

Regional Tree Canopy Management Air Quality and Climate Benefits

Presentation to

Metropolitan Washington Air Quality Committee
&
Climate, Energy and Environment Policy Committee

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Regional Tree Canopy Workgroup

2011 : Ad-hoc committee formed to implement strategies of the *Urban Heat Island Mitigation/Tree Planting/Canopy Conservation and Management* measure included in 2007 8-Hour Ozone SIP.

2013: RTCW recommends goals and recommendations to CEEPC and CBWRPC

Recommendation #1

“Utilize the full potential of urban forests to mitigate climate change and to address regulatory concerns”

2017: Tree Canopy Management Strategy release

Trees and Air Quality

Vegetation affects local and regional air quality by altering the atmospheric environment directly and indirectly.

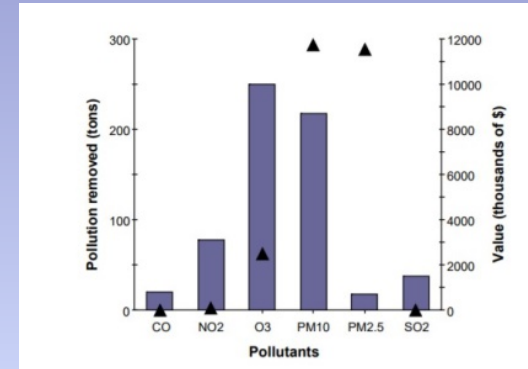
1. Removal of air pollutants (CO, NO₂, O₃, PM₁₀, PM 2.5, SO₂)
2. Ambient temperature reduction and other microclimatic effects
3. Effects on energy use in buildings
4. Reduction of evaporative emissions
5. Emission of volatile organic compounds
6. Tree maintenance emissions

Trees and Air Quality

Washington D.C. (2015)

2,431,000 trees

Pollution removal: 619 tons/year

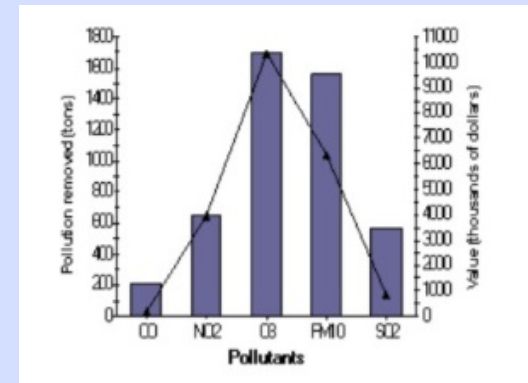


Source: http://caseytrees.epicenter1.com/wp-content/uploads/2017/03/iTree-2015-Report_English.pdf

Fairfax County, Virginia (2010)

20,900,000 trees

Pollution removal: 4,670 tons/year



Source: http://www.fairfaxcounty.gov/dpwes/environmental/ffcounty_ecoreport.pdf

Trees and Carbon Dioxide

Trees help mitigate climate change directly and indirectly by:

1. Sequestering atmospheric carbon (from carbon dioxide) in wood tissue
2. Storing carbon over lifetime of wood tissue
3. Altering energy use in buildings, thereby reducing carbon dioxide emissions from fossil-fuel based power plants

Factors that can influence tree effects:

1. Carbon footprint of nursery production and transportation
2. Carbon footprint of tree removal, tree maintenance, and utility line clearance activities
3. Waste wood utilization

Trees and Carbon Dioxide

Washington D.C. (2015)

Carbon sequestration: 26,700 tons/year (\$1.90 million/year)

Carbon storage: 649,000 tons (\$46.2 million)

Avoided carbon emissions: 2,360 tons (\$168 thousand/year)

Source: http://caseytrees.epicenter1.com/wp-content/uploads/2017/03/iTree-2015-Report_English.pdf

Fairfax County, Virginia (2010)

Carbon sequestration: 218,000 tons/year (\$4.51 million/year)

Carbon storage: 3,879,000 tons (\$80.2 million)

Avoided carbon emissions: 22,900 tons (\$421 thousand / year)

Source: http://www.fairfaxcounty.gov/dpwes/environmental/ffcounty_ecoreport.pdf

Ton: short ton (U.S.) (2,000 lbs)

Multi-functionality of Trees



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- **Air pollution reduction**
- **Carbon sequestration & storage**
- **Altering energy use in buildings**
- **Heat Island mitigation**
- Water quality improvement
- Stormwater reduction

- Stress reduction
- Increases to property values
- Attracts customers to business districts
- Crime reduction
- Wildlife habitat
- Wood products
- Food products
- Noise attenuation

Supporting Strategies, Policies and Programs

- Setting local tree canopy goals and supporting metrics
- Adopting local urban forest master plans
- Tree preservation ordinances and specifications
- Land use planning guidance and development criteria specific to tree conservation
- Outreach programs that encourage proper tree care and planting practices
- Partnerships with non-profit and community-based tree planting groups
- Providing adequate staffing levels and fiscal support for public tree programs
- Demonstrating tree-related BMPs on public lands
- Adopting “right tree in the right place” programs
- Setting minimum canopy requirements for large surface parking facilities
- Encouraging alternative uses of waste wood

All of the above discussed in various levels of detail in the....

DRAFT Tree Canopy Management Strategy

Talked the Talk

Communicates goals and recommendations that local governments can use to conserve, manage and expand their tree canopy to help maximize the environmental health and quality of life experienced in the Greater Washington D.C. Region.

Ready to Walk the Walk

- 1. Establish a **standing forest policy and planning committee***
- 2. Generate a **regional urban forest master plan** through collaboration*
- 3. Identify **regional tree canopy goals** and supporting metrics*

For more information on the Tree Canopy Management Strategy

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RTCW Overarching Goals

1. Protect, manage and expand urban forest assets in order to maximize our region's environmental health and quality of life
2. Optimize the impact of local urban forestry programs through and inter-jurisdictional dialogue, support and collaboration
3. Develop a regional urban forest master plan & canopy goals
4. Inspire the community to take ownership of efforts to protect and expand urban forests
5. Integrate urban forests into regional land use planning

Additional Resource Slide

RTCW Recommendations

1. Utilize the full potential of urban forests to mitigate climate change and to address regulatory concerns
2. Encourage all COG jurisdictions to adopt effective and consistent programs, policies, and practices
3. Establish a forest policy and planning committee to support and guide regional collaboration
4. Keep forested lands forested, intact and ecologically functional
5. Increase the extent & vitality of urban tree canopy while minimizing potential risks and conflicts
6. Develop quantitative and qualitative metrics
7. Encourage public participation in the development of goals, strategies and a common vision
8. Lead by example
9. Build synergistic partnerships with Key Stakeholders
10. Take steps to integrate urban forestry goals and metrics into Region Forward