City of Shawano

Urban Tree Canopy (UTC) Analysis

What is the Urban Forest and Urban Tree Canopy?

The **Urban Forest** consists of all public and private trees and shrubs in our community. This includes trees in yards, parks, open spaces, along streets and other land where trees are present. One way to understand the value of urban forests is by envisioning the layer of leaves, branches and tree stems when viewed from above. This layer is called **Urban Tree Canopy (UTC)**.

Why is Urban Tree Canopy important?

While we may not think of city trees as a typical "forest," these trees provide valuable services and benefits.

Trees in our community:

- **Reduce storm water runoff**
- **Lower summer air temperatures**
- **Reduce air pollution**
- **Reduce heating and cooling costs**
- **Enhance property values**
- **Provide wildlife habitat**
- **Improve health and wellbeing**
- **Improve learning and concentration**
- **Provide aesthetic benefits**

UTC benefits can be quantified. A single large tree can provide approximately $76 in average annual net benefits, $3,000 in benefits over a 40-year period. An increase in UTC brings an associated increase in benefits.

How much Urban Tree Canopy does Shawano have?

UTC analysis for Shawano shows[1]:

- **An existing tree canopy of 33% (1,466 acres)**

- **Trees could potentially cover an additional 44% (1,945 acres) of the city's land surface. These "Possible UTC" areas include grass, agriculture land, and impervious surfaces (e.g., parking lots, paved playgrounds & ROW).**

- **The remaining 23% (991 acres) of the city 's area is buildings, streets, water and other permanent features and is generally unsuited to UTC improvement.**

Impervious **6%**
Agriculture **7%**
POSSIBLE UTC
Grass & Shrubs **31%**
33% Tree Canopy
18% Structures, Streets
5% Water
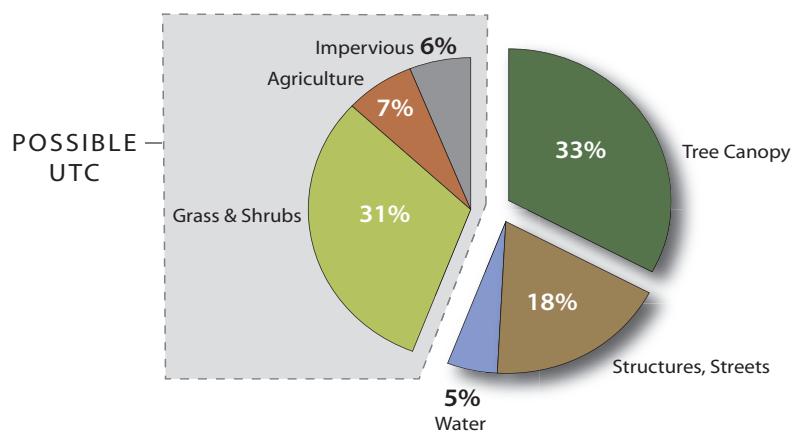
Many factors determine where best to plant urban trees. UTC analysis shows where additional trees will have the greatest positive impact.

UTC analysis for other metropolitian areas shows:

Green Bay Metro Area[2]:		Fox Valley Metro Area[3]:	
Tree Canopy	24%	Tree Canopy	20%
Possible UTC	56%	Possible UTC	55%

[1] Analysis was conducted using iTree Canopy. iTree Canopy offers a quick and easy way to produce a statistically valid estimate of land cover types (e.g., tree cover) using aerial images available in Google Maps. The iTree Suite is a free state-of-the-art, peer-reviewed software suite from the USDA Forest Service. www.itreetool.org

[2] Allouez, Ashwaubenon, Bellevue, DePere, Green Bay, Hobart, Howard

[3] Appleton, Greenville, Kaukauna, Kimberly, Little Chute, City of Menasha, Town of Menasha, Neenah

Why should Shawano set goals for UTC?

As urban development expands, it is increasingly important to balance growth with environmental wellbeing. To maximize UTC benefits, communities should set goals to protect, maintain and enhance their entire urban forest. Careful planning and goal setting are necessary to retain as much mature tree canopy as possible in areas with development pressure and to expand and sustain canopy in already urbanized areas. UTC goals can emphasize environmental quality (stormwater, air quality, carbon offsets), livability and economic vitality.

Though many communities have adopted land use strategies to mitigate sprawl, few have developed land cover strategies like UTC to mitigate urbanization effects.

Additional Resources

Urban Tree Canopy Assessment, Northern Research Station, USDA Forest Service, **http://nrs.fs.fed.us/urban/utc/**

Watershed Forestry Resource Guide, Urban Tree Canopy, **http://www.forestsfor watersheds.org/urban-tree-canopy/**

Urban Natural Resources Institute, **http://www.unri.org/webcasts/archive/march-2011a/**

Society of Municipal Arborists, Urban Forestry BMPs, **http://www.urban-forestry.com/sma-urban-forestry-bmps**

How to Set UTC Goals

Effective UTC goal setting requires involvement and commitment by municipal leaders and staff, local business community, neighborhood groups and citizens. The process generally includes four steps:

- **Assess Current UTC**
  — Can use iTree Canopy Analysis or GIS to arrive at UTC baseline.

- **Assess Possible UTC**
  — Identify opportunities on both public and private land.

- **Adopt Goals Based on Assessments**
  — If possible, institutionalize goals in appropriate ordinances, policies, or community master plan.

- **Develop Implementation Plan**
  — Identify strategies to meet goals based on available resources, political climate and stakeholder needs. Produce timeline and identify parties responsible for each strategy.

Potential Strategies to Implement UTC Goals

- **Plant New Trees**
  — Identify and prioritize planting sites community-wide.
  — Assess species diversity needs.
  — Identify how trees will be maintained.

- **Protect & Maintain Existing Trees**
  — Adopt tree protection ordinance and conservation easements.
  — Produce a tree management plan.
  — Ensure proper pruning in utility corridors.

- **Minimize & Restore UTC Lost to Age, Mortality & Land Conversion**
  — Specify strategies within Comprehensive Land Use Plan (e.g. Smart Growth).
  — Adopt subdivision, zoning, and landscaping ordinances.
  — Identify impact from EAB and potential management strategies.

- **Promote Public Education & Awareness**
  — Promote tree benefits (e.g., community website, newsletter, water bill insert)
  — Promote proper tree planting (e.g., Arbor Day, workshops)
  — Develop or participate in campaigns (e.g., First Downs for Trees, Taking Root in Oshkosh)

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