

Customer stories

Kansas town conducts inventory of its wealth of green

Customer
City of Overland Park

Project
Overland Park counts trees
with Trimble technology

Project Date
2004–2007



The City of Overland Park will develop a pruning schedule and maintenance program based on detailed results of the mapping project.

Most city managers consider parks, buildings, water and a public transportation system to be among the most valuable assets a city has to offer. But now, more than ever, cities across the United States are adding trees to the list of important city assets.

Cities of all sizes, from small rural communities to major metropolitan areas, are recognizing the importance of keeping a current inventory of city trees as a component of successful city management. Databases containing the location, type and condition of city trees are becoming increasingly more common.

The City of Overland Park, Kansas, located in the Kansas City metropolitan area, recently embarked on a comprehensive tree-mapping project. Officials in Overland Park first realized the importance of a street tree inventory when, in the winter of 2002, the city was hit by an ice storm that destroyed or damaged hundreds of the city's trees. Without a tree inventory, the city had no way of assessing the location, species and, most importantly, the cost of the damage incurred.

Spearheaded by the city's Parks and Forestry Division, an accurate street tree inventory will enable the city to determine the value of its urban forest. This could help mitigate liability should a tree cause damage, and is an absolute necessity when applying for emergency management funds in the event of natural disaster. Additionally, the street tree inventory initiative will help the city manage its maintenance program and more effectively fight disease and other infestations.

Under the Government Accounting Standards Board (GASB) Statement No. 34, cities can include the urban forest as part of the city infrastructure that has a distinct value and provides direct benefit to the community. If a city chooses to include its trees as capital assets, GASB 34 requires minimum maintenance and regular inventory of the asset. Several cities are currently exploring the benefits of including trees as capital assets, which could result in additional funding for tree maintenance, increased value of the city and higher city ratings.

Overland Park embarked upon its street tree inventory project with the help of an ESRI/Trimble Mobile Government grant, which provided the hardware, software and training necessary to put a Geographic Information System (GIS) and Global Positioning System (GPS) initiative into practice.

Each year, ESRI and Trimble award grants to help establish innovative GIS and GPS applications to improve government processes. Another objective is to encourage the sharing of applications between governments with similar projects.



Volunteers are recording data for more than 100,000 street trees using Trimble GeoXT handheld GPS receivers.

Overland Park is using GIS and GPS technology to accurately track and report on the location, species, value and maintenance requirements of its street trees. Once complete, the database will contain spatial data and value estimates for the city's approximately 100,000 street trees, which, by definition, are located within 25 feet of the center of a city street.

Volunteers are taking to the streets of Overland Park with a Trimble® GeoXT™ rugged GPS handheld receiver with Microsoft® Windows Mobile™ 2003 software for Pocket PCs and ArcPad data collection software from ESRI. They record information about geographic location, condition, age and species of street trees. Volunteers work in pairs; one person is responsible for identifying a tree's species and condition and the other person logs the information into the GeoXT handheld.

At the end of each day, the information is downloaded into the city's GIS database. GIS analyst Robert Meier uses an industry formula to calculate the monetary value of each of the city's street trees based upon factors such as species, age, condition and location of each tree.

In addition to putting a value on each of the trees, Overland Park is also creating reports on the maintenance requirements, obstructions, species classification and location so that it can better understand its urban forest. Ultimately, the city's Parks and Forestry Division plans to use the data in the GIS to create a pruning schedule and preventive maintenance program.

PROJECT HIGHLIGHTS

- **City of Overland Park, Kansas, embarks on comprehensive street tree inventory**
- **Database will contain spatial data and value estimates for more than 100,000 street trees**
- **Volunteers record street tree data using Trimble's GeoXT rugged handheld GPS receivers**
- **Database will enable Overland Park officials to create a maintenance program and pruning schedule for street trees, as well as assess the value of trees as city assets**



Once the street tree data is in the city's GIS, it can be shared with other departments. Department managers will be able to determine the best use of resources such as overall department funding; equipment expenditures, allocation and use; and employee scheduling.

Although the city anticipates it will take three years to complete the data collection, the benefits of a spatially accurate street tree inventory are already evident. Initial data is providing justification for a more inclusive forestry management program that includes preventive maintenance, disease control and regular pruning. The city anticipates realizing a substantial return on its investment as the data collection process nears completion and the city can quantify the value of its street trees as an important capital asset.

Based on the initial success with GIS and GPS technology, other city departments are exploring the use of GPS. The Parks and Recreation Department is planning to add GPS data for playgrounds, shelters, benches, basketball courts, drinking fountains and other amenities to the city's GIS in order to streamline maintenance and repairs. Irrigation heads and trouble spots on bike paths will also be recorded to simplify the process of locating them for future maintenance. The city is already using GPS to map street signs, culverts and centerlines.

"It's great that so many people within the community are becoming familiar with the benefits of GPS technology," Meier said. "The technology has been easy for the volunteers to learn, and I believe we've just scratched the surface of Overland Park's use of GPS."



The equipment used on this project includes:

- GeoXT handheld
- ESRI ArcPad software



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