

Chapter One—Introduction

Boulder is a vibrant city, renowned for its livability and cultural wealth and well known for its Smart Growth policies that protect and restore environmental quality while enhancing economic opportunity. The city maintains trees as an integral component of the urban infrastructure (*Figure 1*). Trees improve urban life, making Boulder a more enjoyable place to live, work, and play. Boulder's street and park trees, its municipal forest, account for only about 20% of the city's total tree population. Although most trees in Boulder are on private property and these trees are important to the community, this study focuses on calculating the costs and benefits of the municipal forest.

The people of Boulder have invested millions of dollars to plant and maintain trees as an integral part of the city infrastructure. The Urban Forestry Division of the Boulder Parks and Recreation Department actively manages 25,281 trees along streets, as well as 10,221 park trees. This 35,502 total does not include most trees in natural areas and other trees in the city's jurisdiction not maintained by the Urban Forestry Division. The City believes that the public's investment in stewardship of the urban forest produces benefits that outweigh the costs to the community.

Research indicates that healthy city trees can mitigate impacts associated with urban environs: polluted stormwater runoff, poor air quality, energy for heating and cooling buildings, and heat islands. Healthy public trees increase real estate values, provide neighborhood residents with a sense of place, and foster psychological health. Street and park trees are associated with other intangibles, too, such as increasing community attractiveness for tourism and business and providing wildlife habitat and corridors.

Boulder's urban forest is a legacy that was largely created by the tree planting and stewardship efforts of previous generations. With the exception of trees native to the streamside corridors that run

through town, Boulder's trees were planted and tended by citizens who valued the trees' shade and beauty. According to recent public survey results, today's residents continue to support investing in this legacy.

In an era of dwindling public funds and rising costs, however, there is a need to scrutinize public expenditures that are often deemed "non-essential," such as planting and maintaining street and park trees. Although the current program has demonstrated its economic efficiency, questions remain regarding the need for the level of service presently provided. Hence, the primary question that this study asks is whether the accrued benefits from Boulder's urban trees justify the annual expenditures?

In answering this question, information is provided to do the following:

1. Assist decision-makers to assess and justify the degree of funding and type of management program appropriate for Boulder's urban forest.
2. Provide critical baseline information for evaluating program cost-efficiency and alternative management structures.
3. Highlight the relevance and relationship of Boulder's municipal tree resource to local quality of life issues such as environmental health, economic development, and psychological health.
4. Provide quantifiable data to assist in developing alternative funding sources through utility purveyors, air quality districts, federal or state agencies, legislative initiatives, or local assessment fees.

This report consists of seven chapters and two appendices:

Chapter One—Introduction: Describes purpose of the study.

Chapter Two—Boulder’s Municipal Tree Resource: Describes the current structure of the street tree resource.

Chapter Three—Costs of Managing Boulder’s Municipal Trees: Details management expenditures for publicly managed trees.

Chapter Four—Benefits of Boulder’s Municipal Trees: Quantifies estimated value of tangible benefits and calculates net benefits and a benefit–cost ratio for each population segment.

Chapter Five—Management Implications: Evaluates relevancy of this analysis to current programs and describes management challenges for street tree maintenance.

Chapter Six—Conclusion: Final word on the use of this analysis.

Appendix A—Tree Distribution: Lists species and numbers of trees in street and park populations.

Appendix B—Methodology and Procedures: Describes benefits, procedures and methodology for calculating structure, function, and value of the urban tree resource.

References—Lists publications cited in the study.