Canton, Ohio Uses i-Tree Tools to Fulfill USFS Landscape Scale Restoration Grant

By Kristine Griffith, Civil Engineering Technician, City of Canton Engineering Department

City Trees Editorial Review Committee member Steve Cothrel saw Kristine Griffith's presentation at the 20th Annual City Foresters' Symposium in Columbus, Ohio. He was impressed with various aspects of the presentation and project it highlighted. In this case, the Canton City Engineer's Office worked with the City Arborist, but Engineering led the effort because they had the project management experience and technological resources (eg, with GIS) to do so.

Cothrel says, "I consider this a notable success story because they secured a USFS grant to do the inventory and planting; they used free i-Tree tools to gather the data needed to justify the creation of an urban forestry program from scratch; and Kristine used excellent graphics in her presentation." We asked Kristine to write about the project for *City Trees.*

In October 2016, the City of Canton, Ohio, was awarded a Landscape Scale Restoration (LSR) Grant from the U.S. Forest Service, administered by the State of Ohio. The grant was titled *LSR: Integrating Tree Planting within a Framework of Regulatory Compliance and Economic Development in Ohio's Largest Watershed of the Ohio River Basin* and its purpose was to fund strategic planting of trees throughout the City. The grant funds totaled $196,058 with a local match requirement of $230,000. (An additional $10,000 was awarded to the City in January, 2019.)

Specific criteria of the grant included:

- Planting trees along specified waterways

- Targeting low – to moderate-income areas of the City

- Increasing tree canopy cover throughout the City

- Planting along major road and trail corridors

- Utilizing i-Tree tools >>

Looking back to 2013, the Canton City Engineer was very proactive and understood the myriad benefits of the urban forest. He knew that in order to maintain and improve Canton's urban forest, it was time to hire an arborist. Therefore, in 2013, the City's first arborist came aboard and worked very closely with Engineering staff. From 2013-2015, the newly created Forestry Department's main focus was to remove hazardous trees within the City's rights-of-way to ensure public safety. The removal of dead and hazardous trees freed up space to plant the most appropriate trees in those sites.

Planning

When the City was awarded the LSR grant, I was selected to be the project manager. I knew at the time there was no tree inventory in place or assessment of the City's canopy cover. This posed the big question: "Where do I start?" Part of the requirements of the grant were to utilize i-Tree tools. In this case, the entire area within the City's corporation limits was analyzed for canopy cover. Using i-Tree Canopy and i-Tree Landscape, I was able to incorporate the canopy cover results into a GIS-based map for further analysis.

Piece by piece, I overlaid data onto the map showing stream corridors, census information (for low – to moderate-income areas), and major road and trail corridors. The map was a visual representation of the areas of the City where the trees must be planted to meet grant requirements. In addition, City road rights-of-way widths and tree lawn widths were analyzed to ensure the trees were planted in accordance to City standards (a minimum of a five-foot-/1.5-m-wide tree lawn). Also taken into consideration were locations of existing sewer, water, and gas lines as well as overhead utilities. We wanted to ensure longevity of the trees through proper site assessment and planting.

In consultation with a local nursery, the Canton City Arborist selected species of trees for planting. The selections were based on considerations including aesthetics, height and width at maturity, non-fruit bearing (or small persistent fruits), absence of thorns, site adaptability, hardiness zone, and tolerance of salt and other urban conditions. Once the list of trees was developed, each individual tree was plotted onto a map, which became the start of the City's tree inventory.
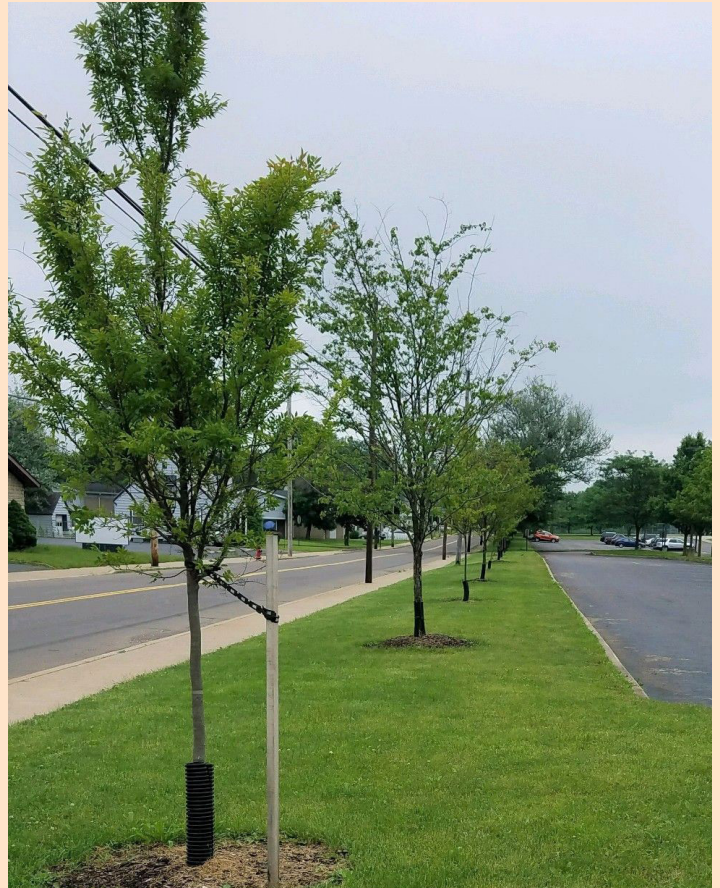

Lacebark elms (*Ulmus parvifolia*) and hawthorns (*Crataegus viridis* 'Winter King') planted along Sherrick Road in Canton.

Tree species breakdown from Canton's first inventory.

#	tree species	#	tree species
152	Cherry	30	Hornbeam
120	Maple	24	Locust
116	Pear	21	Willow
83	Lilac	17	Serviceberry
69	Hawthorn	14	Linden
58	Crabapple	12	Sycamore
50	Spruce	4	Birch
46	Elm	3	Oak
40	Ginkgo		

Barchart of tree locations.
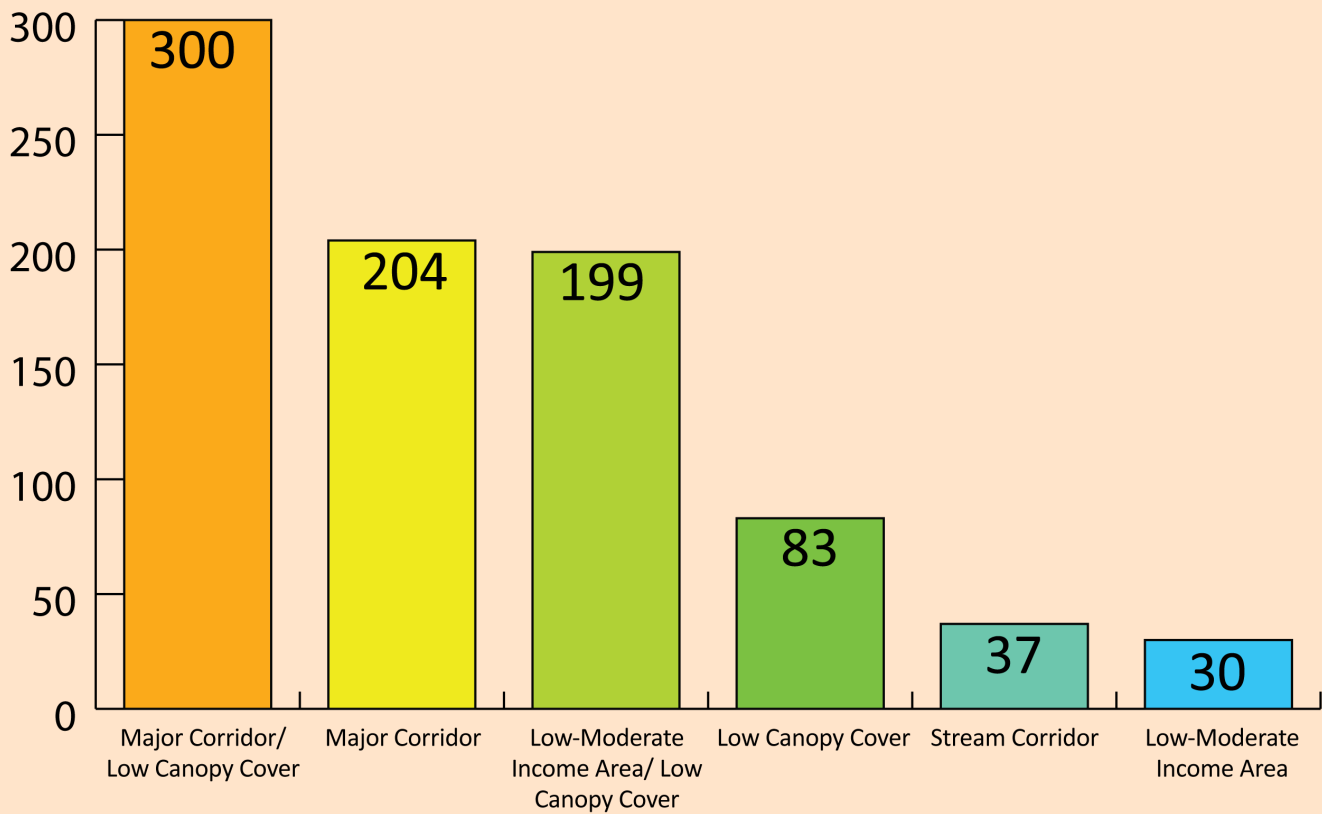
Implementation

Considering the amount of funding available as well as the grant deadline, I knew the plantings would be extensive and require a public bidding process. With guidance from an Ohio DNR Regional Urban Forester, I developed bid specifications that incorporated City standards and tree planting stipulations. In addition, it was specified that the City had the right to inspect and reject trees prior to planting, and a two-year warranty was required with every tree. Exhibits to the bid documents included maps that were created in the planning phase so there would be no confusion as to tree species and the sites where they were to be planted.

The first public bid (Phase I) occurred in October 2017 and consisted of planting 117 trees. The second public bid (phase 2) occurred in April 2018 and consisted of 334 trees. During the plantings in both phases, the City Arborist and I inspected the stock and how it was handled to ensure our specifications were being met. Phase I and Phase 2 of the project utilized $150,000 of the grant funds.

The remaining funds, which must be spent by May 2020, are currently being utilized on a job-by-job basis. This method allows for local contractors who didn't have the resources to compete in the public bid process for Phase I and Phase 2 to have a chance to still participate in the project. This also gives the City the chance to develop relationships with multiple nurseries and to incorporate the trees into other City projects.

Next Steps

The City of Canton is thankful to have been the recipient of the Landscape Scale Restoration Grant. As a result of this grant, over 700 new trees have been planted to date. These new trees have been inventoried in the City's GIS and can be analyzed using i-Tree tools to monitor growth and benefits such as rainfall intercepted, carbon dioxide sequestered, and ozone removed over their lifetime. This powerful information can be used to help secure additional funding and to demonstrate the multitude of benefits trees provide to City residents.