

MAXIMIZING TREE CANOPY

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WHY IT MATTERS

Virginia's tree canopy provides many economic, social, and ecological benefits. Trees cool our cities and clean the air, reduce stormwater runoff and localized flooding, and stimulate the economy. Trees are a tool to help Virginia achieve its carbon reduction goals and mitigate against the most harmful impacts of climate change. Unfortunately, according to data from the Chesapeake Bay Program, Virginia lost 9,548 acres of tree canopy between 2014 and 2018.¹ Of the amount of forest and urban trees lost each year, roughly 10% became impervious surfaces – increasing stormwater runoff and amplifying the heat island effect.

Forests and trees act as carbon sinks and offset 13% of U.S. emissions.² Localities across Virginia are developing ambitious climate action plans to reduce their greenhouse gas (GHG) emissions, with trees as a part of many of the plans.

Virginia is forecasted to be hotter and wetter, with more damaging storms and increased risk of heat-related illness and deaths.³ Preserving and expanding tree canopy strengthens the resilience of communities in the face of these challenges by:

- Reducing temperatures in urban and suburban neighborhoods as well as heat-related emergency room visits, which are higher in formally redlined communities. Studies have found up to 16-degree difference between neighborhoods with canopy and those without.⁴
- Intercepting millions of gallons of stormwater, reducing polluted runoff and reducing coastal and inland flooding of, and damage to, businesses, homes, roads, and other critical infrastructure.
- Stabilizing streambanks, reducing erosion and sediment into our waterways.
- Diminishing cooling costs by up to 30%, reducing the energy burden on Virginia residents and GHG emissions.

Trees also provide a myriad of mental and physical health benefits, such as cleaning the air of street-level particulates that cause asthma attacks and other respiratory problems. Trees also reduce municipal water treatment costs by filtering pollutants from our drinking water.

CURRENT LANDSCAPE

During the 2024 General Assembly session, Virginia passed the Forest Conservation Act. This stakeholder-led study will evaluate where and why Virginia

is losing canopy and will recommend funding and policy initiatives to reverse the loss.

Currently only localities within Planning District 8⁵ have the authority to conserve mature tree canopy during construction.

In addition, localities cannot require more than the bare minimum replacement percentages. For example, for a site zoned as business, commercial, or industrial, the ordinance cannot require a developer to replace more than 10% of the canopy. Many localities have expressed support and interest in Virginia setting a floor, not a ceiling, on its tree canopy replacement percentage as evidenced by the localities that testified and wrote letters in favor of these initiatives.

Only the tree conservation statute contains language that enables a locality to create a tree fund which a developer can pay into in lieu of planting on site. With this additional authority, local governments would have additional funds to support tree planting and maintenance programs.

Community-based organizations meet resistance when planting new trees in older neighborhoods, particularly where residents are living on a fixed income because they lack the capability to care for the trees they already have. Preserving healthy, mature trees is equally important to planting new ones as it will take decades for a newly planted tree to provide the same ecosystem services as the mature tree. Programs that help residents keep their existing trees healthy will preserve more trees on private property and enable localities to achieve their canopy goals. The Trees For Clean Water grant program should be expanded to include tree maintenance for underserved communities. Investing in routine maintenance when a tree is young will help to minimize future costs while helping to maximize benefits and extend the tree's functional lifespan.

Despite decades of data⁶ showing expanding highways doesn't reduce traffic congestion, policymakers continue to pour billions into more roads, removing large swaths of trees for new road construction/expansion and from right-of-ways and on-ramps/off-ramps. As an example, new lanes on Interstates 95 and 64 have resulted in the loss of many acres of tree canopy in these corridors.

OPPORTUNITIES

Trees are critical infrastructure. Enabling developers to pay into a tree fund if they cannot achieve the mandated canopy replacement percentages on site and would provide local governments with additional

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funds to maintain and plant more trees on public and private property within the locality's boundaries.

Adequately funding the Virginia Trees for Clean Water grant program annually and expanding it to include maintenance of both young and mature trees would reduce homeowner burdens and help owners preserve healthy trees on private property. In turn, this would enable local governments to achieve their tree canopy goals, which are frequently tied to their carbon reduction goals.

Linear transportation projects, like roads and highways, should incorporate trees into their designs and budgeting processes. If trees are lost to construction, the agency responsible for the project should mitigate the loss by paying into the Trees for Clean Water Fund if they are not able to plant the required amount of trees by themselves.

As Virginia localities approve higher density residential developments in an effort to make housing more affordable, the need to maintain urban trees cannot be underestimated, especially as heatwaves and intense rainfall become increasingly frequent. Higher density development should include setbacks for green space, explore incentives to preserve mature trees, and reduce road widths to accommodate tree lawns, tree wells and bioswales in order to not exacerbate urban heat islands.

ENDNOTES

1. "Tree Canopy." Chesapeake Progress, (June 18, 2024). <https://www.chesapeakeprogress.com/abundant-life/tree-canopy>.
2. "Inventory of U.S. Greenhouse Gas Emissions and Sinks," Environmental Protection Agency, (2024), <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks>.
3. Hafner, Katherine, "How will climate change affect Virginia? Massive new report is a window into the future." VPM News, (2023), <https://www.vpm.org/news/2023-11-16/climate-change-affect-virginia-new-report-is-a-window-into-the-future>.
4. Shandas, Vivek, Jackson Voelkel, Joseph Williams, and J. S. Hoffman, "Integrating Satellite and Ground Measurements for Predicting Locations of Extreme Urban Heat." MDPI, (2019), <https://doi.org/10.3390/cli7010005>.
5. "Introduction to PDCs." VAPDC, (Accessed June 18, 2024). <https://www.vapdc.org/introduction-to-pdcs>.
6. Weingart, Eden, and Alyssa Schukar, "Widening Highways Doesn't Fix Traffic. So Why Do We Keep Doing It?" The New York Times, (January 6, 2023), sec. U.S. <https://www.nytimes.com/2023/01/06/us/widen-highways-traffic.html>.

TOP TAKEAWAYS

Tree canopy provides many benefits yet Virginia is losing tree canopy at a staggering rate.

Tree replacement programs rely on consistent funding - allowing developers to pay a fee in lieu of planting would help fund localities' urban forestry programs. Also, increasing funding for Virginia Trees for Clean Water and expanding this grant program to allow for tree maintenance in underserved communities would help preserve mature trees on private property as well.

State agencies, in particular VDOT, should mitigate loss of tree canopy stemming from transportation projects.



Treeplanting in Culpepper by Friends of the Rappahannock
Photo by Carleigh Starkson