

Tree Canopy:

Principles for Phase III Watershed Implementation Plans

Growing tree canopy for human health, economic development, and infrastructure

The trees that grace our cities and towns provide innumerable benefits to human and watershed health. We all know that trees give us oxygen, but recent research shows that trees remove over 650,000 tons of air pollution in the US each year. Trees are an important front-line defense that have been shown to reduce air pollution-related deaths and respiratory disease. In the face of changing climatic conditions, trees offer critical shading and cooling effects to reduce the urban heat island effect in cities, lowering heat-related public health risks.

At the same time, the tremendous shading power of trees produces energy savings to homeowners, businesses, local governments, and utilities. Across the country, utilities are investing in “Energy Saving Trees” programs to maximize energy savings. Other economic benefits of community trees include increased home property values, enhanced business activity, and overall community revitalization that occurs when incorporating trees and green space into community development. Tree canopy efforts also create green jobs needed for growing, planting, and managing trees throughout their lifespan, and finally repurposing the urban wood that is created when trees die or need to be removed.

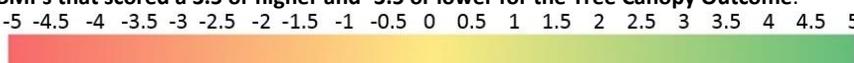
Trees are truly the first and fundamental “green infrastructure” of communities. Green stormwater infrastructure BMPs are designed to try to mimic the function of a natural forest, and community trees are a critical piece of the system. With each rainfall, trees intercept and slow the delivery of stormwater and pollutants to waterways, while also filtering and taking up pollutants. While the effect of each individual tree may be modest, the collective effect of the entire canopy makes a significant and cost-effective contribution to addressing a community’s stormwater and flooding challenges.

Best Management Practices with Tree Canopy in Mind

Incorporating tree canopy into project design does not necessarily require a wholesale change in implementation. There are many best management practices (BMPs) that address the TMDL, tree canopy, and other Chesapeake Bay Program outcomes. See the table below for tree canopy BMPs that have several co-benefits*

Best Management Practice	Tree Canopy	Additional Co Benefits					
		Habitat Biodiversity	Air Quality	Land Use Methods	Fish Habitat	Healthy Watersheds	Forest Buffers
Agricultural Forest Buffer	4.5	4	4	4	4.5	4	5
Narrow Forest Buffer	5	2.5	2	3	3.5	2	5
Streamside Forest Buffers	5	4	3	4	4.5	3	5
Forest Conservation	5	5	4.5	3.5	4	5	3.5
Mine Reclamation	5	5	2	3	3	3.5	3
Urban Forest Buffers	4.5	5	4.5	4	4	3.5	5
Urban Tree Planting	5	2.5	4	3	2	2	2

*Values were taken from the [Quantification of BMP Impact on the Chesapeake Bay Program Management Strategies](#) study by Tetra Tech. [Appendix E](#) Final Impact Scores evaluates BMP effects on outcomes on a scale of +5 (very beneficial) to -5 (very harmful). **This table shows BMPs that scored a 3.5 or higher and -3.5 or lower for the Tree Canopy Outcome.**



Guiding Principles for Incorporating Healthy Watersheds

WIP Development

1. Understand your current and potential tree canopy, using the latest high resolution tree canopy data and tools like i-Tree Landscape (both free, online)
2. Emphasize actions to conserve existing canopy, as well as expand it through specific planting targets
3. Integrate tree canopy and planting goals into local planning, ordinances, and stormwater management
4. Engage a diverse coalition of partners with an interest in trees – public health, community development, sustainability, planning, etc.

WIP Implementation

1. Require and encourage best practices for tree planting and maintenance that will maximize canopy growth and survival in the long-term
2. Invest in the ongoing protection and maintenance of new and existing tree canopy as critical infrastructure
3. Work with community members and groups as equal partners – target efforts in areas of greatest need
4. Track the progress of plantings as well as canopy losses, and adapt strategies accordingly

Tools and Resources

- [Chesapeake Tree Canopy Network](#)
One-stop partnership website for state and local contacts, funding, technical guidance, and local examples from around the watershed.
- [A Guide for Forestry Practices for Phase III WIPs](#)
Packet of information on all forestry BMPs
- [i-Tree Landscape tool](#) and Webinar
Online tool allows you to do assessments of tree canopy benefits, including census block group comparisons, using the latest high resolution Chesapeake Bay tree canopy data.
- More can be found on the Forestry Workgroup page
https://www.chesapeakebay.net/who/group/forestry_workgroup

Contacts for More Information on Tree Canopy in your Jurisdiction

Jurisdiction	Website	Lead	Email
Delaware	Delaware Forest Service	Kesha Braunskill	kesha.braunskill@state.de.us
D.C.	DDOT Urban Forestry Division DOEE Water Quality Division	Earl Eutsler Luke Cole	Earl.eutsler@dc.gov luke.cole@dc.gov
Maryland	Maryland Forest Service	Marian Honecny	marian.honecny@maryland.gov
New York	NYDEC Lands and Forests	Mary Kramarchyk	mary.kramarchyk@dec.ny.gov
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