenting best practices and lessons learned supports ongoing improvements and knowledge sharing. Additionally, incorporating stakeholder feedback ensures workflows remain effective and aligned with community needs, leading to a more sustainable and adaptive approach to community forest management.

Strengthening and Establishing Partnerships

Effectively managing a community forest requires fostering strong partnerships across the community. Collaborative efforts with residents, businesses, nonprofits, environmental groups, and government agencies are essential for maintaining and expanding the community forest. Engaging the community through volunteer programs, educational initiatives, and feedback opportunities fosters a sense of ownership and stewardship for Durango's green spaces.

Nonprofits, environmental organizations, and government agencies provide critical expertise, resources, funding, and volunteers to support these efforts. Partnerships with educational institutions such as Fort Lewis College, Pueblo Community College, and Colorado State University can enhance community forestry through research and educational programs, creating a culture of learning and innovation. Previous collaborations, such as with the Mountain Studies Institute during the creation of the CFMP, demonstrate the value of these partnerships. Expanding engagement to include private companies and community groups like master gardeners, state agents, extension offices, and private nurseries will strengthen Durango’s forestry efforts.

Durango benefits from a highly engaged and enthusiastic community, as evidenced in recent community engagement meetings and focus groups. The City should capitalize on the momentum generated during the CFMP process by continuing to involve these groups in implementing the Plan’s goals. Empowering

stakeholders to lead specific initiatives not only encourages broader participation but also helps reduce the workload on the forestry team.

Technology and social media are valuable tools for coordinating events, disseminating information, and gathering feedback. Regular meetings and workshops with stakeholders will ensure ongoing communication, while recognizing the contributions of volunteers and partners will sustain motivation and commitment. By nurturing these collaborative relationships, Durango can continue to build a resilient, thriving community forest that benefits all residents.

Grants

Cities should explore grants offered by federal programs, such as those through the U.S. Forest Service and the Environmental Protection Agency, as well as state forestry agencies, private foundations, and nonprofit organizations like the Arbor Day Foundation and American Forests. Online grant databases and local government resources can also help identify relevant funding opportunities.

Grants provide critical resources that can help address funding gaps, support new projects, and improve the long-term sustainability of the Community Forest Program. These funds can be used for activities such as tree planting, urban forestry education, canopy studies, and implementing best practices in forest management. In addition, applying for grants often requires cities to develop clear objectives and measurable outcomes, which can lead to better project planning and accountability.

Building partnerships with community groups, nonprofits, and local businesses can further strengthen grant applications. Collaborative efforts demonstrate widespread community support and shared commitment, making applications more competitive. These partnerships can also provide in-kind contributions, such as volunteer time, outreach efforts, or additional funding, to help meet grant requirements. By leveraging grant opportunities and community collaboration, the Forestry Team can advance its goals, expand its impact, and ensure the Community Forest Program remains a valuable asset to residents.

Community Engagement

The City of Durango and its Forestry Team actively engage with the community through website content, social media messaging, press releases and news articles, and by extending outreach through community partners' networks. The following strategy is provided for the Forestry Team to review and adapt community engagement efforts to support the implementation of the CFMP.

There are multiple ways to engage the public to improve the care of and expanse of local tree canopy. First, topics or messages must be defined, prioritized, and limited in number. More effective communication occurs through choosing a few strong messages and repeating them over and over. After messages are chosen, avenues of targeted communication to deliver those messages can be determined and implemented. Important topics and messages that should be considered for Durango are as follows:

Messaging

- **Current Canopy Extent and Value of Durango's Trees.** The message should present the current canopy level and benefits the canopy (and public trees) provide. This is typically the first message to send out to the public, as all other messages should connect back to this one. This can also be a way to "roll out" the Community Forest Management Plan to the public. Include information such as why Durango needs tree canopy, what the current canopy level is, and the plans to improve the management of the trees that comprise the canopy. Educating local business owners on the impact that a forested commercial district can have on sales and educating property owners about the impact that trees have on property values are other useful methods for boosting the desire for increased canopy along main thoroughfares and neighborhood streets while also engaging the public. The important value of mature trees could also be highlighted, as people often do not realize that the large tree they have is a value to their property, the community, wildlife, and the environment.

- **How You Can Get Involved.** What are the next steps you want people to take? The City should decide the answer and insert this "ask" in every outreach piece or effort. The City should consider offering tree giveaways (such as seedlings, saplings, or small nursery stock) at Arbor Day and related events for people to plant on private property. Another opportunity for getting the community involved is to increase awareness of the City's Heritage and Champion Trees. Lastly, citizens can donate funds or volunteer at a tree planting event.
- **Tree Threats.** Public and private trees can die, decline, or become safety risks because of insect and disease infestation as well as inadequate maintenance. With education, the residents of Durango can become aware of the common threats to the tree canopy and what they can do to help. The City should provide education on existing tree pest and disease concerns and what the City is doing about these threats on public land, and options for management on their own land. Since the majority of the trees that comprise the city's urban tree canopy are on private property, it is vital for the City to educate the public on how to detect insect and disease threats, provide information about management and treatment options, and relay the importance of reforestation in the event trees are removed. Informing residents about tree removals and other significant tree work is essential for maintaining the City's relationship with the community. When an established public tree must be removed, the City should begin notifying abutting or adjacent property owners of necessary removals. Consistent and transparent messaging around the cause(s) and reason(s) for removing a public tree— and that the removal is part of a larger, long-term planting strategy in support of the City's canopy cover goal— will build trust and support while reducing staff time in addressing concerns.
- **General Tree Care Education for Property Owners.** There are several actions people take that are detrimental to trees at all stages of life, including improper mulching and pruning. Providing residents with information on tree care can significantly enhance maintenance practices, leading to better tree health and higher survival rates. Some examples include:
    - Demonstrate how to properly mulch a tree. Too often mulch is placed around tree trunks in a "mulch volcano", which is extremely detrimental to the tree. A simple message of how to mulch properly can improve tree health and longevity.
    - Provide guidance on how and when to prune trees. Incorrect pruning can lead to poor tree structure or wounds that may never seal.
    - Explain proper tree planting and tree care techniques. This could be especially helpful for homeowners who are considering planting a tree in their yard but are unsure where to start.
    - Encourage recycling or composting leaves on-site.
    - Encourage water efficient landscaping practices.

Use Multiple Avenues of Communication

There are numerous avenues to convey community forestry messages and accomplishments of the program to the residents, such as:

- **Social Media.** Social media sites such as Facebook, Instagram, TikTok, BlueSky, and X (formerly Twitter) can create buzz and promote involvement in the current community forestry activities occurring locally. To reach even more people, the City should consider coordinating with allied community gardens, non-profits, educational institutions, and business to get messages posted on their social media sites as well.
- **Website.** The City of Durango's Forestry webpage contains important information about the program, including details about tree planting, watering, programs, upcoming events, community forestry best practices, and irrigation and landscape standards, among other things.

The website should be maintained regularly to make sure information is up to date. It is recommended the City add information regarding pests and diseases to the website.

- **Presentations to City leadership and local business and neighborhood groups.** Identify key audiences, partners, and potential champions for the community forestry program. Making short presentations at regular or special meetings where they are relieves individuals from having to go to yet another meeting in the evenings. Initial outreach could be based on letting the audience know about Durango's community forest and the work called for in this Plan. Be sure to have an "ask" at the end of the presentation. What do you want them to do next? This work often unearths new partners and funding sources that can otherwise go untapped.
- **Do a survey.** Once every other year, create a short online survey to identify what community forestry issues people in Durango are concerned about or care about. The survey can also be used to gauge people's reactions to new community forest management procedures and regulations, and their willingness to participate in volunteer work or to donate funds or other resources. Questions about public trees, maintenance responsibility, and tree canopy can be part of the public survey.
- **Cultivate partnerships for communication.** Partnerships can be initiated with organizations that can help promote, enhance, and preserve Durango's community forest. Organizations can include local businesses, local utilities, regional non-profits, homeowner associations, neighborhood associations, and schools and other educational institutions. Other audiences to engage can include youth groups, landscape architect firms, faith-based groups, and nurseries and landscape contractors. Actions that can be taken by each partner should be defined before approaching them for support.
- **Create and publish the Annual Community Forestry Report and Work Plan.** This annual report or state of the community forest should provide highlights from the previous year and the Work Plan should provide goals and actions for the upcoming year. These actions should reflect the goals and strategies in the CFMP and the "How Are We Doing?" section can be utilized to support the reporting and work plans. The reports should include updated tree inventory data, tree planting statistics, key performance indicators and metrics, status of achieving canopy goals and actions in the Plan, and other program information. It should provide information on the number and condition of public trees, as well as maintenance, planting, and management accomplishments. It should also present a summary of the current year's annual work plan and identify emerging issues and budget or resource needs.
- **Add signage to the landscape.** Signs placed in high traffic areas can spark interest in trees and the community forest. Something as simple as species name or a notable fact about a tree can encourage people to learn more and to get more involved. Adding signs identifying various tree species can help the City achieve Arboretum status resulting in greater recognition, funding, and support.

Public Education

Public education is one of the true keys to reaching the goals of a community forestry program. Only by educating the public, City officials, developers, and contractors working within city limits will the City be able to achieve community forest protection and planting goals. Ordinances and guidelines alone will not guarantee success since builders, contractors, and others often have their own priorities and agendas, and trees and ordinances are sometimes viewed as a nuisance with no incentives for tree planting, protection, and preservation.

Cooperation from all concerned parties can be improved by requesting various community stakeholders, such as City Council members and neighborhood groups, to attend educational sessions to learn about

the current state of Durango's community forest, plans for community forest management and planting, and the importance to the future of the community.

To gain support for Durango's Forestry Program, various public outreach campaigns aimed at educating the residents of Durango should be established. Where there is understanding and acceptance of the Forestry Program as a whole, there will be increased support for the planting portion of the program. Based on examples of public relations efforts by community foresters in other communities, the following types of activities are suggested for the City to undertake, adopt, or adapt current efforts:

- Hold a seminar or public meeting to discuss the tree inventory project, its results, and its importance for the city.
- Develop monthly evening or weekend seminars related to tree care and landscaping; bring in guest experts from various disciplines in the green industry.
- Write a monthly "Tree Talk" article for local newspapers or social media.
- Develop a Tree Care door hanger brochure to go to each residence where new trees are planted; educating residents about proper tree care could help eliminate trunk damage and improper mulching and pruning of new trees.
- The City should consider offering free tree seedlings or small nursery stock to community members, modeled after successful programs like the one in Grand Junction, CO. This initiative could be timed around Arbor Day and include educational materials, such as the Tree Care door hanger brochure, attached to each tree, helping to raise awareness about proper tree care and the importance of the community forest.
- Co-host tree planting programs with the local garden club, local non-profits, or groups.
- Embrace story telling within the urban treescape. Connect the trees to the history of the area through complementary art, placards, or signage. Consider establishing tree walks that highlight some of Durango's greatest tree specimens and provide tree identification training.
- Encourage citizen science activities that involve the community forest. For example, the Nature Conservancy's "Healthy Trees Healthy Cities" app can be used to monitor tree health and check trees for pests. Local professors and non-profit groups that work with citizen science may be able to help plan projects and recruit citizen scientists.
- Expand the annual Arbor Day celebration to help it become an even greater community tradition. Expanding programs about planting and pruning trees and including children's programs about trees can help increase public interest in the City's tree programs. Additionally, the City could invite contractors to conduct demonstrations on tree planting, trimming, landscaping, and species selection. Organizers could also set up booths with tree information. Refer to the National Arbor Day Foundation (ArborDay.org) for publications that provide great Arbor Day ideas to assist in planning of this event.

Establish a Tree Stakeholder Group

A dedicated Tree Stakeholder Group, or a similar community-focused group, is vital for supporting the governance and successful implementation of the CFMP. Such a group plays an important role in connecting the Forestry Team with the broader community, ensuring that progress updates, strategies, and goals are effectively communicated and integrated into outreach efforts, educational initiatives, and work plans. This type of partnership fosters greater transparency, community ownership, and proactive involvement in community forestry management.

Such a group could assist in promoting the CFMP by helping to integrate its strategies into community initiatives, providing feedback on ongoing efforts, and mobilizing volunteer support for forestry projects. Engaging an independent advisory group also ensures adaptability and responsiveness to community needs and opportunities, strengthening the overall impact of community forestry efforts.

To enhance the group's effectiveness, the Forestry Team could provide access to resources like Tree Board University (treeboardu.org) and other educational tools to build the members' knowledge and capacity. These resources would enable the group to contribute meaningfully to community forestry efforts while fostering informed leadership and advocacy within the community.

Creating and empowering this independent group is essential to achieving the CFMP's objectives. By building strong community partnerships and leveraging the passion and expertise of residents, the City can ensure the growth and sustainability of its community forest while enhancing the quality of life for all.

Durango Tree Stewards Program

The City should formally establish a Durango Tree Stewards program to enhance community involvement in managing and growing the community forest. This program would provide free education from local arboriculture experts on topics such as tree identification, tree biology, proper tree care, city tree regulations, tree planting, natural area restoration, nursery tree production, and the benefits of trees. Upon completing the training, Tree Stewards would be equipped to share accurate information about trees within their neighborhoods and assist with hands-on community forestry projects. In exchange for their training and education, Tree Stewards could volunteer to conduct tree planting or tree-related education initiatives, with guidance and support from the City's Forestry Team throughout the process.

A Tree Stewards program would also serve as a volunteer opportunity for residents to assist with essential new tree planting and care tasks, including watering, mulching, and structural pruning. Volunteers could be specially trained to care for young trees—generally those less than six inches in diameter—that require specialized care to establish strong, healthy growth. Such care would address issues like codominant leaders, crossing or interfering limbs, and other structural problems that, if uncorrected, can increase risk and liability as the tree grows. Volunteers could also help with critical Plant Health Care (PHC) tasks, such as fertilization, mulching, and pest management, ensuring young trees thrive and contribute to long-term canopy cover goals.

Citizen science can play an integral role in this program by actively engaging residents in the scientific aspects of community forestry. Volunteers could participate in projects such as monitoring tree health, mapping tree canopy cover, and tracking invasive species using tools like i-Tree, Project Budburst, or other established programs. This not only supports data-driven decision-making for the City's Forestry Team but also empowers residents to take ownership of their community forest. Partnering with local schools, universities, and organizations like the Mountain Studies Institute could expand the reach of these initiatives, creating a robust network of engaged citizen scientists. Programs like Trees for Missoula provide an excellent example of how citizen science can strengthen urban forestry efforts.

The Tree Stewards could also assist with broader community forestry efforts, such as organizing Arbor Day and Earth Day events, managing tree-related social media content, updating the tree inventory, and identifying new planting sites. Partnerships with community-based organizations, green industry professionals, youth programs, neighborhood associations, master gardeners, scout troops, church-affiliated groups, and school service programs would further enhance the program's success. Frequent training, mentoring, and coordination would ensure volunteers are well-prepared and effective in their roles, while providing the Forestry Team with much-needed capacity to meet its goals.

By incorporating hands-on activities, citizen science, and community outreach, the Durango Tree Stewards program would foster a sense of stewardship and pride among participants, ensuring the long-term success and sustainability of Durango's community forest. This collaborative effort between the City and its residents would not only enhance the community forest's health and resilience but also create a shared vision for a greener and more vibrant community.

Environmental Justice

The equitable distribution of resources is central to achieving environmental justice, and this CFMP prioritizes ensuring that all residents benefit from a safe, healthy, and sustainable tree canopy. Managing the existing community forest—particularly in public spaces—requires a focus on deferred maintenance as an environmental justice issue. Addressing deferred maintenance reduces safety risks, enhances the resilience of aging trees, and ensures equitable access to the benefits of a healthy canopy across all neighborhoods.

While Durango's tree canopy is relatively well-distributed, disparities remain, particularly in economically disadvantaged neighborhoods where tree canopies are often smaller and less robust. Expanding canopy coverage in these areas requires a thoughtful, community-centered approach that prioritizes ongoing maintenance and long-term sustainability. The City can partner with trusted local organizations, volunteer groups, and residents to help care for newly planted trees and ensure their success. By fostering collaboration and shared responsibility, Durango can bridge resource gaps and strengthen community ownership of the urban forest.

Effective, proactive communication is key to gaining support for the CFMP. Outreach should begin well before planting efforts, include input from trusted community leaders, and ensure materials are accessible, such as being translated into Spanish where appropriate. Involving residents early—whether through feedback on tree species selection, education on tree care, or hands-on participation in planting—builds trust and lasting partnerships. Maintaining this trust requires consistent follow-up to monitor tree health, address concerns, and demonstrate the City's commitment to a healthier, more resilient canopy.

The CFMP embeds environmental justice principles by ensuring the community forest is managed equitably, prioritizing the health and safety of all trees, and addressing disparities in canopy quality. By focusing on proactive maintenance, removing unhealthy or undesirable tree species, and enhancing the quality of the existing canopy, the City ensures that all residents can enjoy the environmental, social, and economic benefits of a thriving urban forest.

By prioritizing maintenance first and building partnerships with communities, the City lays the foundation for equitable, sustainable growth of the canopy. This approach not only enhances the community forest's long-term resilience but also ensures that Durango's urban forest continues to be a shared resource, offering benefits for generations to come.

Engaging Property Owners in Tree Care

In Colorado, an increasing challenge for municipalities and communities is the increase of rental properties where tree care responsibilities are often overlooked or misunderstood. This trend poses significant risks to the health and sustainability of community forests, as trees on these properties may suffer from neglect, improper care, or lack of proactive maintenance.

Collaborating with realtors and real estate companies to provide homebuyers with information on tree care best practices and responsibilities is a practical first step. Additionally, municipalities can use community social media platforms, such as

local rental groups, to distribute educational materials on tree care for property owners and tenants. For example, Glenwood Springs has effectively leveraged such partnerships and outreach strategies to encourage proper tree care practices in similar circumstances. Implementing these quick fixes can help mitigate the problem while broader, systemic solutions are developed.

Community Engagement Recommendations Summary

Community outreach and engagement about the Plan begins with clear messaging and information gathered from the CFMP. To make a greater impact and to fully recognize all communities in Durango, it is recommended the City translate their materials into Spanish and partner with local non-profit community organizations with a mission that supports the community forest. In addition to community partners, establishing a Tree Stakeholder Group could add capacity and create more advocates for the Forestry Team. Lastly, an expanding community of tree stewards that are trained in tree planting and post-planting care will increase the Forestry Team's capacity, support the citywide canopy cover goals, and build support for long-lasting impacts.

However, it's important to underscore that while these enhancements are aspirational, the current focus must be on meeting essential operational goals, such as routine tree maintenance. Any expansion of the program, including these outreach initiatives, is contingent upon a solid foundation, which is presently constrained by staffing limitations. Addressing the staffing needs is critical to laying the groundwork for these additional programs and their potential success.

How Are We Doing?

Assessing Progress

The Community Forest Management Plan equips the City of Durango with a comprehensive framework to measure progress, adapt to changes in the environment, and respond to shifting resources. Each goal in the plan aligns with industry standards, best practices, and stakeholder priorities. The objectives within the plan are designed to improve public tree management and ensure the sustainability of the citywide community forest. As goals are pursued, various metrics should be used to evaluate success, monitor progress, and make necessary adjustments.

It is recommended that the City leverage the expertise of its Forestry Team and form a Tree Stakeholder Group to manage the monitoring of the Plan. This group should work in collaboration with relevant partners to ensure effective execution.

While the CFMP outlines a strategic vision for the city's community forest, the specific actions and strategies for implementation will be determined by the City upon adoption. This will ensure a focused approach to action steps while providing flexibility as the City addresses challenges and opportunities over time. Over time, as the Plan's initial strategies are implemented and its successes demonstrated, opportunities may arise to secure additional funding, partnerships, or staffing to support longer-term actions and expand the impact of the Plan.

Primary Community Forest Benchmark Values to Measure Plan Progress

2020 Urban Tree Canopy (UTC) Cover (Assessed in 2024)	
Tree Equity Score (2023)	99 out of 100
UTC	24%
Public Tree Counts (Inventory as of 2024)	
Total Public Trees (alive and dead)	Total: 12,110 Alive: 12,031 Dead: 79
Total Inventoried Public Tree Planting Sites	751
Tree Benefits (2024 Estimates)	
Citywide (UTC Assessment)	2024: $883,000 (total)
Ecosystem benefits of Public Trees	2024: $820,774 (annual benefits and total carbon storage)
Asset Value of Public Trees	$31.7 million ($2,617 per tree average)
Tree And Budget Distribution (2022)	
Public Trees per Capita	0.30
Budget per Capita	$15.14
Budget per Public Tree (inventoried)	$23.84
Community Forestry Staff (FTE)	4.00 (2024)
Total Public Trees per Staff	3,027 trees for every 1.0 FTE
Management Activities (2024)	
Public Trees Pruned	To be recorded at the end of the year
Public Trees Removed	To be recorded at the end of the year
Public Trees Planted	To be recorded at the end of the year
Number of Volunteers and/or Hours	To be recorded at the end of the year
Urban Forest Audit System (Total Score of 2024): 63%	
Management Policy and Ordinances	75%
Professional Capacity and Training	39%
Funding and Accounting	42%
Decision and Management Authority	63%
Tree-related Inventories	50%
Tree-related Plans	54%
Risk Management	67%
Disaster Planning	29%
Standards and Best Management Practices	68%
Community	83%
Green Asset Management	85%

Public Perception (2024)	
Tree-related priorities	Sustainability and climate resilience
Preference for improving public tree health	Maintain trees for health and safety, manage harmful tree pests and diseases, and remove and replace invasive species to promote a resilient and diverse community forest.

Table 8. Durango's primary community forest benchmark values to measure Plan progress.

Staff can measure plan progress by regularly utilizing multiple tools and methods to track changes in key metrics outlined in the CFMP benchmark table. Checking the Tree Equity Score through American Forests provide a snapshot of equity improvements, while periodic updates to the canopy assessment help monitor citywide tree cover changes over time. Maintaining an up-to-date tree inventory is essential, as it allows seamless data export to i-Tree for detailed ecosystem benefits analysis and valuation. Although TreePlotter software offers valuable integration with i-Tree for high-level calculations, directly entering data into i-Tree is recommended for more in-depth and precise analysis of the community forest's performance.

The urban forest audit, provided to the forestry team, serves as a critical tool for assessing changes and evaluating progress. This resource allows the team to compare current conditions with baseline data, identifying areas of improvement or emerging challenges. Engaging the community through surveys provides additional insights into public perception and satisfaction, offering valuable feedback for refining strategies and priorities. Surveys also help track changes in public awareness and involvement in the community forest's care and maintenance.

Additionally, annual management activities, recorded as part of Tree City USA reporting, should be thoroughly analyzed for trends such as increased pruning, decreased removals, or enhanced planting efforts. This analysis not only demonstrates tangible progress but also identifies areas where adjustments may be needed. By continuously monitoring these metrics and comparing them against the established benchmark values, the forestry team can ensure alignment with CFMP goals and communicate measurable achievements to stakeholders. This iterative process fosters accountability, highlights successes, and supports adaptive management to sustain a healthy and resilient community forest.

Report and Revise

Completion of this Plan is a critical step towards meeting the vision for Durango’s community forest. Continual monitoring, analysis, and reporting will help to keep community forest partners involved and focused on accomplishing the actions. Plans are typically revised every 10 to 15 years; hence, the Plan will need formal revision to respond and adapt to changes as they develop. Ideally, revisions to the Plan should align with updates to other key City planning efforts, such as the Comprehensive Plan, Parks Open Space Trails and Recreation Master Plan, Sustainability Plan, Landscape Regulations, and Strategic Plan. This alignment will help ensure cohesion among City initiatives, enabling shared priorities and goals to be integrated effectively. However, even if direct alignment is not feasible, these planning efforts should, at a minimum, reference the most up-to-date version of the CFMP to maintain consistency and ensure forestry goals are reflected across the City’s broader planning framework. Revisions to the Plan should occur with major events, such as newly discovered pests or diseases, changes in program budget and resources, or significant changes to industry standards or legal codes.

The findings from monitoring and evaluating Plan progress as demonstrated in the previous section should be incorporated into an internal and external report(s).

Many cities with a community forest management plan are shifting towards online reporting, making the results of plan implementation and monitoring protocols accessible through interactive platforms on their websites. In addition, the team overseeing the Plan’s implementation in coordination with the community forestry program often prepare an annual report and work plan that is communicated to other City boards, committees, and City council. In addition, other departments are made aware of the report and work plan and are informed of how the work plan aligns with other City priorities and projects.

Monitoring, evaluating, and reporting on Plan progress will inform any necessary changes to the Plan's strategies or actions and should be addressed in a timely manner where appropriate. Completion of this 10-year Plan with a seven-year Public Tree Management Program is a critical step towards meeting the vision for Durango's community forest.

Act and Report	Evaluate and Revise	Act and Report	Evaluate and Revise
Years 1-5	***Year 5***	***Years 6-10***	***Year 10***
Annual Action Plans and Reports	Urban Forest Audit and Plan Amendments	Annual Action Plans and Reports	Urban Forest Audit and Plan Update
Monthly Activities and Annual Report	Updated Benchmarks and Plan Actions	Monthly Activities and Annual Report	Updated Benchmarks and Plan Actions

Figure 35. Example of the plan implementation, evaluation, and revision process.

Conclusion

Trees are an integral part of the community and the ecological systems in which they exist. They provide significant economic, social, and ecological benefits, such as carbon sequestration, reducing heat islands, energy savings, stormwater runoff reduction, improving water quality, enhancing human health and wellness, and increasing property values. Durango has a long-standing legacy of exemplary community forest management, demonstrated by its high canopy coverage, outstanding tree equity, and recognition as a Tree City USA. However, as Durango's community forest ages, maintaining such high standards will require active efforts guided by the Community Forest Management Plan (CFMP).

The changing climate, combined with Colorado's rising cost of living, adds complexity to preserving this green infrastructure. Acting now on the CFMP is essential to ensure that Durango continues to enjoy the many benefits of its trees, while adapting to the future challenges that will test the resilience of the community forest.

The Community Forest Management Plan serves as a strategic roadmap for managing Durango's public trees. This plan outlines the goals, strategies, and actions necessary to preserve the long-term vitality of the community forest. Implementing this plan requires both stewardship and financial resources to begin its execution. Further, it must be institutionalized with a sense of urgency, as the health of the community forest directly impacts the overall wellbeing of Durango.

Durango's leadership clearly understands that a healthy community forest is essential—not a luxury— to guaranteeing the long-term health of its residents and future generations. The community forest is the backbone of the urban ecosystem, just as critical as water, infrastructure, and energy in sustaining healthy communities.

To achieve these goals, the City should consider the following commitments:

- Recognize that the trees within the community forest are essential infrastructure, providing far-reaching benefits beyond aesthetics.
- Manage the community forest as a critical part of Durango's green infrastructure, following best management practices for tree selection, planting, watering, and pruning.
- Protect the community forest from known and future threats, including climate change, pest infestations, and diseases, by promoting policies that enhance its resilience.
- Foster public appreciation of the community forest through educational programs, and support local efforts to plant and maintain trees.
- Engage in long-range planning for the community forest's growth, and ensure that decisions are made inclusively and transparently.

Successful implementation of this Plan will elevate Durango to a higher level of community service, creating a more equitable, sustainable, and thriving community forest that benefits all residents and future generations.

Appendices & References

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Appendix A. 2024 Urban Forest Audit Results

Urban Forest Audit Scoring Key

Not Practiced (0)	In Development (1)	Adopted Practice (2)

Management Policy

Category	Component Evaluated	Description or Criteria for Evaluation
1.00	**Approved Policy Statements**	**Written policy statements approved by a governing body.**
1.01	Climate Change (Sustainability)	Also referred to as Sustainability. With reference to urban trees. Addresses the long-term health and productivity of the natural resource.
1.02	No Net Loss	Can refer to trees, basal area, or canopy.
1.03	Risk Management	Should reference: ANSI A300 Part 9, ISA BMP, and prioritization funding mechanisms.
1.04	Tree Canopy Goals	Overall community/campus goal, or by designated “zone”.
1.05	Tree Protection	Construction and/or landscape maintenance.
1.06	Utility	Utility pruning, planting, and installation policy (e.g. boring vs. trenching).
1.07	Human Health – Physical & Psychological	Recognizes and addresses the human health benefits of the natural resource (e.g., exercise, air quality, stress management, shade). Could also include Urban Heat Island (UHI) policies.
1.08	Wildlife Diversity/Habitat/Protection	Mammals, birds, or reptiles.
1.09	Performance Monitoring	Recognizes the annual or biennial calculation of metrics (e.g. some component of ecosystem services) for the purpose of tracking management performance.
1.10	Ordinance (Private)	Tree protection and management for trees on private property.
1.11	Ordinance (Public)	Tree protection and management for public trees.
1.12	Development Standards	US Green Building Council’s LEED® rating systems (or similar internationally) LEED v4 BD+C (Sustainable Sites) LEED 4 ND (Neighborhood Pattern & Design, Green Infrastructure) ASLA’s SITES® Rating System
1.13	High-Conservation Value Forests	Programs or policies for identification, acquisition, and/or protection of groups of trees or forests that provide unique public benefits.
1.14	Urban Interface (WUI)	Programs or policies that improve management of the urban interface for fire and/or invasive species.

Capacity and Training

Category	Component Evaluated	Description or Criteria for Evaluation
2.00	**Professional Management**	**Provision for professional consultation.**
2.01	Certified Arborist - Staff	International Society of Arboriculture
2.02	Certified Arborist - Contracted	International Society of Arboriculture
2.03	Certified Arborist - Other Resource	International Society of Arboriculture
2.04	Other Professional - Advising/directing UF management	This could be a professional in an allied field like Landscape Architecture.
2.05	Municipal Forestry Institute	Graduate of Society of Municipal Arborist's MFI program or similar
2.06	USFS Urban Forestry Institute or similar	Attendance at USFS UFI or similar
2.07	Campus/city arborist – ISA CA instructor for CEUs	Arborist routinely provides ISA CEU presentations/workshops.
2.08	Tree Board University or similar	On-line training modules from Oregon U&CF for Tree Board/Advisory Council or similar
2.09	Organizational Communications	Process, procedures, and protocol for cross-professional communications within the organization (all departments "touching" trees).

Funding and Accounting

Category	Component Evaluated	Description or Criteria for Evaluation
3.00	**Urban Forestry Budget**	
3.01	Budgeted Annually	Budget authorized/required for tree board, tree maintenance, and/or tree planting.
3.02	Contingency Budget Process	A protocol is in place to prioritize urban forestry management activities during budget shortfalls; e.g. during times of limited funding for: 1) risk management, 2) young tree care, 3) mulching.
3.03	Funding Calculated from Community Attribute	Budget in terms of per capita, per tree, or for performance (e.g. per tree weighted by size class or age.
3.04	Funding Based on Performance Monitoring	Budget connected with/based on ecosystem service (ES) monitoring and performance.
3.05	Urban Forestry Line Item	Is the budget specific to urban forest management?
3.06	Green Asset Accounting	Maintain green infrastructure data in the "unaudited supplementary disclosure of an entity's comprehensive annual financial report (CAFR)". GASB 34 implementation for municipalities.

Authority

Category	Component Evaluated	Description or Criteria for Evaluation
4.00	**Authority**	
4.01	Urban Forest Manager	Professional urban forest manager with authority over the program and day-to-day activity. Including designated budget line item.
4.02	Staff Authority	Designated staff with authority over the program and day-to-day activity. Including designated line item.
4.03	Communication Protocol	Established protocol and mechanism(s) for communication among all members of the urban forest management "community" in your municipality or organization (e.g. manager, department under control, advisory board, finance, field operations, public, NGOs, business community, developers).
4.04	Tree Board, Commission, or Advisory Council	Establishes a board for public participation (advisory or with authority).

Tree-related Inventories

Category	Component Evaluated	Description or Criteria for Evaluation
5.00	**Inventories and Assessments**	
5.01	Canopy Inventory (UTC)	Periodic (≤5 year) canopy inventory and assessment. Public & private.
5.02	Ecosystem Services	Recent (≤5 year) ecosystem services (ES) inventory & assessment? Public: 100% or street trees; Public & Private: Sample; or Campus. Or, are ES calculated annually or biennially based on partial re-inventory and projected growth as a monitoring tool.
5.03	Public Trees 🡻	🡻 Evaluate below 🡻
5.04	Street Trees	Is there a recent (5 year) inventory?
5.05	Parks/Riparian Areas	Is there a recent (5 year) inventory?
5.06	Other Public Trees	Public facility landscaped areas, Industrial parks, green space.
5.07	Continuous inventory on a cycle (≤5 years; i.e. panel)	Partial re-inventory to support continuous forest inventory, growth projections, and the calculation of ecosystem services for the purpose of long-term monitoring of urban forest management performance (e.g. carbon or leaf surface).
5.08	Private Trees 🡻	🡻 Evaluate below 🡻
5.09	Campus (Educational)	Is there a recent (5 year) inventory?
5.10	Corporate	Is there a recent (5 year) inventory?
5.11	Other Private Property	Is there a recent (5 year) inventory?
5.12	Continuous inventory on a cycle (≤5 years; i.e. panel), inventory software	Partial re-inventory to support continuous forest inventory, growth projections, and the calculation of ecosystem services for the purpose of long-term monitoring of urban forest management performance (e.g. carbon or leaf surface).
5.13	Green Stormwater Infrastructure (GSI)	BMP stormwater mitigation practices and locations (e.g. Washington DC)

5.14	Spatial	Inventory data includes Lat/Long (i.e. GIS). Should address the spatial relationship between the natural resource and people (i.e. residents, visitors, activities) that would help manage the resource for benefits associated with proximity (air quality, recreation, stress mitigation, improved educational opportunity).
5.15	Maintenance and Planting Records Maintained	Planting details (nursery, species, size, cost, contractor, etc.) maintained with inventory or as separate database or recordkeeping system. Also pruning and removal histories.

Tree-related Plans

Category	Component Evaluated	Description or Criteria for Evaluation
6.00	**Management Planning Activities**	
6.01	Annual Maintenance Calendar	An annual calendar that defines typical activity by season. To support scheduling.
6.02	Public Trees 🡻	🡻 Evaluate below 🡻
6.03	Street Tree Management	Is there a recent (5 year) plan for street trees?
6.04	Parks/Riparian Area Management	Is there a recent (5 year) plan ?
6.05	Other Public Trees	Public facility landscaped areas, Industrial parks, green space.
6.06	Private Trees 🡻	🡻 Evaluate below 🡻
6.07	Campus (Educational)	Is there a recent (5 year) plan for Campus trees?
6.08	Corporate	Is there a recent (5 year) plan?
6.09	Other Private Property	Is there a recent (5 year) plan?
6.10	Green Infrastructure	Is there a plan for green infrastructure (i.e. nodes & linkages)? Large-scale projects.
6.11	Other Written Plans	Other natural resource plans (e.g. tree canopy). May be a component of another plan.
6.12	Tree Planting	Is there a recent (3 year) tree planting plan?). May be a component of another plan.
6.13	UF as Part of a Comprehensive Plan	Is any UF management plan referenced in the comprehensive plan (i.e. county or municipality) or master plan (i.e. Campus)?
6.14	Urban Forest Planning and Management Criteria and Performance Indicators	Criteria and indicators based on *A Model of Urban Forest Sustainability* (Clark, J.R., Matheny, N.P., Cross, G., and Wake, V. 1997 Journal of Arboriculture.) or on work of W.A. Kenney, P.J.E. van Wassenaer, and A.L. Satel in *Criteria and indicators for strategic urban forest planning and management*. (2011)

Risk Management

Category	Component Evaluated	Description or Criteria for Evaluation
7.00	**Risk Management Activities**	
7.01	TRAQ Attained	At least one staff or consultant is TRAQ.
7.02	Annual Level 1 (ANSI A300 Part 9 & ISA BMP)	All trees in high occupancy areas visited annually.
7.03	Mitigation Prioritization	A protocol for prioritizing mitigation following Level 1 and Level 2 assessments. Reflects the controlling agency's threshold for risk.
7.04	Occupancy Areas Mapped	Has TRAQ staff/consultant discussed/mapped occupancy levels with controlling authority?
7.05	Recordkeeping, Reporting, and Communications	A process has been put in place to maintain records on requests, inspections, evaluations, and mitigation of risk; and on the communications among the managers related to those risk assessments.
7.06	Standard of Care Adopted	Controlling authority has adopted a Standard of Care (SOC) or risk management policy.
7.07	Tree Risk Specification	Is there a written specification that meets requirements of ANSI A300 (Part 9)? And, has it been discussed with the controlling authority with relevance to the controlling authority's threshold for acceptable risk?
7.08	Urban Tree Risk Management	The community has prepared and follows a comprehensive program for urban tree risk management.
7.09	Invasive Management	Plan to address and manage invasive: plants, insects, and disease.

Disaster Planning

Category	Component Evaluated	Description or Criteria for Evaluation
8.00	**Disaster Planning Activities**	
8.01	Response/Recovery Mechanism	Staff knowledge of the municipality's protocol for requesting disaster resources through the county or state with access to mutual aid and EMAC.
8.02	Urban Forestry as part of the County Disaster Plan	The UF plan (8.3) is incorporated into the county/municipal disaster plan; specifically in reference to debris management and risk mitigation.
8.03	Urban Forestry Disaster Plan	A separate/specific plan within the urban forestry management program (i.e. who to call, priorities).
8.04	Pre-disaster Contracts	Contracts are in place for critical needs.
8.05	Mitigation Plan	A mitigation plan has been developed for pre-disaster, recovery, and post-disaster.
8.06	EMAC Mission Ready Packages (MRP)	Municipality has published disaster resources with state EM and participates in inter-state Mutual Aid to support Urban Forest Strike Teams (UFST).
8.07	Urban Forest Strike Team	Participation in the UFST project.

Category	Component Evaluated	Description or Criteria for Evaluation
9.00	**ANSI Standard & BMP Activities**	
9.01	ANSI Standards	Reference and adherence to ANSI Standards for arboricultural practices (A300), safety (Z133), or Nursery Stock (ANSI Z60.1) (any or all).
9.02	Ages/Diameter Distribution	Specific management for the development of an age-diverse tree population
9.03	Arborist Standards	Standards of practice for arborists (i.e. Certification).
9.04	Best Management Practices (BMPs)	Establishes or references tree maintenance BMPs (i.e. written comprehensive standards & standards).
9.05	Fertilization and Mulching	Fertilization or mulching standards required for conserved & planted trees.
9.06	Lightning Protection Systems	BMP written to the ANSI A300 Standard.
9.07	Planting	Planting and transplanting standards required/specified.
9.08	Pruning	Pruning standards required for conserved & planted trees.
9.09	Removal	Infrastructure damage, stump grinding, etc.
9.10	Support Systems (Guying and Bracing)	BMP written to the ANSI A300 Standard.
9.11	Tree Risk	Tree risk assessment procedures; ISA BMP or equivalent.
9.12	Construction Management Standards	Written standards for: tree protection, trenching/boring in CRZs, pre-construction mulching, root or limb pruning, watering (any or all).
9.13	Design Standards	Standards for design that specifically require trees; standards for tree placement (i.e. location), soil treatment, and/or drainage.
9.14	Genus/Species Diversity	Suggests or requires diversity of plant material.
9.15	Green Stormwater Infrastructure (GSI)	BMPs for site level GI practices like rain gardens and swales. Small-scale projects.
9.16	Inventory Data Collection	Community has adopted or developed applicable standards for local urban tree inventory data collection to support QA/QC.
9.17	Minimum Planting Volume	Minimum required root zone volume.
9.18	Minimum Tree Size	Minimum caliper for tree replacements, and/or minimum size of existing trees to receive tree density or canopy credit.
9.19	Root Protection Zone (CRZ)	Defines adequate root protection zone; Critical Root Zone (CRZ).
9.20	Safety	Safety logs, trainings, reference to ANSI Z133 Safety Standard
9.21	Topping	Prohibits topping or other internodal cuts (public & private).
9.22	Tree Species List	Identifies and publishes a list of the most desirable, recommended, and/or preferred species (may include native and non-native species); alternatively, a list of species prohibited.
9.23	Tree Quality Standards	Written standards for tree selection at nursery in addition to Z60.1.
9.24	Utility Right-of-Way (ROW) Management	Requirements for planting, pruning, and/or removal of trees within a utility ROW.

9.25	Urban Agriculture	Enabled urban food forestry practices.
9.26	Wood Utilization	Larger diameter material is processed for wood products.
9.27	Third-party forest products certification compliance	Examples: American Tree Farm System (ATFS), Forest Stewardship Council™ (FSC®).
9.28	Energy generation	Local or regional use of chips or other woody debris for co-generation facilities (an efficient process that uses one fuel to generate two types of energy— electrical and thermal).
9.29	Composting of Leaf and/or Other Woody Debris	Leaves and small woody debris are captured and used on-site or processed by someone by composting for reuse.
9.30	Watering Standards	

Community

Category	Component Evaluated	Description or Criteria for Evaluation
10.00	**Activities that Build Community**	
10.01	Social Media Website or Similar	Does your community/campus use social media platforms or similar to document and publicize your urban forestry program, activity, or events?
10.02	Education	The urban forest is used as an educational laboratory for class activity; Kids in the Woods, PLT, high school, or college level.
10.03	Private Property Tree Program	Does your community sponsor this program locally?
10.04	Public-facing Tree Inventory and Management Software	Public access to the community tree resource via an on-line mapping program (i.e. any Web Map Service; WMS).
10.05	Public Perception	Is public management consistent with private property requirements for tree protections and care? Does the Campus/public tree management reflect neighborhood norms?
10.06	Recognition Programs	Programs that raise awareness of trees or that use trees to connect the community to significant events or activities.
10.07	Arbor Day Celebration	Whether or not associated with Tree City USA.
10.08	Arboretum designation	Internal or third party arboretum designation.
10.09	Significant trees	For example: size, history.
10.10	Memorial/Honorarium	Tree planting or tree care programs than honor/memorialize individuals, organizations, or events.
10.11	Social Media	Does your community/campus make use of Twitter, Facebook, Blogs for internal or external outreach?
10.12	Active Communications	Press releases, regular news articles (print), “State of the Urban Forest” reports, periodic analysis of threats and opportunities.
10.13	Tree Care	Are volunteers trained and used for basic tree care (e.g. mulching, pruning, planting).
10.14	Tree Campus USA®, Tree City USA®, Tree Line USA®	Community/campus meets current qualifications for any of these programs.
10.15	Volunteer Opportunities	Ad hoc or scheduled. Any/all age groups. Tree Campus USA student activities.

Category	Component Evaluated	Description or Criteria for Evaluation
11.00	**Observed Outcomes (Activity, Health)**	
11.01	Deadwood	Look for evidence of periodic or ad-hoc deadwood removal (i.e. lack of dead limbs ≥ 2” in the trees or on the ground).
11.02	Genus Diversity	No genera exceed 20% of population; make specific observations for *Acer*, *Quercus*, *Fraxinus, Ulmus* and other local species of concern.
11.03	Mature Tree Care	Mature trees are retained in the landscape, and are of acceptable risk; i.e. veteran tree management.
11.04	Mulching	Evidence of adequate (i.e. spatial extent, depth, and material) roots zone mulching for all age classes.
11.05	Planting Site Volume Optimization	Are species & sites matched for optimization of above ground canopy; right tree in the right spot concept.
11.06	Rooting Volume Optimization	Are species & sites matched for optimization for below ground rooting volume; right tree in the right spot concept.
11.07	Species Diversity	No species/cultivars exceed 10% of population; make specific observations for *Acer*, *Quercus*, *Fraxinus, Ulmus* and other local genera of concern. Also evaluate the role of regionally local native species.
11.08	Soil Compaction	Observe evidence of soil compaction by users or staff during maintenance. Include “desire” lines and construction activity at time of evaluation.
11.09	Tree Health	Rate the overall tree health in all size (age) classes; look for crown dieback, decay, foliage density & color.
11.10	Young Tree Pruning	Look for evidence of periodic (e.g. every 3 years to year 9) structural pruning (e.g. subordination cuts, dominant central leader, co-dominant stems lower that 20’).