



Urban Forestry Management Plan

CITY OF
Grand Junction
COLORADO



Acknowledgements

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Structure

A Valuable Resource	Introduction.....	3	All Hands On Deck	Public Perspectives.....	17
	Grand Junction Tree History.....	4		Stewards and Stakeholders.....	20
	Goals of the Plan.....	5	Reaching Up	Extending Trees' Benefits to All.....	27
	Canopy Conditions.....	6		Investing Water in Shade.....	28
	Plans and Policies.....	8		Diversifying the Canopy.....	30
Value and Services.....	9	Caring for Park and Street Trees.....		31	
				Building Knowledge of Tree Care.....	37
A Fragile Oasis	Drought and Water Scarcity.....	12	Planting and Retaining Trees.....	38	
	Pests and Disease.....	13	Integrating Trees into Decisions.....	41	
	Extreme Weather.....	14	Taking Action	Shovel-Ready Programs.....	42
	Wildfire Risk.....	15			

Introduction

This plan sets a path for the City of Grand Junction and residents in the community to maximize the health of the urban forest. It organizes this pathway around the value of the urban forest and the services it provides.

The plan elaborates on the challenges of tree management in the community, the wide range of people that care for these trees, and the seven goals that must be met to achieve the vision of a robust canopy.

Special attention is given to the Forestry Division, which has primary responsibility for trees on public property. The plan also includes a set of ongoing and new programs, as well as educational tools, to mobilize the community care for trees.



What is the Urban Forest?
All of the trees in Grand Junction make up the urban forest. This ecosystem depends on people for care and serves the public as infrastructure. Water and shade are just the beginning.

Grand Junction Tree History

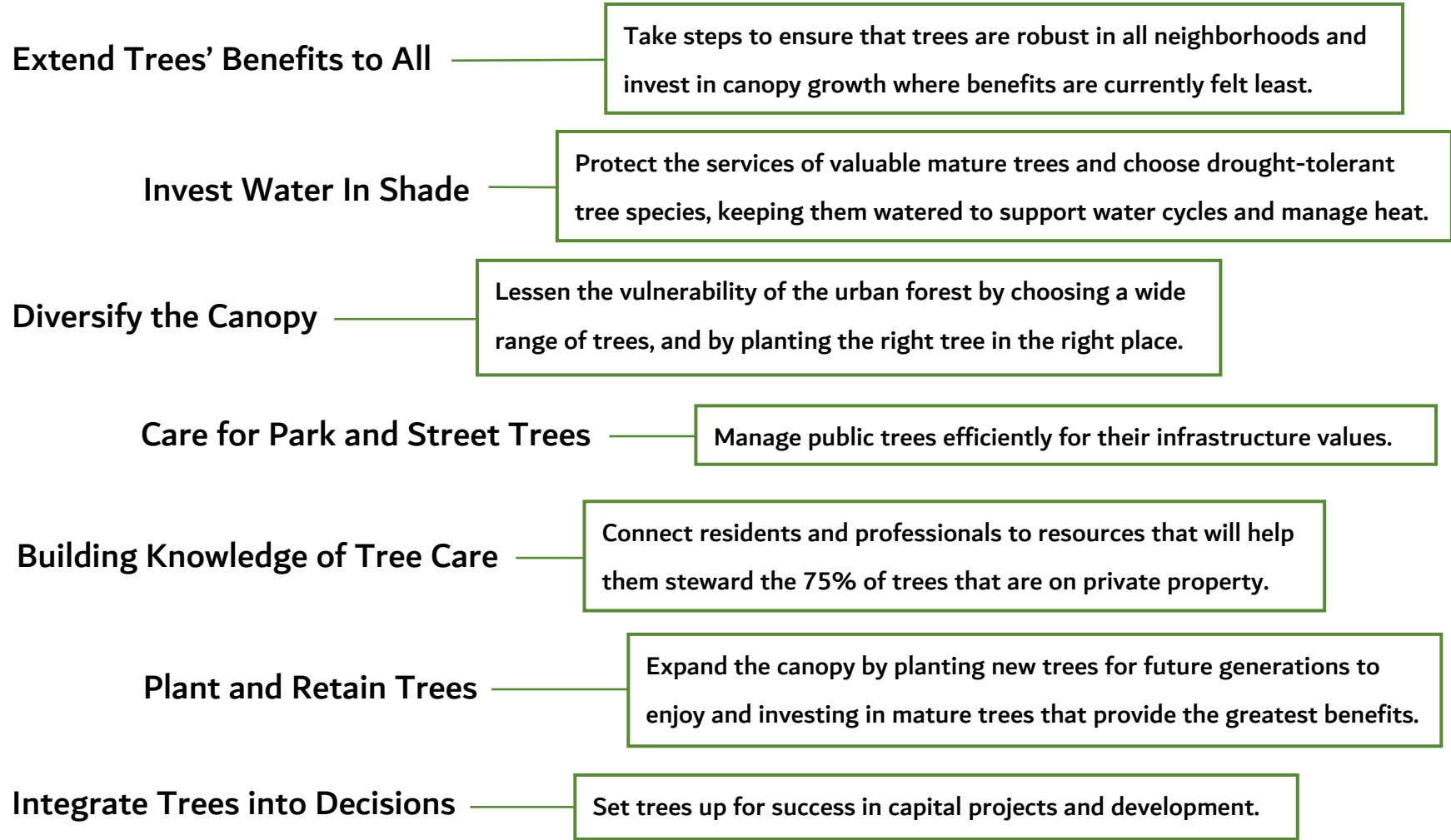
Prior to US settlement of the Grand Valley, the area was largely treeless. Cottonwoods and willows lined the the rivers, and centuries-old junipers and bristle cone pines grew at Colorado National Monument, but most areas were sparsely vegetated. This changed in 1882, when settlers dug the first irrigation canals and created the first tree nursery. By 1900, hundreds of acres of peach, apple, and pear orchards sprang to life; these remain central to Grand Junction's identity. Settlers also planted trees around their homes and lining their streets, setting the stage for today's urban forest.

In Grand Junction's urban areas, many of the oldest trees are found downtown along streets and in Lincoln Park. Grand Junction is also home to some of Colorado's Champion Trees, or the largest tree of a given species in the state. The largest Dawn Redwood, Siberian Elm, Mimosa, and Desert Willow live here, and the state champion Weeping Mulberry is one of the 69 labeled trees at the Lincoln Park Arboretum.



The City of Grand Junction has also received a Tree City USA Award for 40 consecutive years and the National Arbor Foundation Growth Award for 26 years. These achievements reflect the City's commitment to growing and maintaining its canopy cover, amounting to more than 1% of the City's annual budget. The City's agricultural heritage, canals, and the Colorado and Gunnison Rivers have supported the growth of the community's urban forest. However, the community faces current and long-range constraints to water supply as well as an ongoing trend of warming and increasing climate variability.

Goals of the Plan



Canopy Conditions

Grand Junction’s tree canopy shades nearly 13% of City limits and about 11% of the Urban Development Boundary. The canopy is densest in single-family neighborhoods and least in commercial areas. Trees density is also uneven across the city. Neighborhoods have distinct soils, climates, and water access. Over the last century, the City and property owners made different planting and management choices, with differing levels of resources. These factors created our impressive but unevenly distributed canopy.

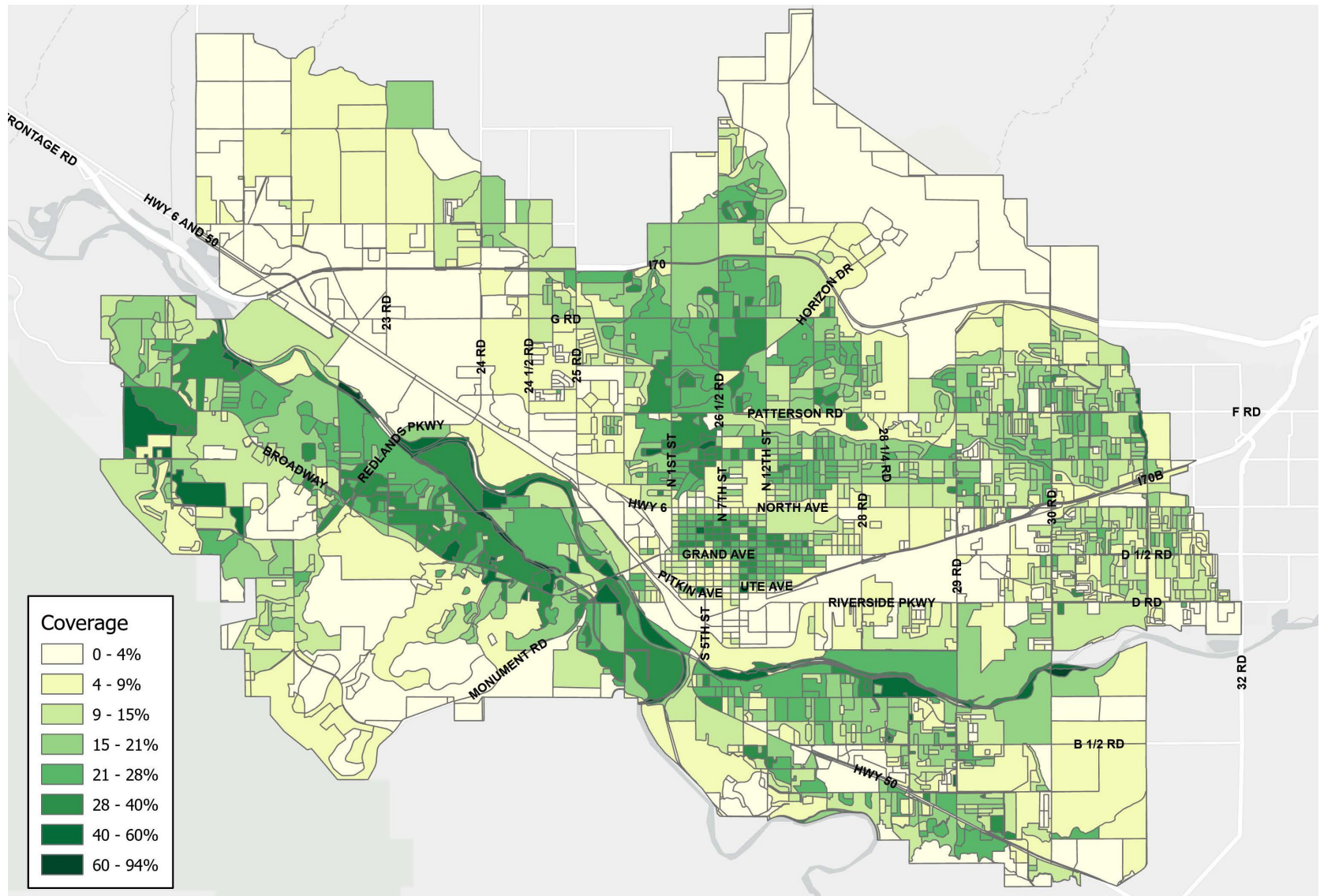
Growth of the canopy is positive nearly citywide. Within the urban development boundary, there was an increase in canopy of 4% from 2011 to 2019, and all City Council Districts saw canopy growth. Some blocks lost substantial numbers of trees, often associated with major redevelopment that removes fewer mature trees with larger numbers of young trees that will replace the loss over time.

Using the Land Use Categories from the Comprehensive Plan,

the best estimate of coverage for different areas of the city is shown in the table below. Cover is highest in residential districts and lowest in commercial and industrial areas, as well as at the Grand Junction Regional Airport.

Land Use Type	Estimated Coverage
Airport	3.5%
Commercial	7.5%
Industrial	4%
Mixed Use	6%
Parks and Open Space	14%
Residential High	12%
Residential Medium	14.5%
Residential Low	16%
Rural Residential	9%
Rights-of-Way (ROW)	9%
City Limits	13%
Urban Development Boundary (UDB)	11%

Current Canopy Cover

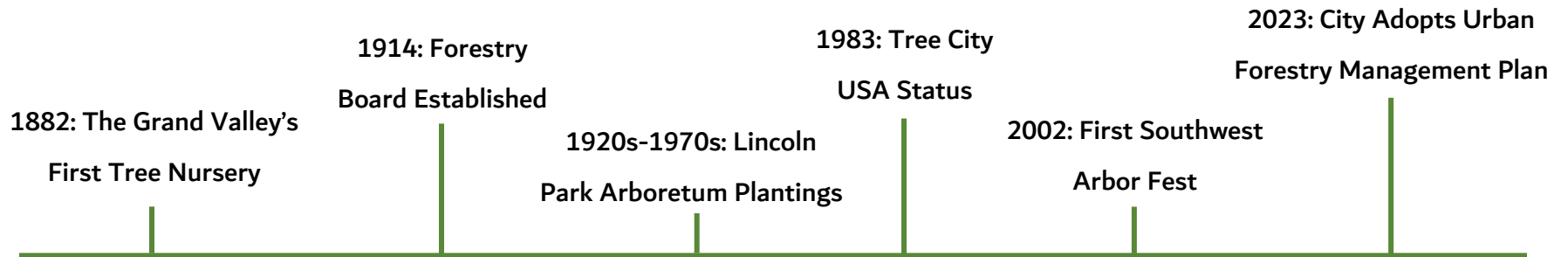


This map shows current canopy cover as of 2019 for all census blocks within the Urban Development Boundary (UDB).

Plans and Policies

All City of Grand Junction’s plans have implications for other plans. This is no exception. The creation of an Urban Forestry Management Plan was prompted by both the 2020 One Grand Junction Comprehensive Plan and the Parks, Recreation, and Open Space Master Plan, which emphasized the need to set a citywide goal for canopy coverage.

This plan should also influence the terms of future planning efforts. For example, future sub-area or neighborhood plans should consider the equitable coverage recommendations of this plan, future development plans can benefit from the resources on water conservation, and many overlaps are anticipated with the forthcoming Sustainability Plan.



Value and Services

Trees generate tremendous value for the community. These values include social, economic, and environmental services. Some of them—such as shade—are readily experienced. Others are harder to discern but equally important to the well-being of the community at large. The boxes below highlight some of the values that trees provide in dollar or more general terms.

People

The urban forest removes 65,000 lbs of particulate matter from the air each year, reducing respiratory illness.

Regular access to trees increases happiness, cognition, and lifespans, while reducing mental illness, asthma, stress, and heart disease.

Planet

Grand Junction's trees sequester 3,927 tons of carbon each year and store 166,000 tons of carbon long-term.

Trees save \$395,000 in annual stormwater infrastructure costs.

Planting strategically at home can save \$100-\$250 in annual energy costs.

Pocketbook

The total replacement value of the urban forest exceeds \$1 billion.

A mid-sized tree can increase the value of a single-family home by \$23,400.

Canopy growth increased residential property values in Grand Junction by \$60 million since 2011.

Shade		Wildlife Habitat		Air Quality		Water Quality		Property Value		Erosion Control
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Protecting Services From Hazards

The values that trees provide are tremendous, and some—like shade—are easily experienced. Most others are experienced as cost savings, so they may not appear on household or government budgets until the services are lost or reduced. Many cities across the country have experienced devastating losses. For example:

Dutch Elm Disease killed 70 million trees nationwide between 1930 and 1950. Many cities lost over half of their canopy. Existing and imminently arriving pests that affect ash trees present a similar risk today (see page 13).

A major drought event can decimate an urban forest in a matter of weeks. The 2011 drought in Texas reduced canopy coverage by between 10% and 40% in major cities.

The derecho storm that struck Cedar Rapids, IA in 2021 eliminated 65% of the canopy, prompting a costly replanting effort.

A 20% canopy loss in Grand Junction—equivalent to all ash trees or one mismanaged extreme drought—could result in a \$200 million loss in structural value. While hazards are unpredictable, many steps can be taken to avoid catastrophic losses. Proactive care, increased diversity, and careful investments of water are the community's best means of protecting this valuable asset.

Green Infrastructure – Like roads and bridges, trees serve as infrastructure. They require investment and maintenance, and we maintain them for specific purposes. Unlike other infrastructure, trees appreciate in value over time, rather than depreciate.

Ecosystem Services – The benefits that trees provide are called ecosystem services. These are functions like shade and stormwater management. They can be totaled in dollar terms or compared to other ways of providing similar services.



A Fragile Oasis

From the top of the Mesa, Mt. Garfield, or the Monument, the Grand Valley appears as a cluster of green in the desert. Walking through any neighborhood, trees are as common as buildings. Drive in any direction and the trees disappear quickly. A century ago, Grand Junction was treeless, too. Early residents diverted water from the rivers to nourish the trees that make Grand Junction the oasis we recognize.

Keeping it that way requires care. In our climate, we cannot plant a tree and walk away. Our urban forest is an ongoing investment, and it must be managed to suit local conditions.

Forestry management in Grand Junction differs from any other city in Colorado or the country. Grand Junction has a unique planting zone. It has microclimates from winds that come out of the canyon. Sun exposure varies, and so do temperatures. At times the valley floor is colder than Orchard Mesa or the Redlands.

Having warmer winters and lots of microclimates means that many trees can succeed in Grand Junction that don't succeed elsewhere in the state. This allows the City and the public to plant a more diverse canopy. But we must also contend with storms, temperature swings, wildfires, and drought.

Grand Junction sits in USDA Hardiness Zone 7, but is separated from most other zone 7 areas in the region. This offers some protection from invasive species, pests, and diseases that might cross the Rocky Mountains or the Colorado Plateau. But they may travel with people, transported firewood or boat hulls. Of current concern, the Emerald Ash Borer and other ash tree pests put about 20% of the urban forest at risk.



Drought and Water Scarcity

Grand Junction contends with a rapidly changing climate and increasing water scarcity. Grand Junction has been in drought more often than not for the last two decades, experiencing three periods of exceptional drought with topsoil losses and increased wildfire risk. The drought from 2019-2022 was one of the most severe on record. Mesa County also warmed faster than 90% of US counties since 2000, at two times the global average rate.

Grand Junction's arid climate poses one of the greatest constraints to the long-term health of the urban forest. Water demand is predicted to rise with growing populations, with growth anticipated to exceed 30% by 2050. The City of Grand Junction's water utility provides water from the Kannah Creek watershed on the Grand Mesa, which is a relatively stable supply. Not all water supplies are equally secure. In 2021, low water conditions required the Ute Water Conservancy District to draw on its water rights from the Colorado River to supply its customers. These local challenges with drought and growth

mirror the challenges faced by communities throughout the Colorado River Basin.

This plan addresses many of the ways that Grand Junction can manage drought risk and invest water in trees to reduce health risks from extreme heat.



Pests and Disease

Trees in Grand Junction must withstand routine problems associated with pests and diseases. Most tree pests affect only certain genera or species of tree. This means that the forest can be protected as a whole by increasing planting diversity. However, for all tree species, the threat of serious damage or mortality from a pest or disease rises rapidly when a tree is stressed. Ensuring that trees have adequate light, water, and pruning at all times offers some of the best protection available.

The Emerald ash borer (*Agrilus planipennis*, or EAB) is a non-native beetle species with severe potential impacts for the urban forest. About 15% of trees in Colorado cities are ash trees, and the proportion of ash in Grand Junction is likely nearer 20%. Several other pests already threaten ash trees. EAB has been confirmed in the Front Range, having reached Boulder first in 2013. EAB will eventually be transmitted to Grand Junction. Delaying this transmission requires that firewood not be transported from areas with EAB exposure. Residents can also treat their ash trees using trunk injections and sprays. The City of Grand Junction has an active program to help residents with mature ash trees to protect their trees, but the planting of new ash trees should also be discouraged.

Pest and Diseases of Concern

- Ash Bark Beetle
- Lilac Ash Borer
- Emerald Ash Borer
- Elm Scale
- Pine Needle Scale
- Leucanium Scale
- Kermes Scale
- Anthracnose
- Ips Bark Beetle
- Spider Mites
- Japanese Beetle



The Emerald Ash Borer Beetle

Extreme Weather

Grand Junction typically experiences at least two extreme snow events in a given year, as well as occasional high winds and cloud-burst rainfall. These events tend to cause damage to trees, especially when snowfalls and winds are poorly timed with tree leaf-out in spring and leaf-drop in fall. When snows accumulate on leafy branches, trees may suffer limb losses or death.

Risk from these extreme weather events is likely to increase as storms become more intense and their timing more erratic. However, residents can prepare for storms and actively manage their trees during heavy snows to reduce risks. Clearing branches of snow when it can be safely done during a storm may be advisable to reduce weight on limbs. However, the best way to prevent winter storm damage is a regular and systematic pruning program that addresses at-risk limbs well in advance of storms.



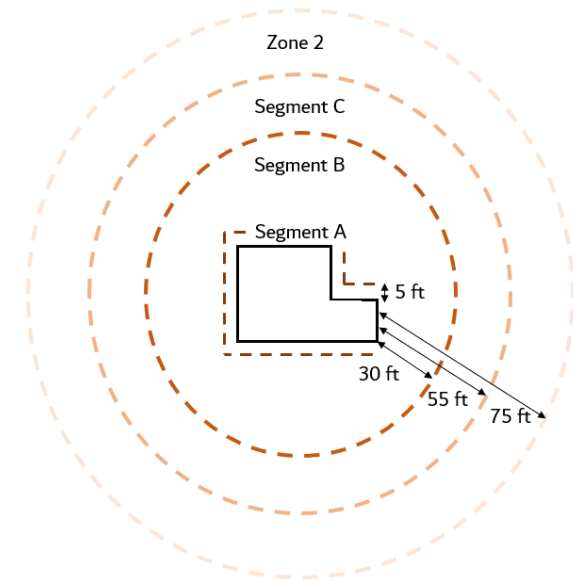
Frost events also pose a risk to local trees, especially fruit trees. A 2020 fall freeze caused devastating losses for peach growers, raising consciousness of this risk throughout the community. Fall and spring freezes pose particular threats for newly-planted trees and tree nurseries. One major mistimed frost threatens to offset the gains of an entire planting season. Thorough organic mulching and watering before a frost or freeze can help to reduce risk. Residents are also advised to arrange for pruning in the spring or early summer, and they should avoid pruning in early fall to minimize impacts to trees entering dormancy.

Wildfire Risk

The 2020 Pine Gulch Fire burned 139,000 acres and came within 18 miles of Grand Junction, reminding us of the threat wildfire poses. According to the Colorado State Forest Service, nearly 6,000 wildfires occur each year in the state. Just 12% of these occur because of lightning; the rest are human-caused. While these wildfires support ecosystem health and create habitat, they can be extremely costly to communities.

Reducing risk relies on good decision-making in wildlands and rural areas, and it requires actions to reduce the vulnerability of homes. This is especially important at the fringes of the city, or the “Wildland-Urban Interface” (WUI). Residents of the Redlands and Orchard Mesa must be extra vigilant, given their proximity to forested areas and open spaces.

The Grand Junction Field Office of the Forest Service provides a range of programs to assist landowners in preparing for wildfires and reducing risks to their property. These programs may be of particular interest to residents in areas of heightened risk. The City of Grand Junction also has regulations to guide residents in making their homes more defensible if threatened by a wildfire. If you live near the edge of the city or near a large, wooded area, consult the City’s regulation.



Protecting Your Home

The City provides guidance for reducing wildfire risks to homes near open spaces in the Municipal Code. As illustrated above, keep the five feet nearest the home free of vegetation and debris. The first 30 feet from the home should be kept clear of dead trees, firewood, and combustible material. In the first 55 feet, trees and groups of shrubs should be spaced by twice their height. Up to 75 feet from the home, all trees should be spaced 5 feet apart or further.

All Hands on Deck

Grand Junction's urban forest exists because generations of residents invested their time and resources into nurturing trees. This kind of infrastructure requires diffuse care, and no single group can perpetuate the canopy on their own. This chapter explores the roles of the many people and organizations that care for trees in Grand Junction. It also reflects the many perspectives of these groups. These needs and opportunities of these groups inform the goals and programs that follow.



The City

The City of Grand Junction—particularly the Forestry Division—takes a leading role in managing trees on public property. The City also galvanizes support for forestry and builds educational partnerships.

Residents and Landowners

Homeowners, renters, businesses, and institutional landowners maintain 75% of the trees in Grand Junction. They have valuable knowledge of the trees in their lives and critical roles in expanding the canopy.

Tree Professionals

Landscaping contractors, arborists, and tree nurseries have tremendous expertise and interact with tens of thousands of trees each year. The canopy depends on their ability to manage evolving tree care challenges.

Public Perspectives

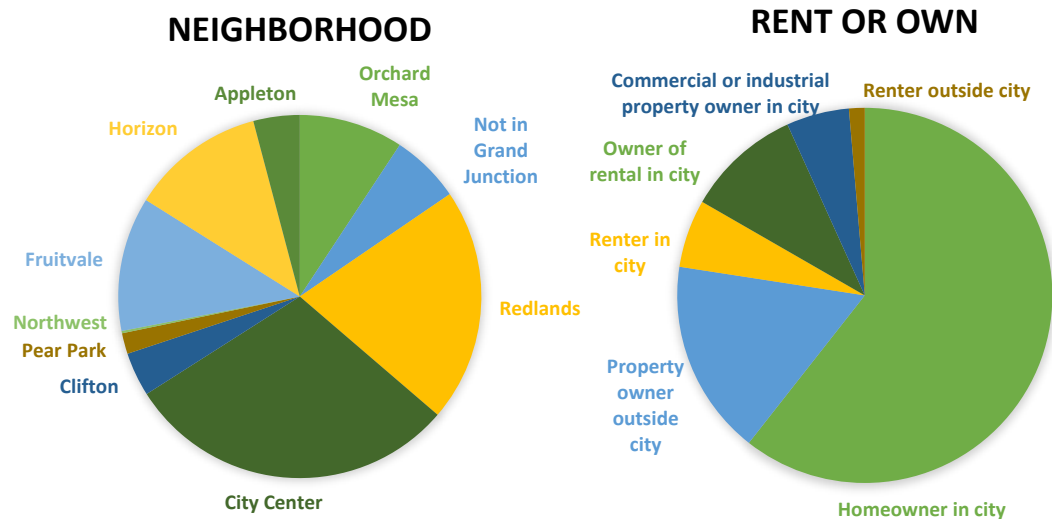
Urban forestry touches the lives of all residents, and each person has different relationships to trees. The City offered several avenues for the public to engage with this topic and to share community’s perceptions, hopes, and concerns for the urban forest.

First, the City released a survey to explore public knowledge and views related to the trees in the community. The survey was available to the public online in English and Spanish from January 1st to 31st, 2023. More than 500 residents responded, making this one of the most successful forestry planning surveys in the US.

The City also hosted open houses to review forestry data goals of this plan, with an in-person workshop on February 23rd, 2023 and a virtual event on February 27th.

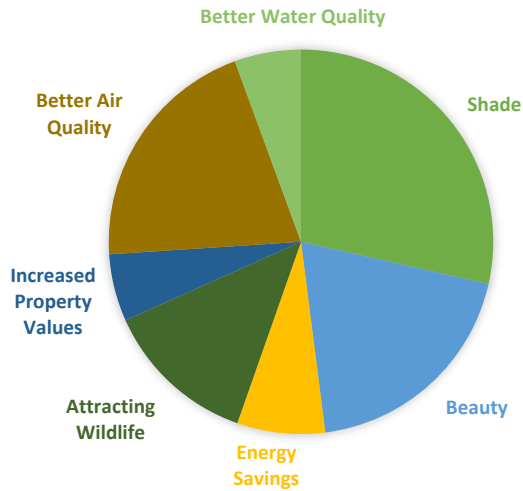
Who responded to the survey?

Residents from all neighborhoods took the survey, but the Redlands and City Center neighborhoods had the highest response rates.

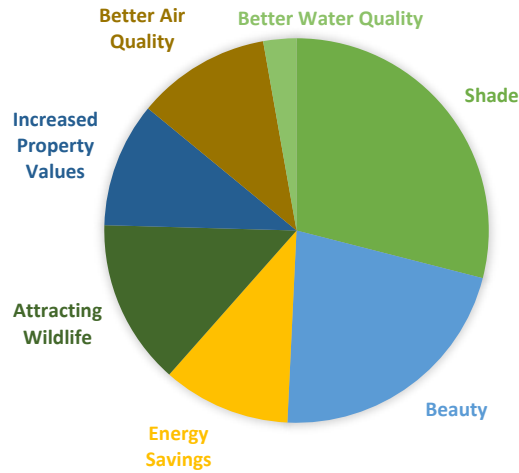


Renters were underrepresented in the survey. Only 9% of respondents rented, whether inside of city limits or beyond. Meanwhile, about 40% of Grand Junction residents rent their homes. Renters likely face unique challenges related to tree care, yet this survey largely captures the experience of homeowners. However, many responding homeowners also own rental properties in the city.

BENEFITS OF PUBLIC TREES



BENEFITS OF PRIVATE TREES

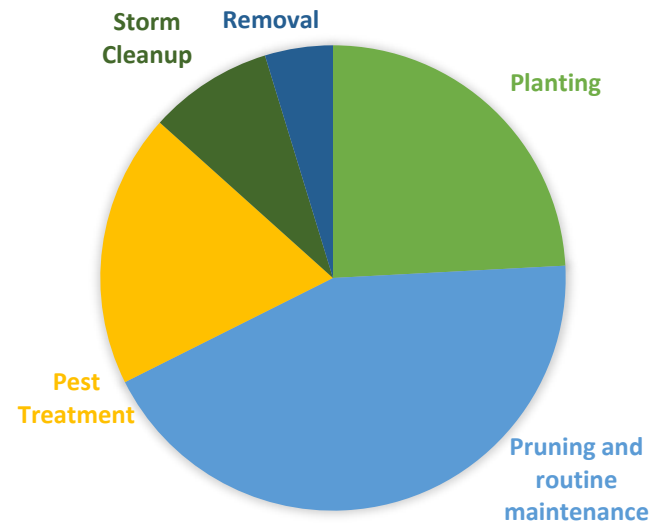


The survey explored which services of the Forestry Division residents appreciate most. The responses show that pruning and treatment matter to residents, suggesting that people want to see continued investment in existing trees. Notably, the survey found that only about half of respondents knew that the city regulates trees as well as cares for them.

The survey sought to understand what benefits of trees residents value most. It asked about perceptions of trees' services on both public and private property, asking residents to choose three benefits each. The results show that residents value all of the services that trees provide, even if to different degrees. Notably, some services with high dollar values—such as water quality services—are perceived as less important by the public.

Whether for public or private trees, a large majority of respondents (87%) included shade as a primary benefit. This makes sense: shade is experienced on a daily basis, and it underlies many other benefits. Notably, air quality was of greater interest for public trees, while increased property values mattered more when considering private trees.

VALUED CITY TREE SERVICES



Words on Water

Many workshop attendees and survey respondents shared thoughts on the complex relationship between trees and water. Comments included:

“We need to be developing different options on watering our street trees!

Gray water systems specifically put in for street trees!”

“Plant only climate tolerant or acclimated varieties.”

“Pay attention to our water, stop the uncontrolled growth in our valley.”

“Many people on my block have replaced their lawns with rock, but this seems to lead to their trees dying right after.”

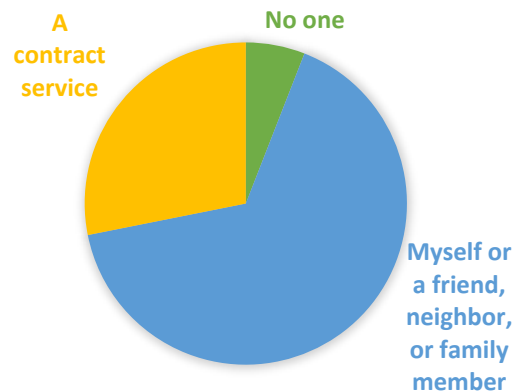
Perceptions of Canopy Extent

The survey asked residents whether they considered the canopy cover in their neighborhood to be adequate. Most residents were either satisfied with the level of forestation or wanted to see the canopy cover expand. This suggests broad support for devoting resources to urban forestry. Just 2% of respondents considered the canopy in their neighborhood to be too extensive.

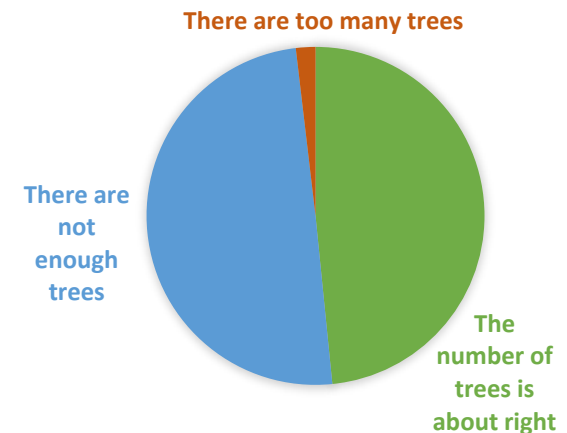
Who Cares for Trees?

Respondents shared information about who cares for the trees at their homes and businesses. The results show a diversity of approaches. Many residents rely on professional help, but most rely on professional help, but most rely on neighbors or their own handiwork. Importantly, many residents do not engage in tree care at all, placing trees at risk.

PRIVATE TREE MAINTENANCE RESPONSIBILITIES



NEIGHBORHOOD CANOPY COVER



Stewards and Stakeholders

Residents and Businesses

Residents are—and will be—the frontline caretakers of trees. The City manages about the same number of trees as businesses do. Homeowners and renters care for as much as the City and businesses combined. One of the City’s best pathways to a strong forest involves setting up residents and businessowners for success.



Licensed Arborists

The City of Grand Junction licenses all arborists that maintain trees in City limits. In 2022, Grand Junction had just 15 certified Licensed Tree Care Providers and four approved Chemical Applicators. These businesses have an outsized impact on the health of the canopy. They are also well-trained professionals. All have passed the International Society of Arborists (ISA) exam. The Forestry Division should support these crews in sharing information, keeping arboriculture practices up to date, and educating the public.

Landscaping Contractors

Dozens of businesses install and care for landscape plants on commercial and residential properties. Some are small businesses with just one or two employees. Others are more established or are linked to nurseries. These professionals make critical choices about irrigation, plant selection, mulching, chemical use, and more. Providing these groups with information and building their support for optimal tree care will ensure that private property throughout the city serves the goals of this plan.

Real Estate

One of the best ways to ensure the viability of Grand Junction's trees is to set them up for success at the time of planting. Real estate developers have the opportunity to do this by perfecting landscape designs and investing in the right trees for the community. In a typical year, private development plants more than ten times as many trees as the City government plants in parks and on streets. Development must follow the City's landscaping rules and regulations, but many go above and beyond in order to create attractive environments.

Real estate agents also have opportunities to help homebuyers understand the value of trees and how to properly care for them. As these professionals interface with residents, they have profound impacts on public knowledge and choices.

CSU Tri-River Area Extension

The Colorado State University Extension office in Grand Junction serves communities in the four counties of Delta, Mesa, Montrose, and Ouray. Extension plays an instrumental role in supporting landowners in and beyond Grand Junction City limits. The office offers annual continuing education courses for licensed pesticide applicators, online land stewardship training, various other workshops for gardeners, and education on disasters and emergency preparedness. Extension also manages the local Master Gardner program. The Extension team routinely responds to resident's calls for expert advice on landscape and tree care, and in this way is a frontline organization for achieving widespread tree-friendly practices in the community.

Homeowners' Associations (HOAs)

Many Homeowners' Associations set requirements for landscaping styles and minimum plantings for the residential properties for which they are in place. Because the City does not regulate single-family residences, HOAs have the potential to expand canopy cover by increasing their tree requirements. HOAs can also influence water use for landscaping by encouraging effective water-wise design and watering frequency.

Forestry Division

Grand Junction's Forestry Division is responsible for the maintenance of public trees in the City of Grand Junction. This team of City staff is dedicated to the protection and resiliency of Grand Junction's urban forest through the planting and management of trees in parks, city facilities, and along street rights-of-ways within city limits. The Forestry Division also aims to help the community understand the importance of trees and the environmental services they provide while maintaining our community's canopy.

Parks and Recreation Department

Beyond the Forestry Division, the broader Parks and Recreation Department manages upkeep and expansion of all City parks, cemeteries, and community facilities. Parks and Recreation staff also manage a variety of recreational programs, in addition to a growing number of arts and culture programs. Guided by the adopted Parks, Recreation, and Open Spaces Master Plan, they aim to provide high quality services to all residents.

Public Works Department

Public Works takes primary responsibility for engineering, transportation, and stormwater, including for planning, design, and oversight of most capital improvements. As a custodian of the street network and stormwater systems, Public Works provides for—and benefits from—many of the services that the urban forest offers.

Community Development Department

Planning and development oversight by the City of Grand Junction is concentrated in the Community Development Department. As the primary interface between real estate development and the City organization, Community Development takes a lead role in promoting successful planting designs for new development. The Department balances objectives related to quality of life, including housing, resource stewardship and active transportation, all of which have consequences for the urban forest.

Colorado State Forest Service

The Colorado State Forest Service maintains a Field Office in Grand Junction. This Field Office has been instrumental in advancing the health and recognition of the urban forest. The Field Office provides technical assistance to residents and businesses, including a range of locally-crafted guides to pruning, planting, and disease monitoring. The Field Office is also closely involved with Grand Junction's Tree City USA redesignation process and Arbor Day celebrations.

School District 51

As one of the largest property owners in City limits, the public school system cares for a large number of trees, all of which shade the daily lives of children in the community. It is also on the frontlines of childhood education, which includes environmental programming. District 51 has taken strides to increase watering efficiency in recent years.

Colorado Parks and Wildlife

Colorado Parks and Wildlife is the state agency charged with managing 42 state parks, over 300 state wildlife areas, and a range of recreational and wildlife programs. Within the City of Grand Junction, CPW manages three sections of the James M. Robb Colorado River State Park, including a large share of the community's riverine trees.

Colorado Mesa University

As the major institution of higher education in Grand Junction, Colorado Mesa University (CMU) supports the community both by stewarding the large share of the urban forest that lives on its campus. CMU also generates talent and interest in forestry and ecology among its students. CMU has been designated as a Tree Campus USA for seven years, thanks to its thriving canopy and 300 annual hours of student volunteer time focused on trees. The CMU grounds maintenance team works with designers as the campus expands to support the diversity of trees on campus. They seek to maintain a vibrant and safe campus canopy through pruning, pest control, and proactive management.



Plant and Tree Nurseries

The four independent plant and tree nurseries in Grand Junction, several irrigation suppliers, and a range of hardware and specialty businesses provide most of the trees that residents and businesses plant in the community. This creates many opportunities to improve the type and diversity of species available, and to provide resources that help residents to make good tree choices.

Forestry Board

The Forestry Board has been active since 1914. Composed of seven board members, this entity is a resource for the community, hosting extensive knowledge about local forestry. The Board reviews qualifications of tree maintenance businesses and issues licenses to people and businesses that wish to perform tree-related services in the City of Grand Junction. The Board also makes recommendations to the City Council when the Council considers rules and regulations pertaining to tree service businesses.

In addition to this core function related to licensing, the Board routinely provides comments and guidance on tree-related decisions by the City. It may collaborate with the Parks and Recreation, Community Development, and Public Works Departments when these parts of the City organization take actions that would affect of public trees.

Mesa County

Mesa County plays an important role in tree management in and around the City of Grand Junction. The County is a landowner within City limits, owns and maintains public trees under their jurisdiction (including at the urban fringe), and is a partner in many contexts such as water conservation and wildfire management. Mesa County does not have staff with equivalent roles to the Grand Junction City Forester or the Forestry Division. Instead, the organization relies on its Public Works Divisions for tree removal.



Natural Areas Non-Profits

A variety of citizen groups, non-profits, and collaboratives engage in forestry-related activities in the community's natural areas. The non-profit Rivers Edge West restores riparian ecosystems through education, collaboration, and technical assistance across the Southwest from their base in Grand Junction. They have been instrumental in controlling invasive tamarisk on the banks of the Colorado and Gunnison Rivers. The organization launched the Desert Rivers Collaborative in 2012 to maintain native river habitats in Mesa and Delta Counties. Separately, the Two Rivers Wildfire Coalition connects local non-profits and governments to reduce wildfire risk. Such organizations play an essential role in ecosystem management.

Reaching Up

By 1900, Grand Junction had planted and irrigated the beginnings of our urban forest. Some of our cottonwoods may be that old, but most trees in the urban forest have been planted and replaced over the last century. This section establishes goals for the urban forest to continue on its trajectory of growth. These goals are not ranked in terms of priority, as all must be met to ensure that the urban forest reaches its potential. The goals are as follows:

- **Extend Trees' Benefits to All**
- **Invest Water in Shade**
- **Diversify the Canopy**
- **Care for Park and Street Trees**

Vision Statement

In 2030, Grand Junction's trees are a defining and valued feature of the city, recognized for their contributions to making Grand Junction a desirable place to live. Residents and the City of Grand Junction value trees for their power to promote well-being, support ecosystem health, and create economic value. The Forestry Division manages its trees as an integral form of infrastructure. Proactive approaches to tree care, planning, and education ensure that the City's canopy grows its benefits to extend equitably across the community.

- **Build Knowledge of Tree Care**
- **Plant and Retain Trees**
- **Integrate Trees into Decisions**

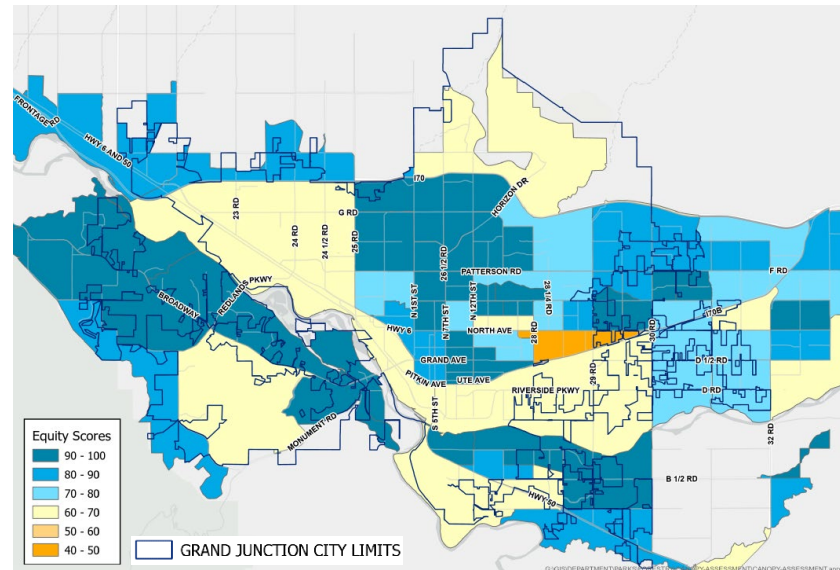
Extending Trees Benefits to All

No city has a perfectly even canopy coverage, but seeking equity in planting and care is a goal for many cities. This is important, because tree canopy cover in US cities tends to be lesser in areas with lower income and more residents of color.

Cities use a statistic called the Tree Equity Score to track how well the benefits of trees are spread across the community. This tool was developed by the non-profit American Forests. To create a single equity score (out of 100), the tool uses eight statistics: existing tree canopy, population density, income, employment, temperature, race, age and health.

Within Grand Junction's City limits, neighborhood tree equity scores range from 100 to 37. Scores are lower along I-70B, with lowest scores for developed areas found in Fruitvale, the City Center, North West Grand Junction, and Orchard Mesa. These areas also had higher numbers of survey respondents that felt canopy coverage should be increased in—suggesting that residents notice the difference and want to address it.

Tree Equity Score by Census Block Group



The Forestry Division can raise these scores by focusing plantings and providing extra support in areas where trees are rare. Because trees create savings and value for adjacent properties, investing in trees for low-income areas will boost household wealth and help solve disparities sustainably.

Investing Water in Shade

Water constraints are changing the way that residents think about what kind of landscape can be sustained into the Grand Valley's future. Trees have a complex relationship to water. They require water, and in return, they lower temperatures and reduce the water demand of other plants. Many species of tree will remain an integral part of a water-wise landscapes in Grand Junction; these trees should be well-selected and cared for to use water efficiently.

Limited water resources have been a factor in Grand Junction's urban forest since the community was founded. Water conservation has become a priority issue for the City of Grand Junction over the course of several decades, especially in the face of growing population, falling precipitation levels, and the increasing frequency of drought.

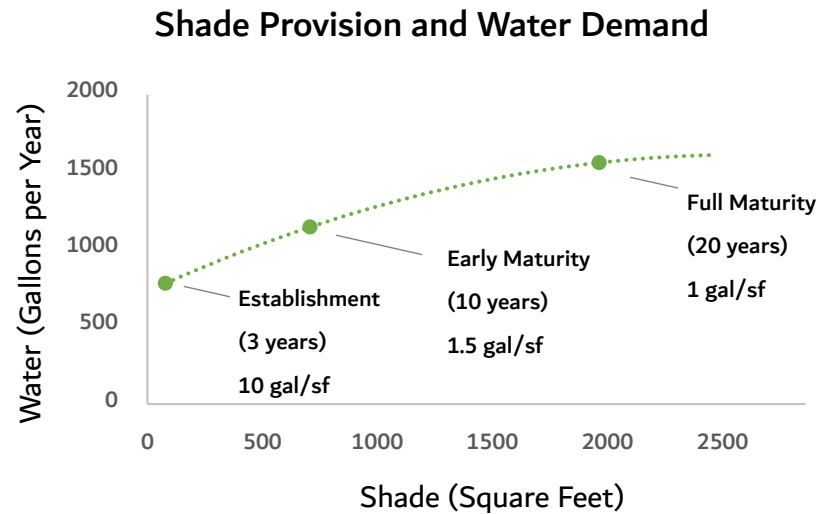
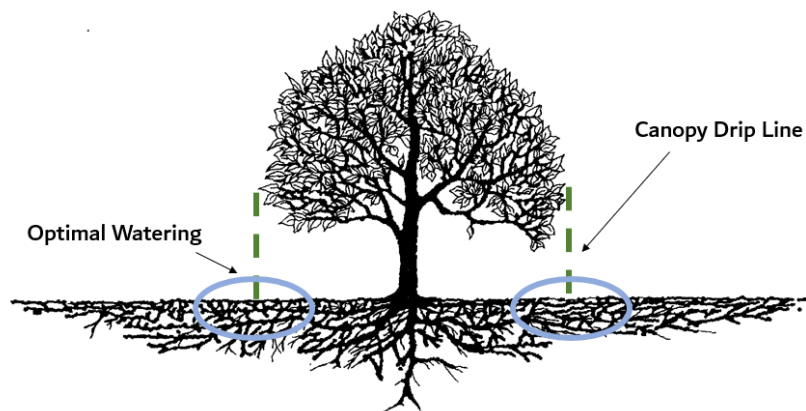
In Grand Junction, most trees that people plant require supplemental watering for their entire lifespans. Yet trees also cool the community and lessen water demand for other

plants through shade and evapotranspiration. Without trees, water consumption for other uses would rise. One goal of this plan is to facilitate a balanced approach to the relationship between trees and water, endeavoring to conserve precious water resources without compromising urban forest health.

To understand the scope of the challenges facing Grand Junction's water resources, consider the overall conditions of the Colorado River Basin. This threatened river contributes up to \$846 billion to the GDP of the Colorado River Basin region and provides water to some 40 million Americans. The Colorado River Basin currently suffers from a prolonged drought—thought to be the worst in some 1,200 years. This drought raises the stakes on forestry management throughout the community and has created a challenging array of consequences for forest managers.

Many decisions can be made at home to invest water more efficiently in shade. For example, residents may consider:

- Installing a graywater collection system;
- Using permeable pavers for driveways and patios;
- Planting trees where water will naturally flow or collect, and grading property for trees before planting;
- Planting trees together with shrubs and water-wise groundcover to optimize shading and watering;
- Xeriscaping correctly to prevent mature tree loss;
- Selecting species with low water demand for planting sites with less access to stormwater; and,
- Watering trees deeply and less often at the dripline, instead of frequent shallow watering at the trunk.



This chart shows how the shade of a tree increases over time relative to its water requirements. The specific numbers are for a tree species with moderate water demand and a 50-foot mature spread, but the trend is true of most shade trees.

Early in a tree's life, it returns one square foot of shade for every ten gallons of water it needs in a year. At full maturity, a typical tree returns 1 square foot of shade for every gallon of water it requires in a year. This means a mature tree is ten times more efficient at shading the city, in terms of water demand.

Diversifying the Canopy

Forest diversity provides visual interest. It also corresponds to the Right Tree, Right Place strategy. The many contexts for planting in the community mean that many trees will have their place.

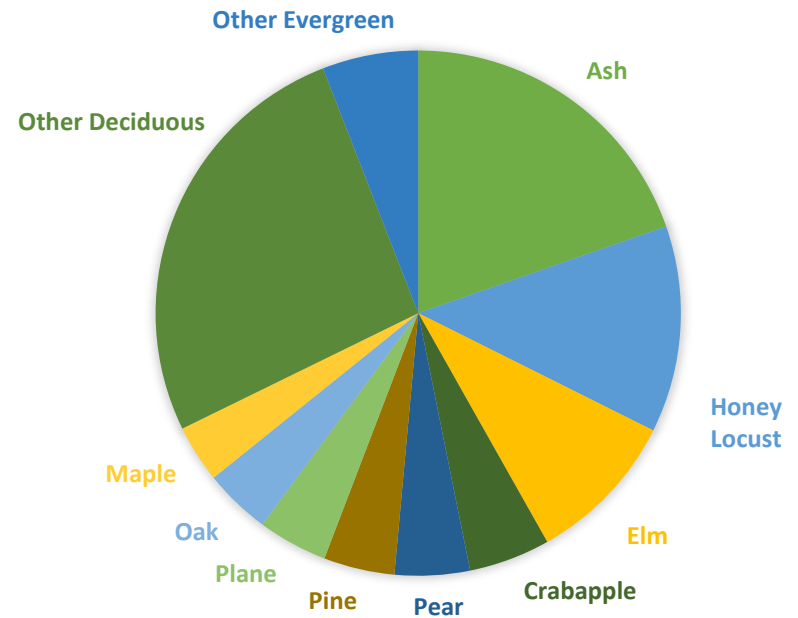
Tree diversity also promotes resilience to hazards. Species react differently to drought, storms, and changing weather patterns. They also suffer from distinct pests and diseases. Ash trees suffer from multiple pests and will be at high mortality risk when Emerald Ash Borer reaches the Grand Valley. Future pests and diseases may affect certain trees in unpredictable ways.

The best way to protect the canopy from future shocks is to plant a wide range of trees. To guide decisions, cities commonly adopt the 10-20-30 rule, planting:

- Up to 10% of any one species
- Up to 20% of any one genus
- Up to 30% of any one family

This rule is reflected in the City of Grand Junction’s landscaping requirements and guides public tree planting. Rebalancing the forest will require slowing the planting of ash, honey locust, and elm.

PUBLIC TREE DIVERSITY



Current Diversity Levels

The City does not have an inventory of private trees, but tracks the trees under Forestry Division care. The makeup of park and street trees shown above reveals that ash comprises a large share, as do ornamental trees like pear and crabapple. About a quarter of species are relatively rare, which is a testament to progress on diversity.

Caring for Park and Street Trees

The Forestry Division cares directly for trees in parks, rights-of-way, cemeteries, and open spaces. The program actively manages 5,000 public space trees and 12,000 street trees. There are an estimated 40,000 additional trees within City natural areas along rivers and drainages and in open spaces.

The Forestry Division acts on limited resources—equipment, staff, and predictive power about risks—that must be allocated to support the City’s goals. The level of service can be increased—and public risks reduced by increasing the efficiency and amount of resources the City dedicates to trees.

The Forestry Division is well-funded, as reflected by the Tree City USA status that requires at least 1% of the budget to serve tree care. The City of Grand Junction adopted a budget of \$253.1 million for 2023, allocating \$16.9 million for Parks and Recreation. This includes over \$900,000 for Forestry Division staff and operations.

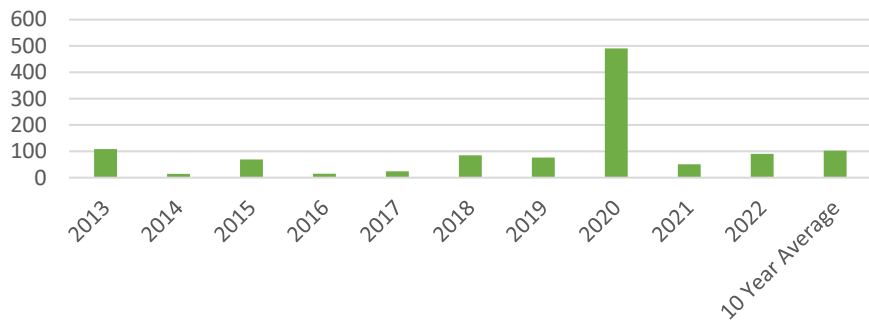
Protecting Grand Junction’s #1 Public Tree – Since 2020, the populations of two native insects—ash bark beetle and lilac ash borer—have grown exponentially, causing city-wide damage to ash trees. This existing pressure on Grand Junction's most common public tree, combined with the threat of emerald ash borer now present along the Front Range, puts this at the top of the list for insect threats.

The Forestry Division has begun a proactive trunk injection treatment program to protect the good health of all good condition ash with a trunk diameter of 13 inches and larger. The City has also launched a private ash treatment cost share program with private property owners to further protect the environmental services provided by this tree species. Continued support of these programs is proactively preparing the community for emerald ash borer response.

The City has also expanded its Forestry Division in recent years. The number of full-time arborists on staff increased from two in 2014 to four in 2019 and up to present. The Forestry Division has also established means of contracting with licensed providers for supplemental tree care, creating flexibility in response. This page addresses funding for contracted services, while the organizational chart and equipment are shown on the next page.

Growing Responsibilities – The City of Grand Junction also grows each year. As land annexes into the City limits, the maintenance needs rise with the number of public trees. Since 2013, the City grew by 100 acres per year. This adds about 150 public trees to the Forestry Division’s inventory annually—most of them recently planted.

Acreage of Annexations by Year

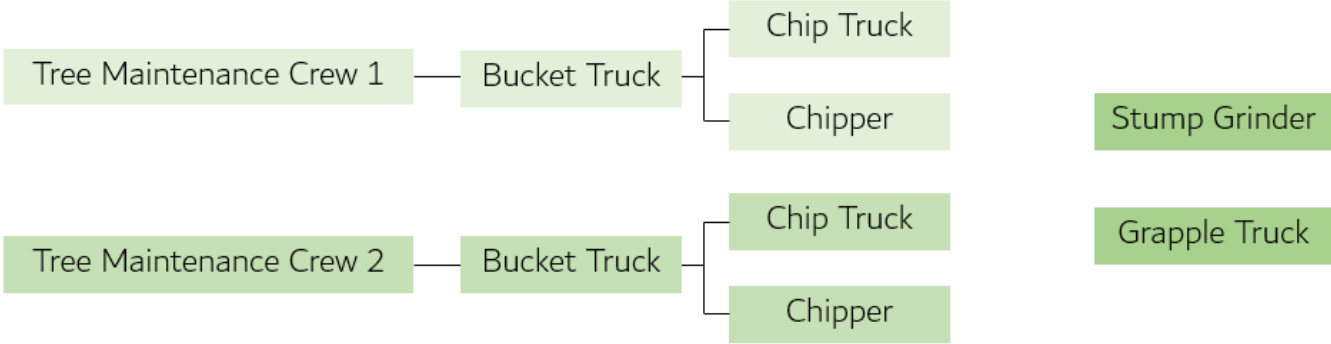
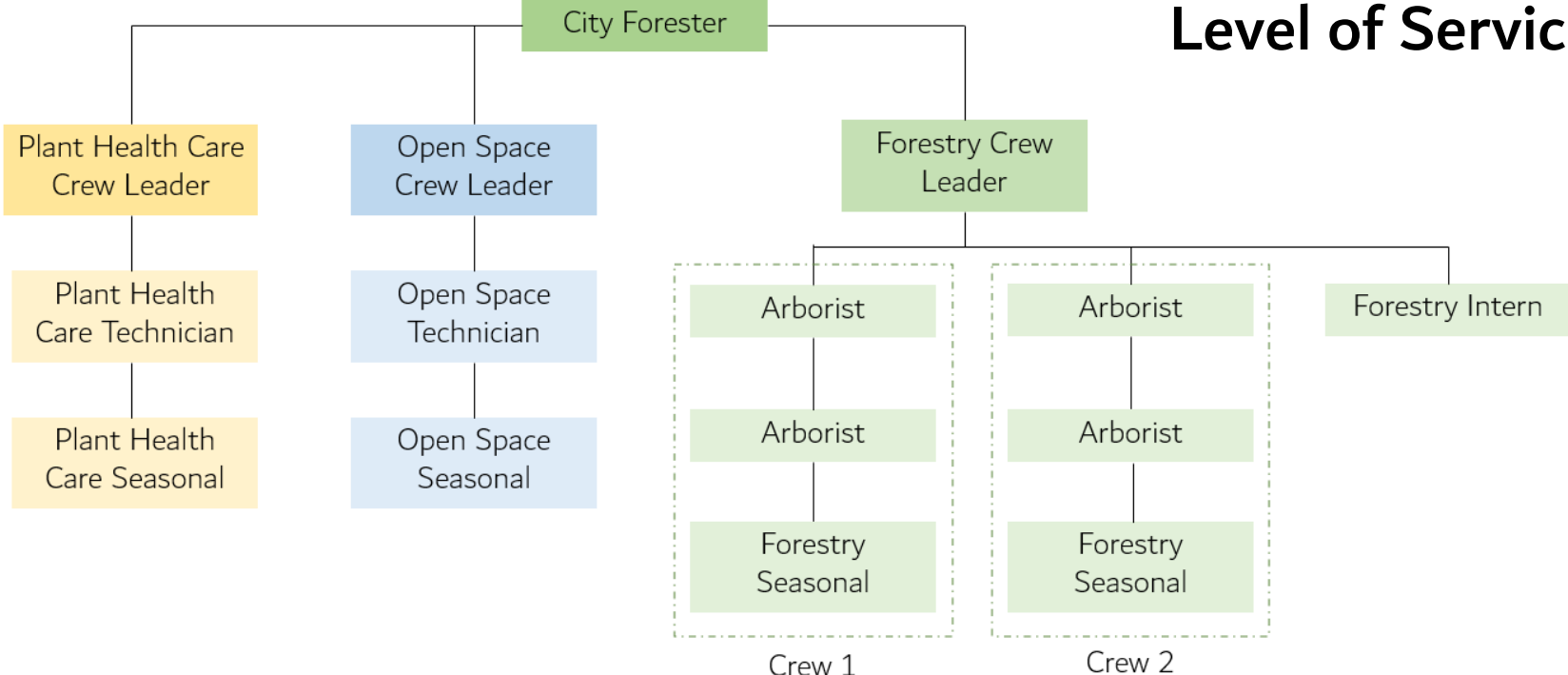


Level of Service

Contracted Services – Many urban forestry programs across the country find success by balancing between in-house staff and the strategic allocation of tree care to local tree services. This option allows cities to avoid significant costs from purchasing equipment and minimizes the number of new full-time staff employed. Contracted services funding has been used by the city of Grand Junction for several years to increase the number of trees maintained annually. Continuing funding and authorization for contracted services would allow for ongoing flexibility.

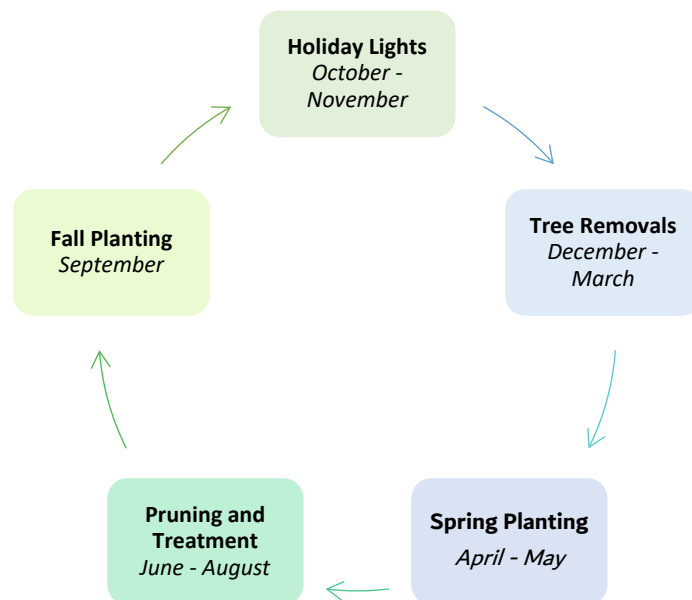
Information Technology – Effective canopy management requires dynamic, high-quality information. In 2020, the Forestry Division began using a software called Lucity that provides data on tree canopy cover and changes across the city. As technology improves, new software options should be evaluated to ensure the most efficient and cost-effective system is being utilized.

Level of Service



Level of Service

With recent increase in full time arborists, the Forestry Division now operates with two tree crews, allowing the program to better manage public work requests. During the pruning and maintenance cycle below, these crews focus their efforts on a series of demands that limit them for taking on a systematic pruning cycle for public trees. However, for best results, trees should be pruned once every five to seven years. As the Forestry Division takes on new staff, equipment, and resources, it may consider new options for proactive care.



Third Request Response Crew - While the City typically responds to all work requests within 12 months, shortening this timeline may be of value. A third work request response crew may continue tree care on a separate cycle, responding to requests while other crews follow the annual cycle.

Proactive Pruning Crew - Many communities establish a cycle of proactive maintenance that addresses each public trees' needs within a defined period (such as the three- and five-year cycles detailed here) on a neighborhood-based rotation. This ensures that trees under the watch of property owners that are unaware of the work request system still receive attention.

Young Tree Care Crew - Some cities focus resources on young trees. The return on investment for proactive pruning and care is much higher than for reactive care at a later stage or when a tree is under stress. This crew would attend to trees up to three years after planting, relying on data about City plantings and right-of-way plantings that accompany development.

Level of Service

The non-profit American Forests recommends that cities fund and staff for tree care at a rate of \$27.41 per tree and one staff per 10,000 trees. Grand Junction performs very well against this metric for staffing, but less well against budget targets. While no Colorado municipality has met these targets in full, they serve as a helpful guide.

	Recommended	Current
Public Trees per Forestry Staff	10,000	9,645
Budget per Public Tree	\$27.41	\$5.29

The difference in budget and staff relates to the potential for Grand Junction to increase its investments in programs to support private property owners in tree care, as well to equipment investments. Equipment is an essential element of forestry crew functionality, and the City would benefit from increased equipment redundancy. For example, the Forestry Division currently operates with two chippers, one

per crew, and frequently see capacity reductions when a chipper is out of service. Adding an additional crew in the future will compound the need for more equipment and training.

The following table provides insight into the investment that would be required to establish a proactive pruning and maintenance cycle as discussed on the previous page. It assumes—based on current costs—that the cost of labor and equipment for each removal is \$900, and the cost to plant a tree is \$700, and that the cost of pruning decreases from \$400 to \$300 as shorter cycles increase efficiencies of scale. Introducing a 3- or 5-year pruning cycle would increase the budgetary requirements of the Forestry Division and result in reduced risk of tree loss, improved canopy health, and increased public safety in parks and along streets.

	Prunings	Removals	Plantings	Pruning Costs	Removal Costs	Planting Costs	Total Cost
9 Year Cycle	2000	300	400	\$800,000	\$270,000	\$280,000	\$1,350,000
5-year Cycle	3400	300	500	\$1,190,000	\$270,000	\$350,000	\$1,810,000
3-year Cycle	5700	300	600	\$1,710,000	\$270,000	\$420,000	\$2,400,000

Chapter 8.32 of the Grand Junction Municipal Code sets laws and regulations for the protection and care of trees on public property. It provides the authority of the City Forester and Forestry Board, sets requirements for tree maintenance businesses, and assigns responsibilities for tree care. Most sections of Chapter 8.32 were last updated in 1994. The need for an update is evident after three decades, as noted as a goal of the Parks, Recreation and Open Space Master Plan.

Maintenance Responsibilities – The Code identifies the City’s responsibility to maintain all trees in parks and City-owned property. The City also takes responsibility for tree planting, trimming, pest control and removal in rights-of-way, but assigns watering responsibility for right-of-way trees to the adjacent property owner. However, the Code provides conflicting guidance as to the identity of right-of-way trees, suggesting that the City shall maintain only those street trees that exist between the street and a detached walk. This conflicts with the current approach of the City, which is to maintain all right-of-way trees, including where a detached walk does not exist. The Code should be clarified to align.

Municipal Code 8.32 - Trees

Tree Removal on Private Property – The Code requires that trees on private property only be removed by a licensed tree maintenance business. However, removals to clear sites new construction are often undertaken unlawfully by businesses without a license. A revision should balance the need to protect the public from unskilled tree work with reasonable accommodations for licensed general contractors. The City should clarify this requirement for development and fire mitigation, working with the Forestry Board to establish a special permitting process.

Enforcement on Failure to Maintain Trees – The Code does not provide an enforcement mechanism related to the loss of public trees due to the failure of an adjacent property owner to water trees. A fine or other mechanism should be established to discourage non-watering of public trees. A code update could provide a structure for transferring responsibility for watering trees located on rights-of-way to the City for qualified property owners based on hardships.

Building Knowledge of Tree Care

The general public stewards far more trees than the Forestry Division and are on the frontlines of forest management. The City and its partners should take action to educate the public about proper tree care. The City should also promote awareness of the values that trees create, because this is a step toward ensuring that these values increase.

Many of the programs recommended by this plan involve education. Building public understanding of trees is a long-term project. It requires early childhood exposure to the value of trees, knowledge of the urban forest's value and how to increase it, and a local workforce with expertise in tree care.

Building knowledge of tree care does not simply require access to existing information. Because all localities have unique climates, tree care knowledge in Grand Junction needs to be generated continually through experimentation and data sharing. Any time the community plants a tree, an opportunity arises to learn about that species and the conditions in which it is planted.

Helpful Resources

Many organizations in the Grand Valley provide resources for residents to improve tree care. Residents can access resources by clicking on the embedded link:

- [Extensive courses with the Tri River Area Master Gardener Program by CSU Extension](#)
- [The CSU Extension Tree and Shrub Guide](#)
- [Gardening guides from CSU Extension](#)
- [The current list tree care providers licensed by the City of Grand Junction](#)
- [The CSU Extension guide for xeriscaping with trees and shrubs in Colorado](#)
- [Resources from Utah State University on Water-Wise Plants for Utah Landscapes, suitable for USDA Zone 7](#)
- [Grand Junction All-Star Trees List](#)

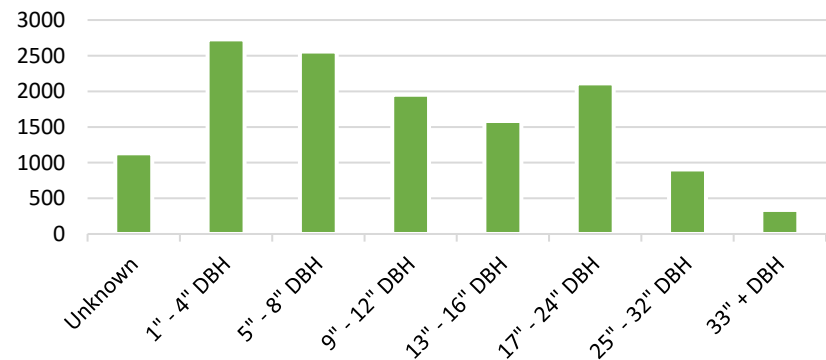
Planting and Retaining Trees

A strong canopy relates closely to urban development. This relationship is highly complex. On one hand, a vast majority of Grand Junction’s existing trees were planted during or after sites were developed for housing or other urban purposes. In this sense, without development, the urban forest would not exist. When agricultural lands develop into urban areas, the tree canopy consistently increases.

However, development—especially redevelopment of existing urban areas—can also lead to the loss of mature trees and their replacement with new trees. This causes temporary decreases in canopy as those trees mature. This poses a challenge as the City and residents seek to maintain a robust canopy at all times. Tree protection during construction was widely supported by survey respondents. 77% of respondents considered sustaining trees during construction to be "Very Important" while only 6% of respondents considered this "Not Important."

Errors in managing trees such as under-watering or improper pruning (known as topping) can lead to the loss of new and mature trees. This phenomenon occurs in many areas of the City. It may stem from lack of education about proper tree care, a lack of resources on the part of those responsible for a tree, or miscommunication about who is responsible. For example, a tree may receive inadequate water because a property owner believes that, because the tree is mature, it will draw adequate water from the soil. This is generally not possible in Grand Junction. These problems must be addressed to limit losses from improper care.

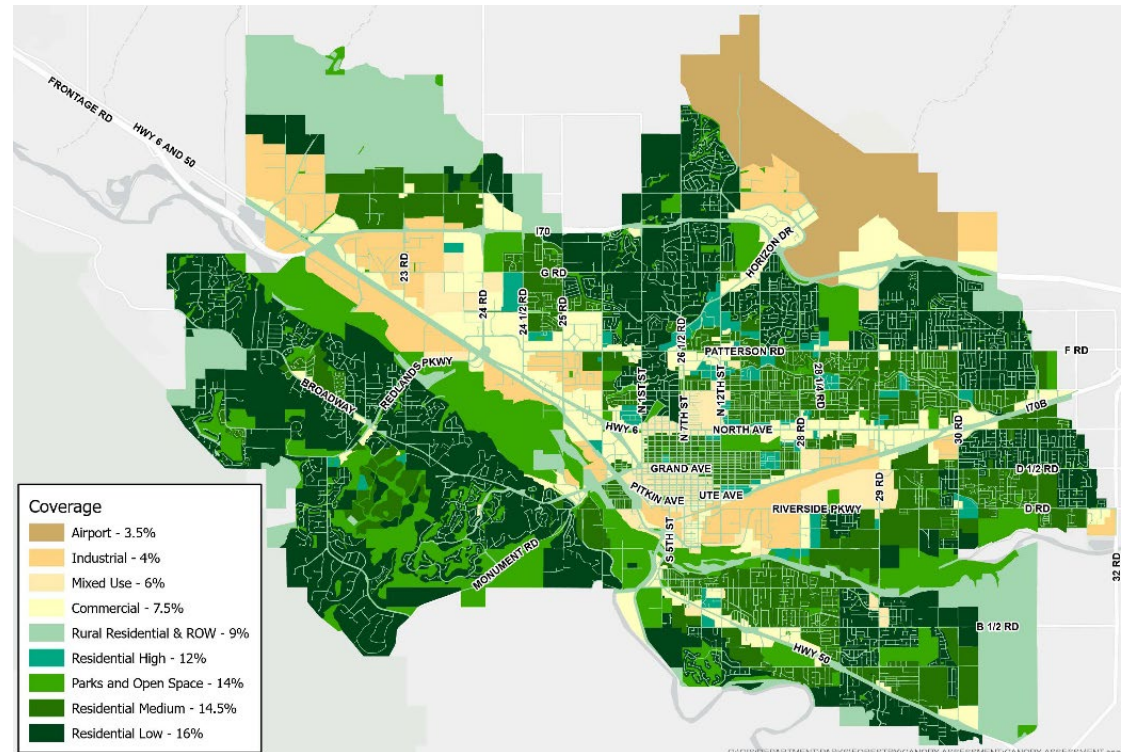
Diameter at Breast Height of Public Trees



Many communities set canopy coverage goals to guide efforts for planting and retaining trees. The non-profit American Forests guides cities to set the right goal for their context. In general, cities are advised to target a 40% canopy coverage, though arid communities like Grand Junction are advised to pursue a 30% goal. Most communities in the region (as shown below) have targeted a more modest increase, or are simply seeking to protect their canopy cover as they densify and manage hazards.

Community	Coverage	Goal
Austin, TX	38%	50%
Boulder, CO	16%	16%
Bozeman, MT	8%	33%
Colorado Springs, CO	17%	20%
Phoenix, AZ	12%	25%
Reno, NV	5%	10%
Tempe, AZ	13%	25%

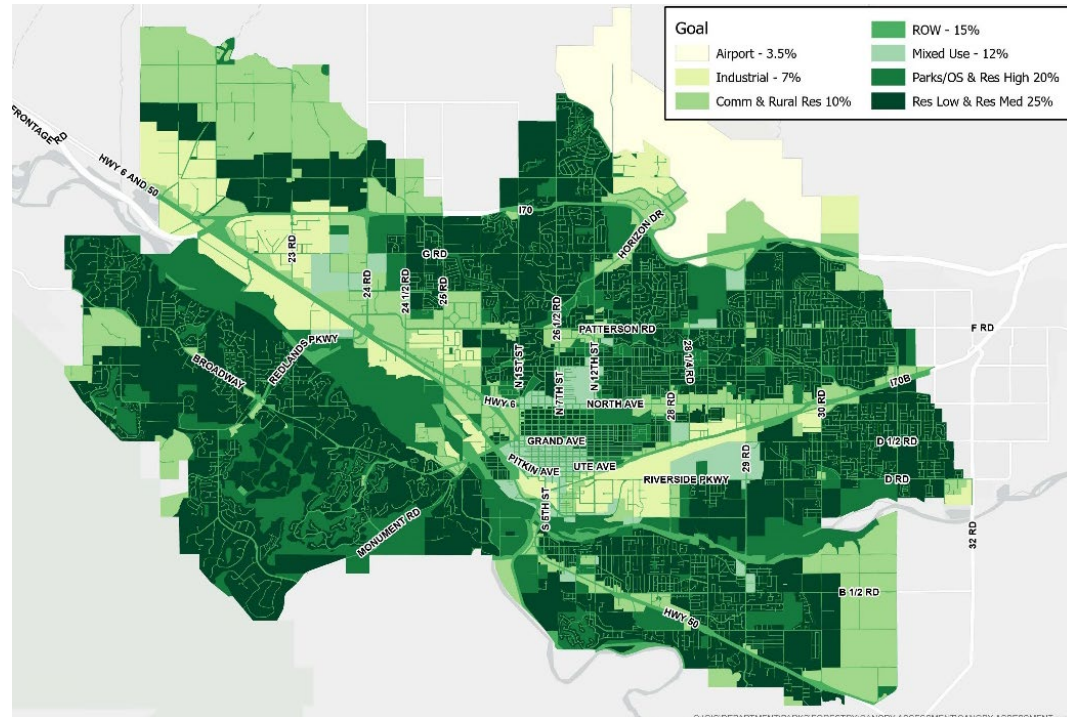
Current Canopy Cover by Land Use



This map translates the canopy coverage shown on page 7 to the Land Use designations of the Comprehensive Plan. This shows how the canopy would look if equitably distributed within each land use, and it can be easily compared to the map of goals on the next page.

Land Use Type	Current	Goal
Airport	3.5%	3.5%
Commercial	7.5%	10%
Industrial	4%	7%
Mixed Use	6%	12%
Parks and Open Space	14%	20%
Residential High	12%	20%
Residential Medium	14.5%	25%
Residential Low	16%	25%
Rural Residential	9%	10%
Rights-of-Way (ROW)	9%	15%
City Limits	13%	18%
UDB	11%	18%

Canopy Cover Goals by Land Use



This plan sets the target for the community to plant and retain trees with a goal of achieving a total canopy cover of 18%. This goal is made up of sub-targets for each Land Use type and corresponds to the different opportunities that each Land Use presents. Achieving this goal requires just a 34% increase within City limits. This would be equivalent of adding one new tree for every three that exist.

Current coverage for the area in the UDB not within City limits is lower, largely because much of this area is open space. Reaching the goal for the UDB as the City grows will require continuing the pattern of care and planting already established in developed areas of the community. Meeting this accessible goal will increase quality of life and infrastructure values of the urban forest.

Integrating Trees into Decisions

City staff and decision-makers should consider the value and health of trees when planning capital projects, development approvals, and more. This requires inter-departmental coordination and stakeholder involvement.

Increasing Internal Coordination on Trees

Public Works, Community Development, and Parks and Recreation have the closest relationships to the urban forest. These staff should coordinate wherever feasible to ensure trees are set up for success. The Forestry Division and Forestry Board were instrumental in developing the recent updates to the City's landscaping regulations for private development, and they should be involved in landscaping plan review where relevant. Similar pathways are available to coordinate on street design and other capital projects with the aim of creating optimal growing conditions. Crucially, the City Forester should be involved during the pre-application process for major development that may impact mature trees.



Decisions at Home

Every resident faces a range of choices about trees. Whether, where, and what trees to plant; how to water; and when to treat or remove a tree with pest or disease problems require forethought and create consequences that last for decades. Residents are encouraged to reach out to the Forestry Division, licensed tree care professionals, and other resources like CSU Extension for support in planning for trees on private property. Residents should also consider the value that trees create when weighing options.

Shovel-Ready Programs

Goals matter only so far as there are pathways to implementing change. This chapter lays out many of the programs that already exist to advance good forestry practices in Grand Junction, as well as programs to pilot and grow. Some are educational, some seek to improve the City’s understanding of the urban forest, and others would directly impact the health of the forest in the short-term. Together, these programs will help the community to reach the 18% canopy cover goal without compromising on water resources or equitable access. To ensure accountability, the Forestry Division should report progress on programs biannually. A new canopy assessment should be performed by 2030 to measure progress against the canopy cover goal.

- Tree City & Tree Campus USA
- Code Enforcement
- Root For Your Ash
- Pest Monitor Network
- Tree Equity Irrigation Program
- Formal Opt-Out for Street Tree Care
- Memorial Tree Program
- Update Municipal Code Chapter 8.32
- Arbor Day
- Lincoln Park Arboretum
- Tree Work Request Response
- Tree-friendly Business Training & Certification
- Winter Storm Messaging
- Bike-Ped Route Forestation
- Track Effects of Significant Tree Regulations
- Drought Preparedness Messaging
- Water-Wise Landscaping Regulations
- Graywater Systems
- Wildfire Risk Education
- Aquaponic Tree Production
- Complete Tree Inventory
- Citizen Forester Program
- Water Conservation Month Messaging
- Early Childhood Education
- Wood Waste Recycling
- Update Hazard Mitigation Plan
- Support HOAs and Neighborhoods to Raise Canopy Standards
- Improved Inventory Management System

- Active Program
- Immediate Impact
- Long-Term Solution

TREE CITY & TREE CAMPUS USA •

Grand Junction became a Tree City USA under the Arbor Day Foundation more than four decades ago. This practice should continue, with annual updates and commitment to meeting the 1% minimum of City budget spent on forestry. Colorado Mesa University achieved its first Tree Campus USA designation in 2014, and continues with annual updates with participation from the Tree Campus Advisory Committee.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

ROOT FOR YOUR ASH •

The City launched the Root For Your Ash program in 2022 to provide preventative treatments for ash trees on private property. In collaboration with T4 Tree Service, a private company, the City signs up residents with qualifying trees for treatment. Costs are split evenly between the city and the resident, with a \$225 minimum fee for the resident and a maximum City contribution of \$500. To qualify for treatment, trees must be:

- on residentially zoned lots;
- 8" in diameter (at a minimum); and
- within the City limits of Grand Junction;
- with clear evidence of stewardship of the tree/surrounding landscape.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

CODE ENFORCEMENT •

Code Enforcement for proper tree care can be leveraged as a means of educating residents. City Code Enforcement officers should be supplied with resources and brochures to offer residents when tree care violations occur. Code Enforcement also serves as the best monitor of tree protection during construction, as required by City code.

Goals: Plant and Retain Trees
Build Knowledge of Tree Care

PEST MONITOR NETWORK •

In 2020, members of the Forestry Board established a monthly meeting with local tree care professionals to share information and experiences related to pests and diseases affecting Grand Junction's trees. This semi-formal convening may benefit from formalization or the institutionalized participation of the City Forester.

Long-term outcomes for the Roundtable may include an alert system for detection of new diseases, including EAB. The City may also support the Roundtable in developing a public map of known pest and disease occurrences. This program can serve as the basis for a broader Integrated Pest Management (IPM) Program in the future.

Goals: Diversify the Canopy
Plant and Retain Trees

TREE EQUITY IRRIGATION PROGRAM •

To support residents living in low-canopy areas, the City may launch a program to plant and establish drought-tolerant trees in the city-owned right of way and providing irrigation to these trees until they are established. This planting program would be carried out in neighborhoods with low tree equity scores and available street tree planting spaces.

The program would differ from the typical requirement that adjacent property owners water street trees, with the aim of foresting areas where residents have fewer financial resources to take on this role. By choosing only the most drought-tolerant trees, the program may reduce or eliminate the long-term watering responsibilities after establishment.

Goals: Extend Trees' Benefits to All
Care for Park and Street Trees

FORMAL OPT-OUT FOR STREET TREE CARE •

Per the Grand Junction Municipal Code, the property owners are responsible for providing water to street trees, while the Forestry Division provides standard maintenance services such as pruning and removal. Not all residents are aware of this requirement, and it is essential that the City communicate about this relationship.

If a homeowner is unable to water their tree, or if a renter finds that their landlord refuses to arrange for watering, the City may prefer that the resident notify the Forestry Division rather than simply neglect the tree. In the long-term, the City can develop a program to support residents that are unable to meet watering demands. This would help to protect the City's investment in its public trees.

Goals: Care for Park and Street Trees
Extend Trees' Benefits Equitably

MEMORIAL TREE PROGRAM •

The City plants trees as Living Tributes to memorialize loved ones. Residents contact the Forestry Division to select a species, location, and installation date. Residents purchase the tree through the City and receives a personalized wood engraved map with the location of the tree. The City plants the tree, outfits it with a memorial plaque, and maintains it.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

UPDATE MUNICIPAL CODE CHAPTER 8.32 •

Chapter 8.32 of the Grand Junction Municipal Code addresses the role of the City Forester and Forestry Board, as well as care for public trees. With Forestry Division collaboration, the City should continue to evaluate the effects of the Code and consider updates such as those on page 36 that would improve outcomes for public trees.

Goals: Integrate Trees into Decisions
Care for Park and Street Trees

ARBOR DAY ●

The City and several partners host an annual Arbor Day celebration each spring, known as Southwest Arbor Fest. The popular event draws residents from throughout the city and beyond for games, food and drinks, and a range of educational and volunteer activities focused on trees. A central feature of the event involves a tree seedling giveaway and auction for high quality wood waste products. The event typically also includes a tree tour and advertising for Forestry Division programs. This is an essential opportunity for building public awareness of the value of urban forestry. It should be continued indefinitely.

Goals: Build Knowledge of Tree Care;
Plant and Retain Trees

LINCOLN PARK ARBORETUM ●

The Arboretum at Lincoln Park serves as an outdoor tree museum. The City continually maintains the trees and incorporates their educational potential in many programs, including for local schools, child care facilities, and institutions of higher learning. The City may consider establishing a new exhibit at the Arboretum focused on drought-tolerant trees with educational programs centered on climate adaptation.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

TREE WORK REQUEST RESPONSE ●

A critical function for the Forestry Division involves resident reporting of problems and needs for street and park trees. Residents can access a request form through the City website, leading to a response from the Forestry Division's crews. Based on the survey associated with this plan, as many as half of residents are unaware of this system. The City should leverage every opportunity to spread the word and grow participation.

Goals: Care for Park and Street Trees
Plant and Retain Trees

TREE FRIENDLY LANDSCAPE BUSINESS TRAINING & CERTIFICATION ●

Several large companies and many small companies provide lawn care, landscaping, and weed abatement services in the city. Many of these companies rely on seasonal employees, and the range of experience and education of landscaping professionals varies widely. This results in a wide range of outcomes for trees on public and private property.

To support tree-friendly operations and to minimize inadvertent harm to public and private trees during landscaping activities, the Forestry Division should develop and sponsor an annual training. This one-day training should address best practices in weed abatement, irrigation, xeric landscape care, and more. To encourage and recognize participation, companies that attend the training should receive a new certification as a City of Grand Junction Tree-Friendly Business. A curriculum, logo, and outreach should be developed for the program.

Goals: Build Knowledge of Tree Care
Integrate Trees into Decisions

TRACK EFFECTS OF SIGNIFICANT TREE REGULATIONS ●

In 2022, the City adopted clarified standards for the protection of significant trees during real estate development. This rule affects private property trees exceeding 15 inches in diameter and identified on the City's Suitable Plants List as eligible. Developments are now required to preserve 30% of significant trees during construction. If not, the developer must replace these trees at a higher-than-normal rate with new trees, or otherwise pay into a fund for tree planting.

The Community Development Department should retain notes on how many trees are protected under this regulation and how this has affected development, including whether this affects the number of dwelling units proposed for a residential project. This data will support review of the new landscaping rules in the next three to five years.

Goals: Plant and Retain Trees
Integrate Trees into Decisions

WINTER STORM MESSAGING •

The Forestry Division invests resources in storm cleanup, but these costs may be offset by proactive care by residents. Leveraging public safety communication channels, the City can develop and distribute messaging to residents that prompts them to take actions to reduce limb loss and tree mortality during major storms.

Goals: Plant and Retain Trees;
Build Knowledge of Tree Care

BIKE-PED ROUTE FORESTATION •

Pedestrians and cyclists are particularly vulnerable to heat stress in summer. To improve shade provision for these groups, the Forestry Division can concentrate plantings on designated Active Transportation Routes, especially where these routes have high rates of use and traverse neighborhoods with low tree equity scores.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

WATER-WISE LANDSCAPING REQUIREMENTS •

In 2022, the City adopted new regulations for landscaping of major development projects. These new regulations were designed to increase odds of young tree survival, lessening the number of required trees but promoting good practices like reduced weed barrier fabric and the use of organic mulch.

The new rules also reduced the required and permitted planting of turf-grass, which may lessen unused grass areas by about 50% for new non-residential development. New landscape installation must include high-quality irrigation design, climate-appropriate species selection, and greater planting diversity. Though these rules do not apply to single-family residences, they can serve as a guide for any property owner motivated to manage drought and water scarcity.

Goals: Build Knowledge of Tree Care
Invest Water in Shade

GRAYWATER SYSTEMS •

In 2022, the City adopted regulations to allow residents and businesses to install graywater systems, becoming just the fifth Colorado municipality to permit these systems under a new State law. Graywater systems capture safe sources of used household water, allowing this water to be used again to water landscapes. Use of graywater decreases a property's demand for irrigation water or unused potable water for landscaping.

The City is permitting its first graywater systems this year. By tracking registered graywater systems and following up with users about their experience, the City can determine whether this is part of the long-term solution to water constraints that affect landscaping and tree care.

Goals: Invest Water in Shade
Plant and Retain Trees

WILDFIRE RISK EDUCATION •

While residents understand the reality of wildfire, not everyone takes routine action to reduce risk. The local Two Rivers Wildfire Coalition recently launched a Wildfire Learning Network program that involves the Grand Valley Power, the Bureau of Land Management, the Grand Junction Fire Department and the Mesa County Sheriff's Office. The City Forestry Division may explore avenues for participation that focus on risk reduction at the Wildland-Urban Interface.

Goals: Build Knowledge of Tree Care
Integrate Trees into Decisions

AQUAPONIC TREE PRODUCTION •

In 2019, the Forestry Division established an aquaponic tree production bed, leveraging a grant from the Colorado Tree Coalition. This system allows the City to grow seedlings with minimal water waste and reduced cost for public plantings and giveaways. The City may expand this system to supply a majority of new public plantings.

Goals: Plant and Retain Trees

DROUGHT PREPAREDNESS MESSAGING ●

The City cooperates with water providers and irrigators in the Drought Response Plan (DRIP) partnership. This entity reaches people by many means to remind them of the importance of water conservation. DRIP makes the public aware of drought conditions, offers guidance on water use decisions, and coordinates the actions of the partners. In cooperation with DRIP, nurseries, and other partners, the Forestry Division should develop special messaging on tree care during drought. By helping the public avoid excess watering while keeping trees healthy, the community will protect its long-term investment in the canopy.

Goals: Invest Water in Shade

Integrate Trees into Decisions

COMPLETE TREE INVENTORY ●

While the Forestry Division maintains a near-complete inventory of trees under public care, it does not have a full tree inventory to account for the 75% of trees on private property. To develop this complete inventory will be a long-term effort, but it can begin by retaining records of trees planted with development. Many cities leverage grants or AmeriCorps positions for this purpose.

Goals: Integrate Trees into Decisions

Care for Park and Street Trees

CITIZEN FORESTER PROGRAM ●

The PROS Master Plan calls for a Citizen Forester Program, a Native Plants Program, or other advocacy programs to develop tree advocacy and a better understanding of forestry-related policy issues. This effort can begin with a pilot cohort, and it may be most manageable if undertaken in cooperation with non-profits, CMU, or CSU Extension.

Goals: Extend Trees' Benefits to All

Care for Park and Street Trees

WATER CONSERVATION MONTH

MESSAGING •

April is officially Water Conservation Month in the Grand Junction. In this time period, DRIP expands its messaging, leveraging the focused support of the City Council to spread the word about conservation practices. The Forestry Division should actively participate in Water Conservation month and expand the connection between this period and the coinciding Arbor Day celebrations.

Goals: Invest Water in Shade
Build Knowledge of Tree Care

EARLY CHILDHOOD TREE EDUCATION •

Elementary and middle school education includes curriculum on local history and geography. The City and its partners can develop or adapt curriculum for teachers to promote interest and knowledge of trees at an early age.

Goals: Build Knowledge of Tree Care
Integrate Trees into Decisions

WOOD WASTE RECYCLING •

The Forestry Division currently manages a Tree Mulch and Firewood Program. This makes organic material from public tree removal available to the public at request, reducing waste and recycling nutrients into the urban forest. The City may have future opportunities to expand this recycling program for other uses, such as carpentry and furniture manufacturing. The Forestry Division should evaluate future partnerships and uses for wood waste.

Goals: Integrate Trees into Decisions

UPDATE HAZARD MITIGATION PLAN •

In cooperation with Mesa County and other local governments, the City of Grand Junction is party to a county-wide Hazard Mitigation Plan. This plan was updated in 2015, but should be updated every five years; thus, a revision should be considered to reflect new knowledge and concerns.

Goals: Invest Water in Shade
Plant and Retain Trees

SUPPORT HOA AND NEIGHBORHOODS TO RAISE CANOPY STANDARDS •

Because HOAs affect a large share of the homes in Grand Junction, they have opportunities to improve requirements for landscaping and disseminate tree care information that respond to microclimates in their areas. The latter is also true of neighborhood organizations and similar groups in a position to provide microclimate-specific guidelines and references documents to residents. The Forestry Division, CSU Tri-River Area Extension, and other partners with high knowledge of forestry issues can consult with HOAs and neighborhood organizations to review such guidelines and references, but the initiative must be taken by residents themselves to launch and carry forward such programs.

Goals: Plant and Retain Trees

Build Knowledge of Tree Care

IMPROVED INVENTORY MANAGEMENT SYSTEM •

The City currently relies on a software called Lucity for inventorying trees and tracking work requests. Many staff that use Lucity express dissatisfaction with the software's useability and reliability. The software is also poorly integrated into the city's public-facing GIS portal. The City should explore alternative software and solicit pilots from providers that would allow staff to test alternative systems for their useability in Grand Junction. Overall, the data from the inventory should be integrated into public facing dashboards to build public understanding about trees in the public realm.

Goals: Build Knowledge of Tree Care

Integrate Trees into Decisions