Community Forest Summary

MONTANA DNRC
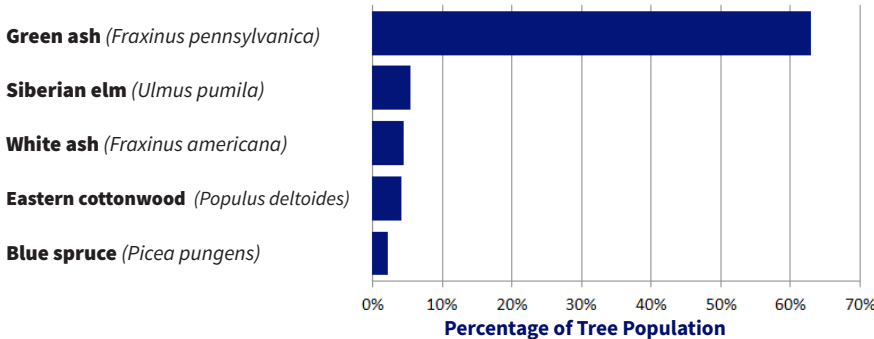MT DEPARTMENT OF NATURAL RESOURCES & CONSERVATION

Columbus

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. **Columbus'** street trees provide more than **$234,451** in annual benefits (**$197** 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 **$2,792,760**. While many benefits of trees are not quantifiable, these values highlight the worthwhile investment of public funds into our street tree resource.

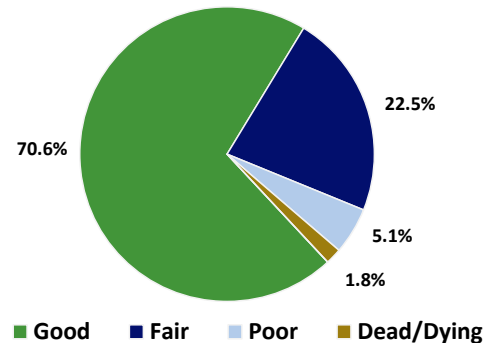## Columbus Street Trees Provide $234,451 Per Year in Benefits

Quick Facts

1,192 Trees

$2.8 Million Replacement Value

51 Unique Species

70.6% in Good Condition

2.4 Million gallons Stormwater Runoff Reduced Annually

1,322 lbs Air Pollutants Removed Annually

179,325 KWH & **16,104 Therms** of Energy Saved Annually

$174,177 Property Values

295,697 lbs Carbon Dioxide Sequestered Annually

345,488 lbs Carbon Dioxide Avoided Annually[1]

Top 5 Most Common Species

Green ash (*Fraxinus pennsylvanica*)
Siberian elm (*Ulmus pumila*)
White ash (*Fraxinus americana*)
Eastern cottonwood (*Populus deltoides*)
Blue spruce (*Picea pungens*)

Percentage of Tree Population

Condition of Community Forest

70.6%
22.5%
5.1%
1.8%

■ Good   ■ Fair   ■ Poor   ■ Dead/Dying

US FOREST SERVICE DEPARTMENT OF AGRICULTURE

DAVEY RESOURCE GROUP
A Division of The Davey Tree Expert Company

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
$26,005
Electrical kWh Saved
179,325
Natural Gas (Therms) Saved
16,104

Property Value Increased
$174,177

Air Quality Improvements $3,604
Pounds of Pollutants Intercepted 1,322

Carbon Dioxide Reduction $4,481
Pounds of CO_2 Avoided 345,488

Stormwater Runoff Reduction **$26,183**
Gallons of Water Reduced **2,424,354**
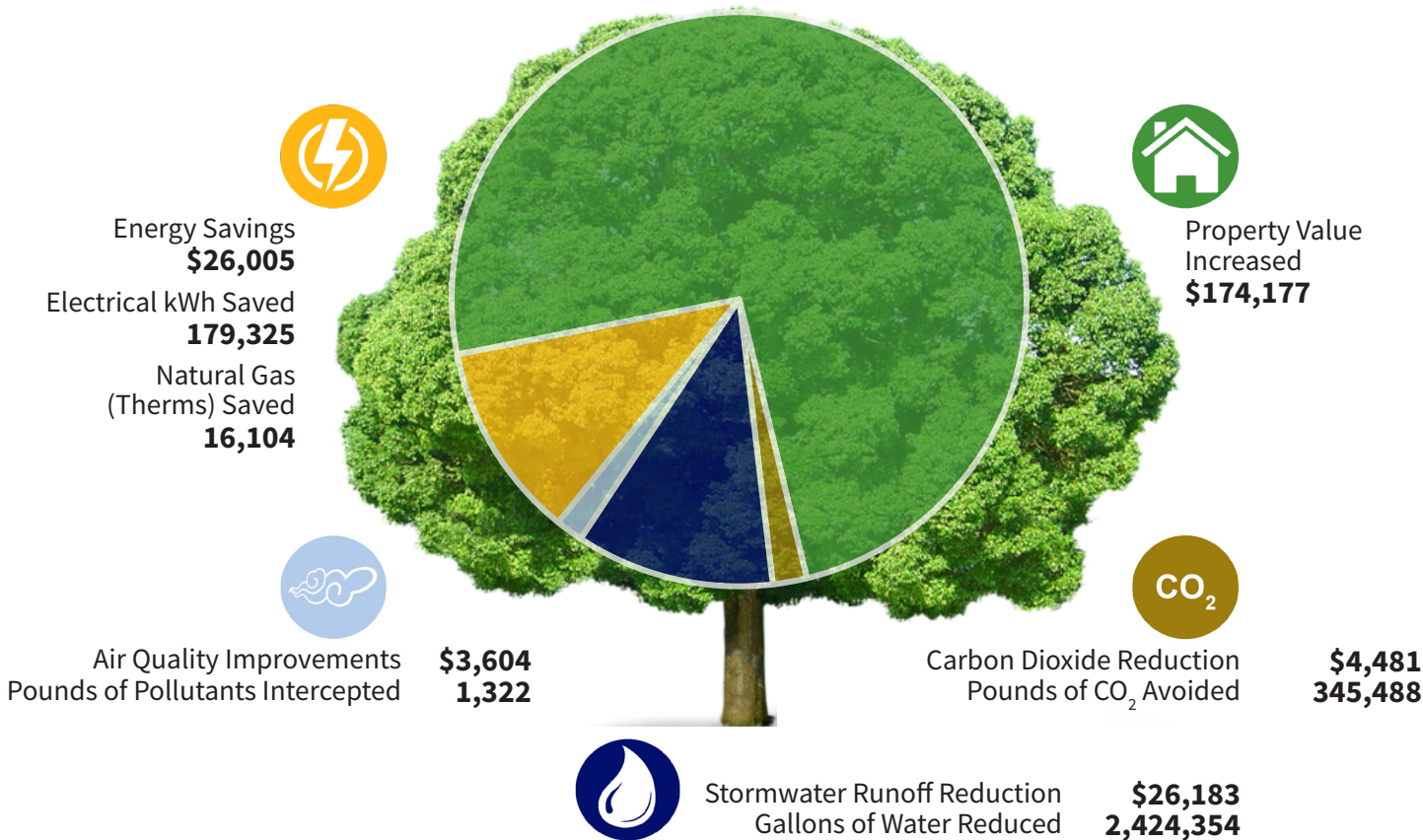
Diversity

Best forestry practices state 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 **Columbus**, **green ash (63%)** is overrepresented.

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.

68.1% of **Columbus'** community forest is comprised of ash species. This population represents **77.7% of all leaf surface area** in the community forest, and **75.6% ($177,293) of annual environmental benefits**.