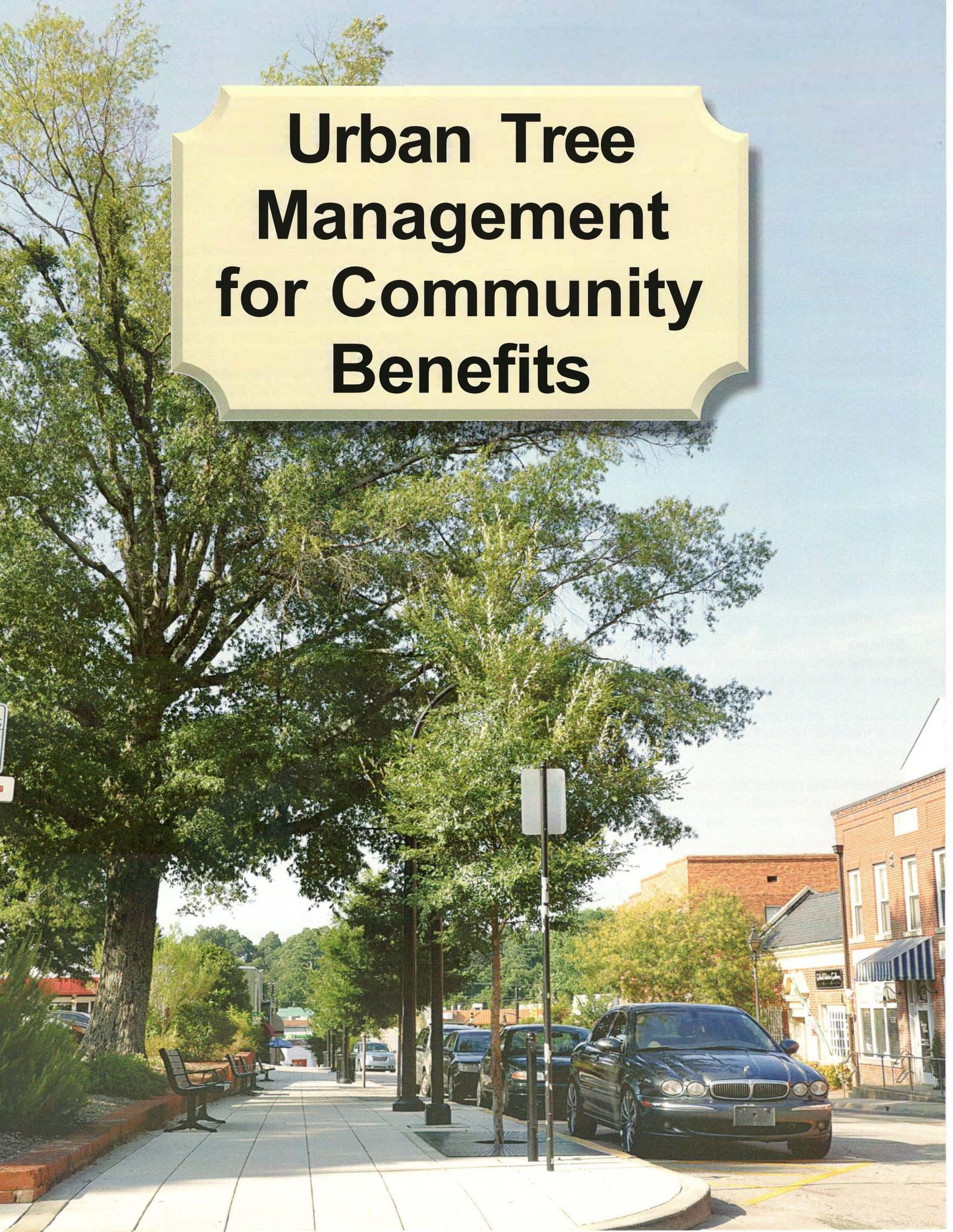# Urban Tree Management for Community Benefits

Urban Trees: Steps to Managing at the Community Level

Managing your community forest, whether in parks, wooded areas, or along the street, requires information about what you have, what you need, and what it costs, in order to maximize the benefits for the funds you spend.

There are degrees of management ranging from reactive actions based only on resident complaints, to being proactive by establishing specifications and incorporating urban forest issues into zoning, planning and engineering. Finding the right place that on range for your community requires knowing what the steps are.
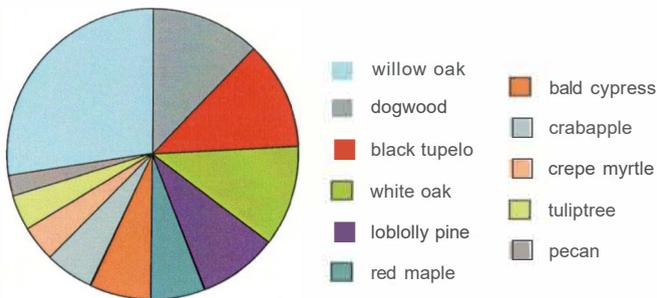
STEP 1: KNOW WHAT YOU HAVE

Components:
a. **Tree Inventory**
b. **Inventory Report/Summary**
c. **Data management/Updating**

a. Tree Inventory
· What do you have?
· Where is it?
· What needs to be done?

willow oak	bald cypress
dogwood	crabapple
black tupelo	crepe myrtle
white oak	tuliptree
loblolly pine	pecan
red maple	

Species - a few different species or many? Overuse of a limited number of species can increase problems with pests or disease, increasing management costs.

Location - street trees have different challenges than park trees, so species choices and maintenance needs may be different.

Number - the number of trees and planting spots show whether the community is maximizing planting opportunities and associated benefits.

Age - tree size can indicate whether the trees are young, mature or old, and knowing this helps a community plan for removal and species replacement.

An ideal urban forest has many trees of different ages and sizes, from small/young trees, to older mature trees, spreading out the maintenance and removal costs and ensuring the canopy is healthy.

A population with mostly large and old trees, means removal and replacement costs are going to be high. Communities should then increase planting to use available planting sites and initiate needed removals.
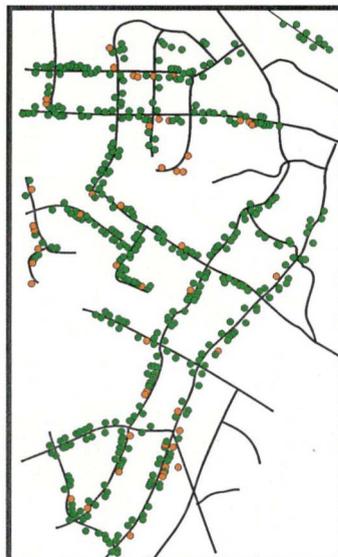
Mapped locations of inventoried trees

b. Inventory Report/Summary
Having a tree inventory allows you to summarize and identify your management priorities. When using a consultant to collect inventory data, a report is usually provided that clarifies and explains the results. Typically, such a report will consider the budget and the local contracting costs, as well as providing an overview of a possible time frame for completing the recommended tree work. A report may also summarize the benefits that trees provide to the community.

c. Data Management/Updating
Data is only as good as its accuracy, As trees are removed, planted and maintained, the information in the inventory program needs to be updated. This can be a challenge but it is important to keep the information up-to-date to justify planning and budgets, and for tracking management success. Improved internet and Wi-Fi access is being integrated into many data collection programs, allowing data to be updated from the field.

STEP 2: PLAN and MANAGE

Components:
a. **Community or Master Plan**
b. **Ordinances**
c. **Urban Tree Canopy Analysis**
d. **Emergency Management Plan (EMP)**

a. Community or Master Plan
· What do you want? More green, more connected, more mature, more young, less messy, less dead?
· How do you get there? Set goals, set budgets, set priorities, set standards and create a plan.

A Community Forest Management Plan or Master Tree Plan:

1. Is based on the inventory
2. Describes the community forest
3. Sets goals for the community forest
4. Establishes management standards and specifications
5. Helps prioritize and establish regular maintenance of trees
6. Justifies budget needs
7. Anticipates disease and insect outbreaks and other emergencies
8. Provides standards to allow measurement of success

Stating the standards, priorities and goals provides a guideline for planning and budgeting and a framework for working with other community departments and the public.

b. Ordinances

In many communities, trees may be mentioned in various ordinances relating to parks, roads, vandalism, etc. However, having a specific ordinance addressing trees, responsibility of the community and the residents, authority and penalities, helps bring the tree-related issues together and be managed in a straightforward way.

c. Urban Tree Canopy Analysis

Mapping the urban forest can allow you to see what is happening in your community:

· How much land is covered by grass, trees, pavement, and water?
· What benefits or costs exist from green or gray infrastructure?

Gray infrastructure (roads, buildings, etc.) increases heat reflection, water runoff and *depreciates* over time. *Green infrastructure* (grass, trees, etc.) reduces the impact of gray infrastructure, thus reducing treatment or control costs and *appreciates* over time.

Mapping and quantifying your green resources and assessing the value of the ecosystem services they provide can be used to: 1) justify management costs, 2) identify goals for increasing those benefits, 3) incorporate green infrastructure into planning and development processes.

A healthy urban forest provides numerous economic, social and environmental benefits:

Economic

· Consumers stay longer, shop more and pay more in areas with tree cover
· Property values are typically higher and sell faster
· Many of the environmental benefits actually provide costs savings to local governments

Social

· Reduces noise
· Traffic calming
· Visual screening
· Aesthetics

Environmental

· Absorbs air pollutants
· Intercepts pollution particles in the air
· Releases oxygen
· Reduces ozone levels
· Stores carbon
· Reduces storm water peak flows
· Reduced energy use for cooling (also results in "avoided" pollutants)
· Wildlife habitat
· Increase life span of asphalt streets

Un-enhanced aerial photo showing gray and green infrastructure.

Analyzed aerial photo differentiating *gray infrastructure:* roads and other impervious surfaces (in yellow); and *green infrastructure:* tree canopy and lawns (in green and gray).

d. Emergency Management Plan (EMP)

Emergency management is always in one of four phases: *preparedness, response, recovery* or *mitigation*.

An EMP guides a community through the process:
· Clearly stated responsibilities and expectations speed the return to normal after a disaster.
· Knowing resource availability (equipment, personnel, and supplies) allows for an organized response.
· A plan provides guidance for individuals and groups assisting the recovery efforts.
· Regular updates for changes to personnel, communication capabilities, and composition of the urban forest.

Despite the apparent setback that a disaster brings, an EMP aids a community to reach the goals established in the Community or Master Plan.
· Identifies community priorities
  o Roads ranked for clearance
  o Facility access
  o Debris management
· Reduces risk through management
  o Routine tree inspections
  o Mitigate high risk trees
· Establishes responsibility
  o City department roles identified
  o Residents informed about the response and recovery process
  o Debris collection
  o Federal or State Emergency Management roles

· Initiates restoration efforts
  o Rebuilds the urban forest
  o Coordinates efforts of willing volunteers
  o Help maintain and achieve goals in Master Plan

Emergency Management Plan {EMP}

Mitigation

Preparedness

Recovery

Response
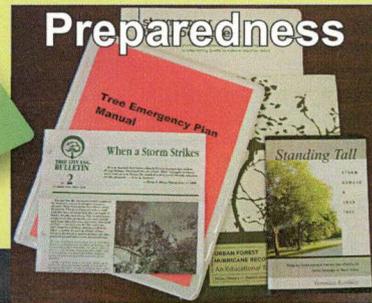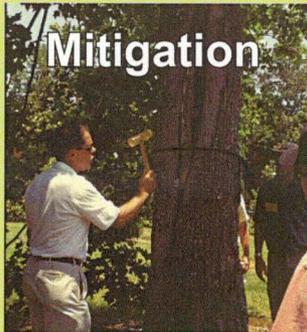
Where is YOUR community in this process?

For more information about developing any of these management tools,
contact the RIDEM Division of Forest Environment's
Urban & Community Forestry Program

www.dem.ri.gov/urbanforestry