

## Morgantown Tree Board



### Urban Trees as Public Utilities

Morgantown's street and park trees constitute an important component of the City's infrastructure – its "green infrastructure". Trees in commercial, residential, and park areas contribute significant benefits to a city's citizens. Documented benefits of the urban trees include reduced heating and cooling costs and reduced storm water runoff.

This latter benefit is becoming increasingly important in Morgantown, as the Morgantown Utility Board is grappling with urban sprawl and the associated change in water flow (hydrology) in and around the City. Trees, by their nature, consume water and help offset stormwater flow events. Trees lose water vapor from their leaves by transpiration. A newly planted 2" diameter tree uses approximately 15 gallons of water a day. A mature tree, depending on species, may use up to 800 gallons of water a day. In addition, tree canopies intercept rainfall, thus reducing peak water flow events. These changes in hydrology brought about by urban trees can be used to offset the costs of infrastructure associated with urban development.

A city's trees are thus important assets, requiring care and maintenance along with other components of the city's infrastructure. The City and its citizens need to be prepared for maintenance and replacement of the urban forest as time passes.

Since 1995, the Morgantown Tree Board (MTB) has worked to develop a comprehensive understanding and management plan for Morgantown's urban forest. MTB activities include tree replacement, hazard tree assessment, and memorial tree plantings. Further, the MTB works toward increasing awareness of the benefits of urban trees through Arbor Day activities, newspaper articles, and other educational activities. The MTB has been working with City agencies and citizens to improve awareness and appreciation of the benefits of Morgantown's street and park trees.

### Morgantown Tree Board Activities in 2004

In 2004, the Morgantown Tree Board continued and expanded several initiatives aimed at enhancing Morgantown's urban forest infrastructure:

1. Grants for Tree Planting and Care. In 2004, the MTB acquired \$15,400 in grant money from the WV Division of Forestry, matched by funds from City Council (total working budget of \$30,800). Funds from this program and previous years' programs were used to:

- Hire a contract Arborist – Joel Hollen
- Quality-check Morgantown Street Tree Inventory
- Support the City's Arbor Day Celebrations in 2004 and 2005
- Plant trees in Downtown parking lots, in Greenmont, Evansdale, South Park, and in First Ward.
- Plant trees in the Wharf District and at WVU

The hiring of a contract Arborist was a substantial step forward for an overall tree management plan for the City of Morgantown. The arborist, Joel Hollen worked with the MTB and the Street Department to quality check the inventory, receive training on the operation of the database system and implement pruning of past MTB plantings as well as plantings at Ruby McQuain Memorial Park.

Having a point-person for the MTB was important since the work experiences for volunteers of the MTB have changed substantially in the past year, decreasing volunteer time allocated to MTB activities.

2. Arbor Day Celebration. Arbor Day festivities and tree planting were held at the Wharf District parking garage in Downtown Morgantown in April 2004. Observance of Arbor Day included speeches by tree experts from the State Division of Forestry and West Virginia University. Again this year, the MTB partnered with BOPARC and presented a slightly larger suite of activities than in past years. Arbor Day activities included:

- A demonstration on tree planting and early care
- Children's activities led by students from the WVU chapter of the Society of American Foresters
- Tree seedling giveaways
- Educational displays by the US Forest Service, Greenspace Coalition, and the Department of Biology at WVU
- Awarding of Morgantown's Tree City USA award

At this ceremony, the MTB received the International Society of Arboriculture's **Gold Leaf Award** for the Best Arbor Day Ceremony in the State of West Virginia in 2003.

Following the Arbor Day activities, citizens helped MTB members plant 22 trees throughout Morgantown at Sixth Street (3), Wharf parking garage (15 - these were planted after landscaping), Evansdale (1), and South Park (3).



3. Additional Tree Plantings. MTB also facilitated the planting of large caliper tree stock Downtown on the corner of University and Willey Street (one 6” diameter sugar maple). Four trees were planted again in front of the Public Safety Building, after the lindens at that site died from poor installation and site problems. Twenty-six trees were planted in the Greenmont neighborhood. Nine trees were planted in the Spruce Street parking lot. Nine sycamore trees were planted at Hazel Ruby McQuain Park as a memory grove for Allen & Mary Dickey.

4. Hazard Tree Assessments. MTB members are called on by the Street Department to assess the hazard potential of trees in the City rights-of-way. This year, about 12 trees were visited and inspected. Reports from these inspections were filed with the Morgantown Street Department.

5. Public Assistance. The Tree Board often receives calls directed from City Hall concerning tree issues. While not necessarily related to public tree issues, members of the Tree Board return calls and visit people who have concerns about their trees. In 2004, consultations took place with citizens on Walnut Street, Park Street, and Grand Street.

6. Tree Care Education. The MTB began partnering with WVU Extension to develop a “No Topping” campaign to educate the public about the dangers of tree topping and improper care. The campaign included newspaper ads and Extension information pamphlets.

## Summary

- Hosted Arbor Day Celebration – received the Gold Leaf Award for the best Arbor Day celebration in WV in 2003

Trees Planted Throughout Morgantown: 57

Hazard Trees Assessed: 12

Ruby McQuain Park Trees Pruned

External Funds Acquired: \$15,400

## **Appendix: Benefits of Trees in Cities**

(Source: *Benefits of Urban Trees. Urban and Community Forestry: Improving Our Quality of Life.* USDA Forest Service, Southern Region, Forestry Report R8-FR17, April 1990).

### **Infrastructure and Economy**

- ↪ Trees are an important asset for cities and towns, just like other infrastructure (roads, sewers, public buildings, etc.). They require care and maintenance just like other public property.
- ↪ Trees have been shown to increase property values up to 25%.
- ↪ Trees enhance community economic stability by attracting businesses and tourists.
- ↪ People linger and shop longer along tree-lined streets.
- ↪ Apartments and offices in wooded areas rent more quickly, have higher occupancy rates, and tenants stay longer.
- ↪ Businesses leasing office space in wooded developments find their workers are more productive and absenteeism is reduced.
- ↪ A community's urban forest is an extension of its pride and community spirit.

### **Character and Beauty**

- ↪ Trees add natural character to cities.
- ↪ Trees provide color, flowers and beautiful shapes, forms, and textures.
- ↪ Trees screen harsh scenery.
- ↪ Trees soften the outline of masonry, metal, and glass.
- ↪ Trees can be used architecturally to provide space definition and landscape continuity.
- ↪ Trees create feelings of relaxation and well-being.
- ↪ Trees provide privacy and a sense of solitude and security.
- ↪ Trees surrounding hospitals have proven to be responsible for shortened post-operative recovery.

## **Air Pollution Reduction**

- ↪ Trees help remove, trap, and hold particulate pollutants (dust, ash, pollen, and smoke) that can damage human lungs.
- ↪ Trees absorb carbon dioxide and other dangerous gases and, in turn, replenish the atmosphere with oxygen.
- ↪ Trees produce enough oxygen on each acre for 18 people everyday.
- ↪ Trees absorb enough carbon dioxide (a “green house gas”) on each acre, over a year’s time, to equal the amount you produce when you drive your car 26,000 miles.

## **Water and Soil Conservation**

- ↪ Trees create organic matter on the soil surface from their leaf litter. Their roots increase soil permeability.
- ↪ Trees reduce surface runoff of water from storms. This is a significant way to manage storm water on a city level.
- ↪ Trees reduce soil erosion and sedimentation of streams.
- ↪ Trees increase ground water recharge that is significantly reduced by paving.
- ↪ Trees intercept chemicals and other contaminants before they reach streams and rivers.
- ↪ Trees reduce wind erosion of soil.

Without trees, cities would need to increase sewage and storm water drainage channels and waste treatment capacities to handle increased runoff.

## **Trees Save Energy**

- ↪ Strategically placed trees can be as effective as other energy saving home improvements, such as insulation and weather tight doors and windows. Trees can help reduce heating and cooling costs.
- ↪ Trees save energy through cooling in the hotter months. Shade trees placed around homes can reduce air conditioning costs up to 30%. Shade trees offer best benefits when: 1. placed on the south and west sides of buildings; 2. hard surfaces such as driveways, patios and sidewalks are shaded to minimize heat load; and 3. deciduous trees (drop leaves in fall) block sun in the summer months and drop leaves and admit sunlight during the winter.

- ⌘ Evergreens (which retain needles all year) can serve as windbreaks and provide an energy savings of 10-50%.

### **Trees Modify Local Climate**

- ⌘ Trees help cool the “heat island” effect in areas built up with many buildings, parking lots, and an abundance of paved surfaces. Heat is stored in these surfaces. Heat islands are 3 – 10 degrees warmer than the surrounding countryside.
- ⌘ Trees reduce air temperature.
- ⌘ Trees increase humidity in dry climates
- ⌘ Trees reduce glare on sunny days
- ⌘ Trees reduce wind speed.