Sidney

City street and park trees play a vital role in Montana communities. They serve as a living component of the urban infrastructure. These trees mitigate the negative effects of urbanization and development, and enhance the quality of life within the community. **Sidney's** street trees provide more than **$308,222** in annual benefits (**$145** per tree). These benefits include air quality improvements, energy savings, stormwater runoff reduction, atmospheric carbon dioxide reduction, and aesthetic contributions to the social and economic health of the community. Replacement of these trees with trees of similar size, species, and condition, would cost **$3,319,460**. While many benefits of trees are not quantifiable, these values highlight the worthwhile investment of public funds into our street tree resource.

Sidney Street Trees Provide $308,222 Per Year in Benefits

Quick Facts

2,125 Trees

$3.3 Million Replacement Value

81 Unique Species

65.7% in Good Condition

3.2 Million gallons Stormwater Runoff Reduced Annually

1,462 lbs Air Pollutants Removed Annually

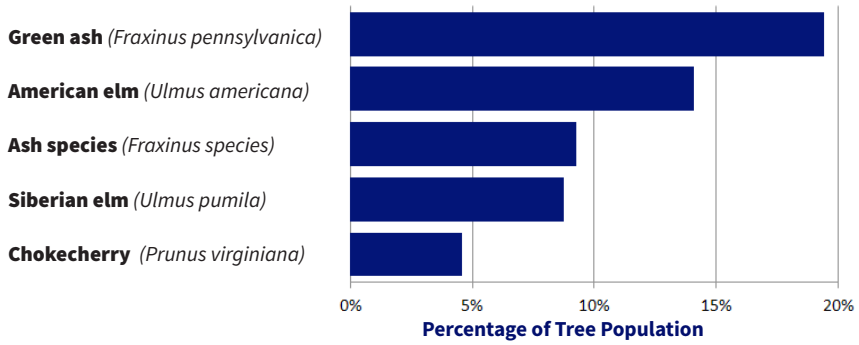
222,257 Kwh & 20,061 Therms of Energy Saved Annually

$233,037 Property Values

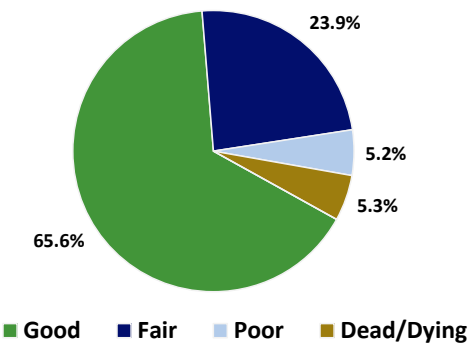
305,408 lbs Carbon Dioxide Sequestered Annually

379,859 lbs Carbon Dioxide Avoided Annually[1]

Top 5 Most Common Species



Condition of Community Forest

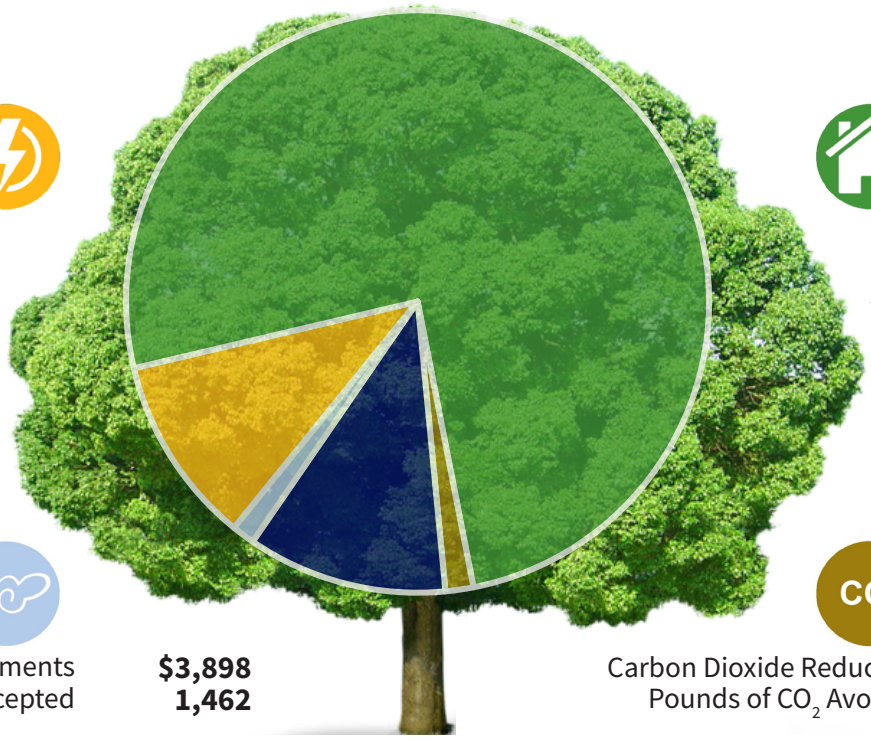


1: Avoided Carbon: Avoided carbon is a result of reducing energy consumption. The avoided value represents carbon that would have been created from the production of additional energy.

2016 analysis was conducted using iTree Streets. iTree Streets is a street tree management and analysis tool for urban forest managers that uses tree inventory data to quantify the dollar value of annual environmental and aesthetic benefits. The iTree Suite is a free state-of-the-art peer reviewed software suite from the USDA Forest Service. www.itreetool.org. Grant funding for this project provided by the US Forest Service.

Community Forest Benefits

Some of the many benefits trees provide: • Reduce Stormwater Runoff • Protect Water Quality • Reduce Air Pollution • Reduce Energy Demands • Lower Summer Air Temperature • Improve Human Health and Wellbeing • Increase Workplace Productivity • Provide Wildlife Habitat • Enhance Property Values • Improve Concentration and Academic Achievement • Provide Beauty and Natural Aesthetics • Reduce Atmospheric Carbon Dioxide



Energy Savings **$32,322**

Electrical kWh Saved **222,257**

Natural Gas (Therms) Saved **20,061**

Property Value Increased **$233,037**

Air Quality Improvements **$3,898**
Pounds of Pollutants Intercepted **1,462**

Carbon Dioxide Reduction **$4,766**
Pounds of CO_2 Avoided **379,859**

Stormwater Runoff Reduction **$34,198**
Gallons of Water Reduced **3,166,527**

Diversity

Best forestry practices suggest that no single species should represent more than 10% of the total population, and no single genus more than 20%. The dominance of any single species or genus can have detrimental consequences in the event of storms, climate change, drought, disease, pests, or other stressors that can severely affect an urban forest and the flow of benefits and costs over time.

In **Sidney, green ash (19.4%)** and **American elm (14.1%)** are overrepresented. Additionally, the ash genus including green ash, white ash and ash species (29.7%) is overabundant.

Pest Alert

The Emerald Ash Borer (EAB) is an invasive beetle pest native to eastern Asia which threatens significant fiscal and environmental impacts. While not yet identified in Montana, the beetle has been spreading rapidly across the United States since its introduction. EAB larval feeding disrupts the flow of nutrients and water, effectively girdling (and eventually killing) the tree. This feeding behavior combined with their fast reproduction cycle means that EAB is highly destructive to ash populations.

29.7% of **Sidney's** community forest is comprised of ash species. This population represents **39.3% of all leaf surface area** in the community forest, and **37.1% ($114,424) of annual environmental benefits**.