



TOWN OF BROOKLINE

Massachusetts

DEPARTMENT OF PUBLIC WORKS

PARKS AND OPEN SPACE DIVISION

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Commissioner

Urban Forest Climate Resiliency Master Plan: Draft Outline*

**Please note this outline is a draft and subject to change.*

- I. Acknowledgements
- II. Table of Contents
- III. Executive Summary
- IV. Climate Change Impacts
 - A. Research Overview
 - a. Introduction
 - B. Regional and Local Climate Change Impacts
 - a. Temperature
 - i. Heat Island Effect
 - b. Precipitation, Drought and Flooding
 - c. Sea Level Rise
 - C. Effects on People
 - a. Extreme Heat
 - b. Air Quality
 - c. Pests and Allergic Reactions
 - d. Water Quality
 - e. Crime
 - f. Health and Equity
 - D. Effects on Ecosystems
 - a. Range and Distribution
 - b. Dormancy and Temperature
 - c. Migration
 - d. Urban Forests
 - e. Human Health
- V. Benefits of Urban Trees
 - a. Economic (property values, retail sales, road maintenance)
 - b. Water quality (filtration, flooding, erosion)
 - c. Health (air quality, promoting physical activity)
 - d. Social (crime, community engagement)
 - e. Environmental (habitat, biodiversity, climate, resilience, etc.)
- VI. How Trees Help us Adapt to Climate Change
 - a. Shade/offset heat island effect
 - b. Air quality
 - c. Stormwater management
 - d. Ecosystems
 - e. Slope stability

VII. State of Brookline Tree Canopy

- A. Stem by stem inventory
 - a. Process
 - b. Results
 - 1. Town-wide
 - 2. Specific areas
- B. Canopy analysis
 - a. Process
 - b. Results
 - 1. Town-wide
 - 2. Specific areas
- C. Ownership and Land Use

VIII. Climate Change Risk and Intervention Analysis

- a. GIS-based risk assessment of Brookline's neighborhoods and urban forest, identifying areas most at risk from various climate change impacts
- b. Scenarios to reach urban forestry and climate change intervention goals (e.g. tree canopy)

IX. Current Urban Forest Regulations, Policies and Practices

- a. Regulations
- b. Program Management (Town level – Parks and Rec, Planning, Transportation, DCR, etc.)
 - i. Planting
 - ii. Planning
 - iii. Preservation
 - iv. Maintenance
 - v. Emergency management
- c. Commissions, Committees and Volunteer Efforts
- d. Review of Town operations

X. Recommendations For Tree Canopy (Divided by tree location, size, ownership, etc., depending on results of analysis)

- a. Right tree, right place, right TIME
- b. Species selection
- c. Equity
- d. Targeted areas
- e. Street Trees
- f. Public park trees
- g. Private trees
- h. School and Institutional
- i. Mature trees
- j. Tree planting
- k. Tree replacement
- l. Maintenance
- m. Tree pruning
- n. New regulations
- o. Public education efforts

XI. Benchmarking - How Will Progress be Measured? What Targets Are We Aiming For?

XII. Funding

XIII. Appendices