

**Environment and Natural Resources Trust Fund  
2019 Request for Proposals (RFP)**

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**Project Title:**

**ENRTF ID: 017-A**

Community Tree Canopy Assessment and Diversity Survey

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**Category:** A. Foundational Natural Resource Data and Information

**Sub-Category:**

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**Total Project Budget: \$** 914,447

**Proposed Project Time Period for the Funding Requested:** June 30, 2022 (3 yrs)

**Summary:**

This project will provide canopy assessments, statistically sampled tree surveys, and an analysis of community tree benefits for 350-400 communities statewide.

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**Name:** Valerie McClannahan

**Sponsoring Organization:** MN DNR

**Title:** Senior Planner

**Department:** Division of Forestry

**Address:** 500 Lafayette Road  
St. Paul MN 55155

**Telephone Number:** (651) 259-5283

**Email** valerie.mcclannahan@state.mn.us

**Web Address**

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**Location**

**Region:** Statewide

**County Name:** Statewide

**City / Township:**

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**Alternate Text for Visual:**

Example of tree survey data. Canopy assessment maps and change rates.

<input type="checkbox"/>	Funding Priorities	<input type="checkbox"/>	Multiple Benefits	<input type="checkbox"/>	Outcomes	<input type="checkbox"/>	Knowledge Base	
<input type="checkbox"/>	Extent of Impact	<input type="checkbox"/>	Innovation	<input type="checkbox"/>	Scientific/Tech Basis	<input type="checkbox"/>	Urgency	
<input type="checkbox"/>	Capacity Readiness	<input type="checkbox"/>	Leverage	<input type="checkbox"/>		TOTAL	<input type="checkbox"/>	%
<input type="checkbox"/> If under \$200,000, waive presentation?								



**Environment and Natural Resources Trust Fund (ENRTF)  
2019 Main Proposal Template**

**PROJECT TITLE:** Community tree canopy assessment and diversity survey

**I. PROJECT STATEMENT**

A tree’s canopy provides exponential environmental and financial benefits to a community over time and it is imperative for communities to know where their canopy cover is located, how it is changing over time, and the makeup of the tree species within their community. Each of these components are required for a community to make practical decisions and plan for the future. Working in partnership with the University of Minnesota, this project will provide canopy assessments, statistically sampled tree surveys, and an analysis of community tree benefits for 350-400 communities statewide.

**II. PROJECT ACTIVITIES AND OUTCOMES**

**Activity 1:** *Community forest tree canopy and diversity assessment*

The Department of Natural Resources will conduct this project in collaboration with the University of Minnesota to assess community forest resources and their impact to state citizens.

The Department of Natural Resources will conduct this project in collaboration with the University of Minnesota to produce maps showing the extent, structure, and types of community forests throughout Minnesota. This project will look at rates of change in community forests for the years of 2010, 2015, and 2020 statewide for municipal areas with populations over 1,000. These maps will be produced from 1 meter or better spatial resolution imagery obtained from multiple sources. The Minnesota statewide LIDAR dataset, and other partial LIDAR datasets, will be included if available for the specified dates. The compiled imagery will be processed using state-of-the-art Object-Based Image Analysis (OBIA) methods to produce maps that are accessible and useable to communities throughout the state who don’t otherwise have these resources. Maps developed will be provided to communities throughout the state so that communities can make management decisions based on where canopy is, where it has changed, and where they can prioritize their management efforts.

Statistically sampled tree surveys will provide an overview of a community’s tree species diversity and age class allowing communities to develop planting plans and understand the potential risk for invasive pests like emerald ash borer. This data will be analyzed through the U.S. Forest Service iTree software to quantify the environmental and financial benefits of the trees in each community’s forest such as gallons of stormwater mitigated and financial estimates of energy savings.

**ENRTF BUDGET: \$803,224**

<b>Outcome</b>	<b>Completion Date</b>
<i>1. Maps will be developed and assessed to look at changes in forest canopy and impervious surface over time for communities throughout the state.</i>	<i>Summer 2020; Spring 2021</i>
<i>2. Approximately 350-400 statistically sampled tree surveys will be completed for community forests statewide.</i>	<i>Fall 2020</i>

**Activity 2:** *Dissemination of environmental and economic impacts*

The Department of Natural Resources will create user-friendly online format for public data accessibility of resources assessed and the quantified benefits of those resources. Presentations will be offered throughout the state to discuss results.



**Environment and Natural Resources Trust Fund (ENRTF)  
2019 Main Proposal Template**

The Department of Natural Resources will quantify community forest impacts to the state utilizing iTree, a state-of-the-art software developed by the U.S. Forest Service to measure the benefits and impacts of community forests.

**ENRTF BUDGET: \$111,223**

<b>Outcome</b>	<b>Completion Date</b>
1. <i>Development of online dissemination tool.</i>	<i>Winter 2021</i>
2. <i>Quantify value of environmental and economic benefits of community forests statewide: energy conservation, air quality, CO2 and stormwater mitigation.</i>	<i>Spring 2021</i>
3. <i>Outreach and workshops about the dissemination tool and environmental benefits.</i>	<i>Spring 2021- Summer 2021</i>

**III. PROJECT PARTNERS:**

**A. Partners receiving ENRTF funding**

<b>Name</b>	<b>Title</b>	<b>Affiliation</b>	<b>Role</b>
Gary Michael, Jennifer Corcoran, & Unclassified Staff	Norther Region Forestry Administrative Supervisor and Unclassified Staff in Forestry Division	Minnesota Department of Natural Resources	Contract management, grant reporting, communications, education and outreach, web tool development, and unclassified staff supervision.
Joe Knight	Associate Professor	University of Minnesota	Mapping and canopy analysis.

**B. Partners NOT receiving ENRTF funding**

<b>Name</b>	<b>Title</b>	<b>Affiliation</b>	<b>Role</b>

**IV. LONG-TERM- IMPLEMENTATION AND FUNDING:** This project will remain as an available resource in perpetuity.

**V. TIME LINE REQUIREMENTS:** This project is a proposed three-year project.

**VI. SEE ADDITIONAL PROPOSAL COMPONENTS:**

- A. Proposal Budget Spreadsheet**
- B. Visual Component or Map**
- C. Parcel List Spreadsheet**
- D. Acquisition, Easements, and Restoration Requirements**
- E. Research Addendum (not required at proposal stage)**
- F. Project Manager Qualifications and Organization Description**
- G. Letter or Resolution**
- H. Certified Audit or 990 Tax Information**

## 2019 Proposal Budget Spreadsheet

**Project Title: Community tree canopy assessment and diversity survey**

**IV. TOTAL ENRTF REQUEST BUDGET: 3 years**

BUDGET ITEM (See "Guidance on Allowable Expenses")	AMOUNT
<b>Personnel:</b> Department of Natural Resources Project Administrator: \$65,450 (73% salary, 27% fringe) 0.25 FTE - DNR will hire an unclassified Project Administrator who will administer grants and contracts allocated by the project.	\$ 60,450
<b>Professional/Technical/Service Contracts:</b> Department of Natural Resources, Resource Assessment (\$600,000) would be contracted to conduct field work for statistically sampled tree surveys and create user friendly format for public data accessibility. University of Minnesota, Department of Forest Resources (\$242,000) mapping and canopy analysis.	\$ 842,000
<b>Equipment/Tools/Supplies:</b>	\$ -
<b>Acquisition (Fee Title or Permanent Easements):</b>	\$ -
<b>Travel:</b> We will utilize Department vehicles which is the most cost effective means of travel to conduct assistance and grant compliance checks.	\$ 5,000
<b>Additional Budget Items:</b> DNR's direct and necessary costs (~\$1,108 total) pay for activities that are directly related to and necessary for accomplishing appropriated programs/projects. Direct and necessary costs cover HR Support (~\$1,108, Safety Support (~\$230), Financial Support (~\$839), Communication Support (~\$1,251) IT Support (~\$2,510), and Planning Support (~\$1,059)	\$ 6,997
<b>TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =</b>	<b>\$ 914,447</b>

**V. OTHER FUNDS** (This entire section must be filled out. Do not delete rows. Indicate "N/A" if row is not applicable.)

SOURCE OF FUNDS	AMOUNT	Status
<b>Other Non-State \$ To Be Applied To Project During Project Period:</b>	\$ -	
<b>Other State \$ To Be Applied To Project During Project Period:</b>	\$ -	
<b>In-kind Services To Be Applied To Project During Project Period:</b>	\$ -	
<b>Past and Current ENRTF Appropriation:</b>	\$ -	
<b>Other Funding History:</b>	\$ -	

# Community tree canopy assessment and diversity survey

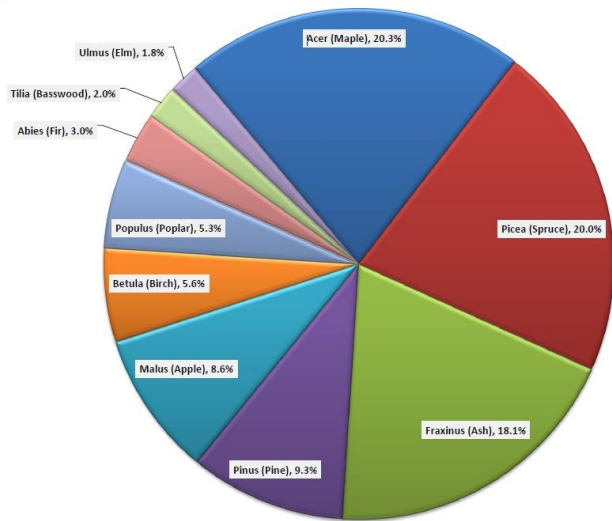
Communities throughout the state don't have the capacity to complete the basic tree resource assessments needed to make practical decisions when managing their community forest. This project provides assessments to all communities with populations of 1000 or more.

**For communities to make practical decisions and plan for the future they need to know:**

## The makeup of their tree species

### DNR 2010 COMMUNITY TREE SURVEY

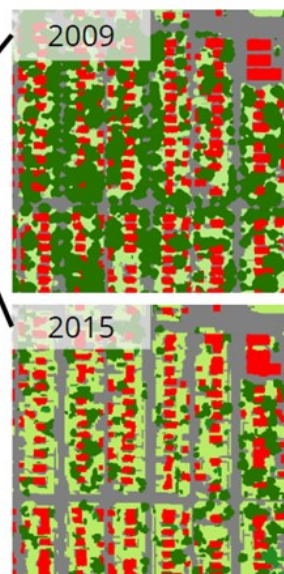
Top Ten Tree Genera for City of Hibbing, St. Louis County



## The location of their trees canopy cover

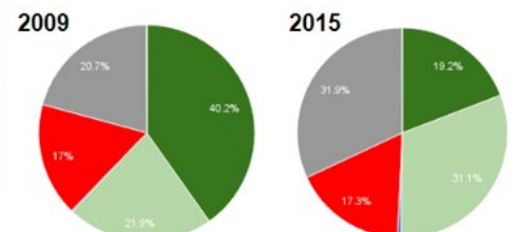


## The change in their canopy over time



150 acres of  
Tree Canopy Loss

Urban tree canopy loss due to tornado blowdown



- Tree Canopy
- Grass/Shrub
- Bare Soil
- Water
- Buildings
- Impervious Surface

## Project Manager Qualifications and Organization Description

**Organization Description:** The Minnesota Department of Natural Resources (DNR)'s mission is to work with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life.

**Project Responsibilities:** The project manager will be responsible for providing overall program management and technical direction for the project; directing project staff, contracting for professional services and grant contracts in support of the program; coordinating with project partners; preparing and submitting work plans, updates and final reports.

**Project Manager:** Valerie McClannahan

### Education

**Bachelor of Science, Horticulture**

Emphasis on Sustainable Agriculture, Minor in Urban Forestry

*Graduated December 2011*

University of Minnesota, St. Paul, MN

**Master of Education**

Emphasis on Adult Education

*Graduated December 2016*

University of Minnesota, St. Paul, MN

### Qualifications

**Senior Planner – Urban and Community Forestry Program and Grant Manager** *03/2016-Present*  
*Minnesota Department of Forest Resources, St. Paul, MN*

Assist the Statewide Urban and Community Forestry programs within the Division of Forestry to ensure shade tree and community forest resources are maintained and managed to enhance the physical, social and economic well-being of the state's communities.

**Volunteer and Program Coordinator**

*University of Minnesota, St. Paul, MN*

*01/2012-03/2016*

Built relationships with municipalities, non-profits, UMN Extension, and Soil and Water Conservation districts and coordinated input to develop unique programs and education courses that enhanced community forests statewide.

### Committee Work

**Minnesota Society of Arboriculture**

President, manager of staff and agency liaisons

Vice President, manager of Programs and Education

*01/2018-Present*

*01/2015-12/2017*

Work collaboratively to advance the practice, science, and technology of tree care through education.