

Introduction

Boulder's community urban forest includes approximately 50,725 inventoried street and park trees, managed by the City of Boulder, primarily by the City Forestry Division. These trees are a subset of the overall urban forest that also includes tens of thousands of trees on public and private property. As the urban forest has grown, challenges and opportunities have emerged that require a proactive management approach and a long-term planning strategy to preserve the health, sustainability, and benefits of trees and canopy cover. In 2016, the City of Boulder contracted with the Davey Resource Group to develop an Urban Forest Strategic Plan (UFSP) to specifically address the unique challenges and opportunities Boulder's urban forest will face over the next 20 years.

Phase I of the development process for the UFSP included a comprehensive review of the history of Boulder's urban forest, including establishment, management, and regulatory policies, as well as interviews with key stakeholders (internal and external). In addition, DRG examined organizational structure along with staffing, equipment, and funding resources. The Phase I: Summary Report will inform the development of the UFSP, specifically identifying and discussing the existing urban forest resource and management structure, including:

- Structure and condition of urban forest resources
- Environmental and socio-economic benefits from the urban forest
- Ordinances, regulations, and policies
- Community vision and priorities
- Staffing and funding
- Stakeholder input

This report lays the groundwork for the Phase II Summary Report, which will include goals and priorities, and Phase III Summary Report, which will provide specific action plans, case studies and comparisons to other communities.

Community

Boulder is located 25 miles northwest of Denver, Colorado, in Boulder Valley, where the Rocky Mountains meet the Great Plains. To the west, iconic sandstone slabs, the Flatirons, provide a scenic backdrop and multiple recreational opportunities. Boulder Creek, a tributary of the South Platte River, defines the primary watershed flowing through the center of the city.

The climate is dry to semi-arid, typical for much of the state, and averages 21 inches of annual rainfall, and 89 inches of snowfall. Precipitation patterns are influenced by the Flatirons' rain shadow effect which dries the air as it passes over the Front Range. The average annual temperature is 52 degrees with an average high of 65 degrees and a low of 38 degrees Fahrenheit.

Due to the unique climate of the Front Range, there are few naturally occurring native trees, and most heritage trees in the community are the legacy of on ranches and early settlements. Community tree planting has significantly added to the community tree resource over time, and it is important to acknowledge that these trees would not thrive without the care of adjacent property owners, and city staff. Riparian areas have some native vegetation, but also include substantial populations of naturalized species, such as green ash (*Fraxinus pennsylvanica*).

Boulder is home to an estimated 103,166 people (2013) of primarily white or Caucasian (88%) ethnicity, followed by Asian (5%) and other races. Among the 41,302 households, 19% have children under 18, and 32% are married couples. Boulder's population is younger than the national average, due largely to University of Colorado (UC) students.

Outdoor recreation activities abound in Boulder, including biking, hiking, rock climbing, and snow sports. The City of Boulder manages over 45,000 acres of land including 151 miles of trails within the

Open Space & Mountain Parks Department, and more than 60 city parks including sports fields, playgrounds, neighborhood parks and community gardens. Free fitness classes offered in several parks, and many fee-based outdoor camps and organized recreation activities, are popular with community members. Since 2009 Boulder has been the nation's fittest community, with only 12.4% of residents reported to be obese (Gallup-Healthways Wellbeing Index, 2016).

Boulder has earned a reputation for working proactively to reduce the city's environmental impacts with established city programs to:

- Combat climate change
- Reduce energy waste
- Promote the health of urban, farming, and natural ecosystems
- Support the production of local foods
- Reduce, recycle, and compost waste, with an aim of zero waste
- Conserve water and maintain water quality

The community's outdoor lifestyle, environmental stewardship, and high quality of life make Boulder an attractive location for established and emerging businesses. The city has a culture of innovation and entrepreneurial support that helps businesses thrive, and Colorado University (CU) hosts more than a dozen federal research labs and growing companies in a variety of industries. The city actively supports businesses through the Economic Vitality Program, providing information and assistance to Boulder businesses. Boulder is frequently recognized for its quality of life and business climate. Recent accolades include #1 Best Community for Physical Well-Being, #1 Most Active City in the U.S. and #4 Best City to Launch a Startup in 2016 (Bouldercolorado.gov).

Vision

Development of the UFSP requires an understanding of the shared community vision for the urban forest. While complete consensus about how trees should be managed is seldom reached, Boulder has articulated a vision, mission, and priorities for the urban forest in recent publications.

The 2010 Boulder Valley Comprehensive Plan, which is in the process of being updated, articulates the following vision for the urban forest:

By 2050, Boulder's urban landscape will be planted with trees and plants that can moderate climate extremes, reduce energy, and water use, improve water quality, and enhance the beauty and livability of Boulder's urban environment. More than 35% of the land area in the developed portions of Boulder will be shaded by trees.

Priorities

The Comprehensive Plan articulates the following priorities for urban forestry through 2050.

- Review and revise parking lot shading [guidelines](#) and enforcement of increased canopy cover.
- Monitor the urban forest using both on-the-ground and remote sensing technologies to document how it is responding to climate change and establish ongoing monitoring protocol.
- Increase the diversity of urban tree species to improve overall urban forest resilience.
- Review and improve strategies for responding to pest and disease invasions.
- Review and refine park and natural space plans to minimize damage from the impacts of increased use and warmer conditions.
- Explore the establishment of a partner, non-profit urban forest foundation to leverage additional financial and community support for the urban forest.

History of Urban Forestry in Boulder

The first people to call Boulder Valley home were the Southern Arapaho tribe of Native Americans. In 1858, miners seeking gold and other metals established a small community, and in 1861, the Territory of Colorado was established by Congress to govern the emerging mining industry. Railroad service and

the establishment of the CU campus increased the community's economic base and the town of Boulder was incorporated in 1871.

As Boulder's population grew, and city leaders developed strategies to manage growth and preserve historic and natural resources. In 1959, Boulder voters approved the "Blue Line" city-charter amendment, which restricted city water service to altitudes below 5,750 feet in an effort to protect the scenic flatirons from development. Residents overwhelmingly voted in favor of amending the city charter to combine the long-standing parks and recreation divisions and establish a Boulder Parks and Recreation Department (BPRD) in 1961.

Parks and Recreation Master Plan

The 2014 Boulder Parks and Recreation Department Master Plan established a five-year plan to identify short term strategies to build success over the long term. The following Mission, Vision and Guiding Principles are relevant to the development of the UFSP, including:

BPRD Mission Statement

BPRD will promote the health and well-being of the entire Boulder community by collaboratively providing high-quality parks, facilities and programs.

BPRD Vision

We envision a community where every member's health and well-being is founded on unparalleled parks, facilities and programs.

Guiding Principles

- Sustainable Practices
- Partnerships
- Health as Our Fundamental Purpose
- The Common Good
- Service Excellence
- Continuous Improvement

Key Themes

Six key themes, which emerged from research and community engagement, shaped the strategies that are the focus for the future action and decision-making outlined in the Parks and Recreation Master Plan:

- Community Health and Wellness
- Taking Care of What We Have
- Financial Sustainability
- Building Community and Relationships
- Youth Engagement and Activity
- Organizational Readiness

Select policies that apply specifically to this Urban Forest Strategic Plan include:

- Ensure adequate resources are available to maintain and operate assets within community sustainability goals by implementing a life cycle approach
- An asset management system that tracks asset condition, critical systems maintenance and repair and rehabilitation requirements will be implemented and used in making park and facility investment decisions
- The proposed development of any new park and facility shall be evaluated through a feasibility study that includes a needs assessment, user profile, projected participation

- analysis, development funding method, life cycle cost pro forma and alternative development trade-off analysis
- Seek and develop partnerships and opportunities to leverage maintenance and capital building funds
- Ensure that the department workforce, structure and culture is designed and prepared to respond to community needs
- Develop a highly effective workforce that will positively impact the community's health and quality of life

Tree Policy and Regulation

State Law

The Colorado Department of Agriculture (CDA) regulates the distribution and use of pesticides in the state to prevent adverse impacts to the public and the environment. This includes licensing and inspection of all commercial and private pesticide applicators to make sure pesticide use, storage, and disposal comply with state and federal law. CDA also regulates pesticide sales and provides regulations for pesticide use near waterways, which requires a state permit available online.

With the discovery of Emerald Ash Borer (EAB) in 2013, Boulder became an EAB quarantine community, where hardwood wood waste from the community was required to be disposed of in designated areas within and just on the border of the County. It is a violation of state and federal law to improperly dispose of wood waste.

Municipal Ordinance

Street Tree Care

Boulder's municipal code establishes rules and regulations for the licensing of tree care professionals, establishes tree removal mitigation requirements, and defines penalties for damage to trees in parks and unpermitted damage to street trees. In Boulder, street trees may be maintained by adjacent property owners, with rotational pruning by neighborhood provided on a 10-year cycle by licensed tree care companies contracted through City Forestry. This 10-year cycle has been delayed in recent years due to resource allocation for unusual weather events and urgent ash removal needs due to EAB.

Trees in Development

If a property is going to be developed or redeveloped, trees undergo a site review process including inventory, anticipated impacts, and plans for mitigation. Street trees are required to be planted in the public right of way at the time of development. On most sites, the designated spacing is one tree per forty linear feet within ten feet of the pavement edge. The trees must be from the approved street tree list, and the Planning Department regularly provides expert advice to ensure species planted are compatible with site attributes. Additional requirements for parking lots and open spaces are defined.

Wildlife Sanctuary

Urban wildlife in Boulder is protected, including birds, prairie dogs, bears, and bees. The city requires permits for any injury or killing of protected urban wildlife, working diligently with property owners to identify non-lethal solutions to wildlife conflicts. Tree care industry professionals are trained in how to responsibly manage animals with nests or cavity-dwellings in a tree that is scheduled for pruning or removal.

Pesticide Notification

Boulder's Pesticide Ordinance (Section 6-10) requires Boulder residents be notified when and where pesticides are applied. It is the responsibility of the pesticide applicator to notify all adjacent property owners at least 24 hours prior to airborne application. Once notified, application must occur within 7 days or the adjacent owners will have to be re-notified before the application takes place.

Noise Ordinance

Following the motto, “Good neighbors keep their noise to themselves.”, Municipal Ordinance Chapter 9 defines “unreasonable noise” and provides timeframes and penalties for noise abatement. Specifically, any power lawn or gardening tool is prohibited from 9pm to 7am. Exemptions are allowed for equipment used to remove flood debris which extends the operating hours to 5am to 12 midnight.

Traffic Control

Municipal Ordinance Chapter 8 specifies that no person shall perform work in the right of way without providing temporary traffic control measures. These measures include:

- Developing a traffic control plan any time pedestrian, bicycle, or vehicle traffic is impeded
- Not blocking access to emergency assets such as hydrants or fire escapes
- Provision of temporary traffic control devices such as reflective signs or barricade warning lights
- Provision of a Flag person to direct traffic
- Supervision by a traffic control supervisor or technician

These requirements are intended to enable safe passage for Boulder residents on public rights-of-way, and are an important consideration for any tree care personnel when developing work plans for tree planting, watering, pruning, or removal.