Tree Canopy

Principles for Phase III Watershed Implementation Plans

Growing Tree Canopy for Human Health, Economic Development and Infrastructure

Tree canopy is the leafy crown of the trees that grace our cities and towns. Tree canopy provides numerous 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 frontline defense to reduce air pollution-related deaths and respiratory disease. In the face of changing climatic conditions, tree canopy offers 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 tree canopy produces energy savings to homeowners, businesses, local governments and utilities. Across the country, utilities are investing in "Energy Saving Trees" programs to maximize cost reduction benefits. 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. Efforts to protect and grow tree canopy create green jobs in growing, planting, and managing trees and, ultimately, jobs in repurposing the urban wood that results 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 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 runoff pollution to waterways while filtering and taking up pollutants. While the effect of each individual tree may be modest, the collective effect of the entire tree canopy makes a significant and cost-effective contribution to addressing communities' stormwater and flooding challenges.

Best Management Practices with Tree Canopy in Mind

All of the forest-based best management practices listed in the table below support tree canopy in the watershed, but urban tree planting and urban forest buffers are particularly applicable to expanding tree canopy in the community context. The ratings below for fish habitat, healthy watersheds and forest buffers assume those goals are focused in more rural areas, so urban forest buffers and urban tree planting received a relatively lower score. Regardless of the ratings listed, tree canopy efforts broadly support healthy watersheds and habitat across communities of all sizes, urban to rural.

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**.

-5 -4.5 -4 -3.5 -3 -2.5 -2 -1.5 -1 -0.5 0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5
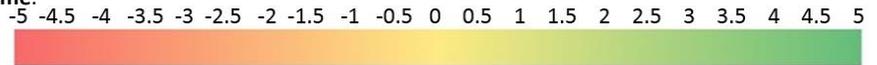
Guiding Principles for Incorporating Healthy Watersheds

WIP Development

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

WIP Implementation

- Require and encourage best practices for tree planting and maintenance that will maximize canopy growth and survival in the long-term.
- Invest in the ongoing protection and maintenance of new and existing tree canopy as critical infrastructure.
- Work with community members and groups as equal partners – target efforts in areas of greatest need.
- 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.
- Additional information can be found on the [Forestry Workgroup page](#).

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
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