



Request for City Council Committee Action from the City Coordinator's Office

Date: April 18, 2011

To: Honorable Elizabeth Glidden, Chair, Regulatory, Energy and Environment Committee

Subject: 2011 Minneapolis Tree Canopy Mapping Project Report

Recommendation: Receive and File

Department Information

Prepared by: June Mathiowetz, Homegrown Minneapolis Coordinator; 2011 Tree Canopy Mapping Project grant writer and contract manager Approved by: Steven Bosacker, City Coordinator, 612-673-2032 Presenters in Committee: June Mathiowetz and Marvin Bauer, University of Minnesota

Financial Impact

- No financial impact

Community Impact

- City Goals: *"Trees: A Solid Green Investment"*
- Comprehensive Plan – *"Environment Policy 6.8: Encourage a healthy thriving urban tree canopy and other desirable forms of vegetation."*
- Sustainability Indicator: *"Tree Canopy Target: Maintain the tree canopy at 26 percent of the city through 2015 and increase it to 30 percent of the city by 2030."*

Project Funding Sources

This \$33,000 project was funded by a Minnesota Department of Natural Resources' Metro Greenways Grant of \$29,000, a \$2,000 match from the City of Minneapolis Coordinator's Office/Sustainability and a \$2,000 match from the Minneapolis Park and Recreation Board. This project was a collaborative effort benefitting from contributions of staff time from the City of Minneapolis' Public Works Department, the City Coordinator's Sustainability Office, the Department of Health and Family Support, the Community Planning and Economic Development Department, the Minneapolis Park and Recreation Board, Hennepin County and the Minneapolis Tree Advisory Commission.

Background

The purpose of this project was to develop essential data needed for planning for the future of a vital Minneapolis asset – its tree canopy. Using the latest available satellite imagery and GIS technologies, this project develops baseline data on the tree canopy cover for the entire city and any subsection of the city and provides maps to assist in prioritizing potential tree planting sites to reduce stormwater runoff and increase energy conservation.

Results

- Minneapolis was found to have a 31.5 percent tree canopy cover overall for 2009 using a combination of high resolution (0.6 meter) multispectral satellite imagery and Light Detection and Ranging (LiDar) data. This is an increase from a field mapping study completed in 2004 that suggested the city's tree canopy was at 26 percent overall.
- Single family, two family and multiple family housing represent 93 percent of the existing tree canopy of the City.
- Single family and two family residences contain about 40 percent of their land cover as tree canopy. They also represent 76 percent of the possible tree canopy planting sites (on vegetative area).
- Industrial land use categories also represent high potential for possible tree planting sites, both in vegetated (11 percent) and impervious (34 percent) land cover areas.
- The classification maps and statistical data completed through this project are available in a GIS data base and a web-based mapping application for further analysis by the City in setting goals and planning for tree planting and maintenance.
- Maps identifying neighborhoods with the lowest existing tree canopy and the highest potential tree canopy are available through this work.
- Maps identifying parcels with the highest 10 percent and lowest 10 percent of tree canopy by neighborhood are available through this work.
- Maps identifying open right-of-way spaces of 10 meters or greater are available for consideration of potential boulevard tree plantings through this work. Power line maps were not available to the researchers for this work so smaller stature trees would be considered for those areas.
- Maps identifying parcels in the city with open areas on the west or east sides of buildings or homes that may be potential tree planting sites that could most improve energy conservation are also part of this work.

The Minneapolis tree canopy summary and report can be found online at:
www.ci.minneapolis.mn.us/sustainability/tree-canopy.asp

A special thanks to Minnesota Department of Natural Resources for funding this project; the University of Minnesota's Remote Sensing and Geospatial Analysis Laboratory team: Professor Marvin Bauer, Donald Killberg, Molly Martin and Zecharya Tagar; and the Minneapolis Tree Canopy Mapping Team: Lois Eberhart, Ralph Sievert, John Studtmann, Karl Westermeyer, Philip Potyondy, Jason Wittenberg, Jim Hermann, Gayle Prest, Mark Benishek, and Elizabeth Haugen. This project also benefitted from expertise and information sharing by David Thill of Hennepin County, Jill Johnson of the U.S. Forest Service, Janette Monear of the Texas Trees Foundation, Ian Hanou of AMEC, and Mary Beth Block and Sharon Pfiefer at the Department of Natural Resources.

Attachment 1: Summary of 2011 Minneapolis Urban Tree Canopy Report

Attachment 2: Powerpoint Summary of Project