

## **2020 i-Tree Academy Course**

### **Project Summary for Shane M. DeGroy**

CSAH 152 in Brooklyn Center, Hennepin County has recently been reconstructed, and the county plans to densely plant a diverse selection of trees along part of the corridor. I explored what benefits these trees provide, how these benefits fit into the context of the surrounding area, and make a case for replicating this planting style in the future. To do this, I utilized both i-Tree Landscape and i-Tree Design.

The stretch of CSAH 152 that we are focusing on runs north from Highway 100 until it intersects with CSAH 10- it is about 3/5 of a mile long. Using i-Tree Landscape, I determined that the two census blocks on either side of the corridor have 3.5% canopy cover, and 51.7% impervious surface cover.

If the county moves forward with its plan to plant 137 trees along this stretch, they will provide \$1,036 worth of benefits of the next ten years. Of course, these are only the quantifiable benefits such as CO<sub>2</sub> reduction and stormwater avoidance, and doesn't factor in other benefits such as stress reduction, traffic calming, decreased road maintenance costs, and reduction of the urban heat island effect. The trees will intercept a total of 145,450 gallons of rainfall and help avoid 42,259 gallons of stormwater runoff, which is especially valuable in this area given the high impervious surface cover due to the surrounding parking lots. It is also worth noting that trees produce more benefits as they mature, and these numbers will only increase after this ten-year period.

Why focus on ten years? Well, according to a 2007 rapid assessment of ash and elm trees by the Minnesota Department of Natural Resources, 10% of the community's tree canopy is comprised of ash trees. Over the next ten years they will likely all be dead due to emerald ash borer (EAB), an exotic, invasive pest that kills ash trees. This is one of the reasons that the county is striving to plant densely and diversely along this corridor. The 137 trees in the planting will be from 15 different species (most of which are underrepresented in the area), which will vastly increase the canopy diversity along the stretch.

In the first ten years the trees will provide \$1,036 worth of quantifiable benefits, but they will provide a total of \$5,944 over the following fifteen years, for a total of \$6,980 over twenty-five years. There is a small upfront cost to this type of dense and diverse planting, but it more than pays for itself over time, even when not considering the unquantifiable benefits. Trees are the only public infrastructure that increases in value over time, and should therefore be looked at as an investment, rather than a cost.

With impervious surfaces increasing along with global warming, so too is the urban heat island effect; this is only being exacerbated by the loss of canopy due to development and exotic pests and diseases. With this reality, it is my suggestion that local governments adopt the strategy of investing in dense and diverse tree plantings along public right-of-ways to curtail these issues.