

## Pilot Testing the i-Tree Software in Minneapolis, Minnesota

### How is Minneapolis involved?

During the summer of 2004, the Forest Service and its cooperators tested i-Tree software applications and methods for field data collection in the city of Minneapolis. The Minneapolis Park and Recreation Board's legacy of tree planting, management, and desire for improved stewardship make it an ideal community to pilot i-Tree and showcase the results. Teams of professionals worked with community volunteers organized by the Tree Trust to collect data.

### What data was collected in Minneapolis?

Information such as species, condition, tree height, trunk diameter, and canopy density were recorded about Minneapolis trees. Three separate sets of data were collected, including:

#### Street tree data collected by professionals

A sample of 900 trees throughout Minneapolis were inventoried by Davey Resource Group. Information about street-side trees was sent on to the Center for Urban Forest Research where it was analyzed to calculate baseline estimates of the costs and benefits of the city's street tree population.

#### Street tree data collected by volunteers

A sample of 405 street segments were inventoried by community volunteers. The information collected by these volunteers will be compared to that collected by professionals. This comparison will help mold future volunteer-based inventory projects.

#### Public & private tree data collected by professionals

Circular plots (about 1/10th acre in size) were randomly selected throughout the city, and professional data collectors from Davey Resource Group recorded information about all trees located within those plots. The information was then analyzed by researchers at the Northeastern Research Station to quantify urban forest canopy effects.

### How will the information be used elsewhere?

The data collected in Minneapolis will serve as a baseline for other communities located within the same climate. This baseline information will allow others to estimate their street tree costs and benefits with only a limited amount of inventory data collection required.

### How will Minneapolis benefit?

The i-Tree analyses in Minneapolis provide the following information about the urban forest:

- Dollar value of annual environmental and aesthetic benefits related to energy conservation, air quality



Minneapolis was selected as the first city in the nation to test the data collection and analysis applications of the i-Tree software suite.

improvement, CO2 reduction, storm water control, and property value increase

- Canopy cover for different neighborhoods, species diversity, conflicts with power lines and sidewalks, and species performance
- Hourly amount of pollution removed by the urban forest and associated percent air quality improvement
- Effects of trees on building energy use and consequential effects on carbon dioxide emissions from power plants
- Potential impact of pests such as gypsy moth, emerald ash borer, and Asian long-horned beetle

This information can then be used to make decisions regarding future funding and management strategies. Cost/benefit analyses provide valuable information about the accrued benefits of street trees compared to the management costs and can help justify management expenditures.

### How does this relate to the inventory work already underway by the Minneapolis Park and Recreation Board?

The information already collected in the city provided the base for sampling. Environment Systems, Inc., who developed the data collection protocol for Minneapolis' inventory, played an integral role in compiling and organizing data for the street tree sampling portion of the study. This information will supplement the work already being completed in Minneapolis as part of the Park and Recreation Board's inventory effort.

### When will the results be available?

October 2005