



URBAN FORESTRY COMMISSION

2700 South Taylor Street, Arlington, Virginia 22206
TEL 703-228-6525 FAX 703-228-6507 www.arlingtonva.us

August 9, 2020

Honorable Libby Garvey, Chair
Arlington County Board
Ellen M. Bozman Government Center
2100 Clarendon Blvd, Suite 300
Arlington, VA 22201

Re: Legislation to Protect and Enhance Arlington's Valuable Tree Canopy

Dear Chair Garvey:

As in past years, I am pleased to offer the Urban Forestry Commission's recommendations for Arlington County's Legislative Package for 2021.

Summary of Recommendations

1) Incentivize tree preservation and planting. Support legislative efforts to incentivize tree preservation and planting, including supporting the passage of *HB 504* into law. This bill offers credits for preservation of mature trees or planting of trees in Chesapeake Bay Preservation areas in order to meet requirements for reducing the nutrient pollution flowing into the Chesapeake Bay. Once specific regulations and criteria for implementing the bill are issued, the County should use this authority to require more preservation of mature trees in those areas.

2) Strengthen Tree Replacement Ordinances.

- Work to pass *HB 1045* which would allow jurisdictions, including Arlington County, to require developers to make up for any net loss in tree cover by planting replacement trees on property that is protected by easements or by paying the locality to do it.
- Work to pass *HB 1329*, which passed the House and is pending in a Senate Committee. This bill would require local tree ordinances to impose penalties when trees are removed from RPA's without prior approval.
- Support development of a bill (stronger than the recently defeated *HB 1624*) to amend the existing law that governs local Tree Replacement Ordinances (§ 15.2-961). We urge that a replacement bill include the following provisions:

- i. Allow local jurisdictions that are suffering from documented loss of tree canopy cover to increase the requirements in the local tree replacement code—up to 25% tree cover in 20 years (instead of 20% coverage in 20 years as in the current tree replacement ordinance).
- ii. Allow local jurisdictions that use a tree replacement ordinance to require that homeowners whose properties must meet the “20% tree canopy cover in 20 years” requirement in Arlington’s ordinance (section § 61-10 of the County code) to post a bond. Every five years, county foresters would be required to measure each property’s tree cover to evaluate whether it is on track to meeting the 20-year target. If so, ¼ of the bond would be returned to the property owner at the end of each 5 year period. If not, the full amount of the bond would be forfeited to the County.

5) Recognize the importance of tree canopy to Virginia’s economy and public health. Support legislation that recognizes and highlights the importance of the tree canopy to the state’s environment, economy, and the health and well-being of its residents. For instance, such legislation would require jurisdictions with greenhouse gas emissions reductions goals, such as Arlington, to explicitly include the net carbon sequestration and storage from the jurisdictions’ urban forests in their energy plans and future projections of emissions reductions. A discussion draft of such a comprehensive bill is attached as Attachment A.

Background and Details

We start this part of the letter by recognizing that, so far, 2020 has been a brutal year around the world—including in Arlington. As we write this in mid-August, the coronavirus has already killed 135 County residents and infected more than 3,000,¹ and the lockdown need to fight the pandemic has crippled the economy and put new strains on the County budget.

The year has also brought more of the extreme weather events expected with climate change, from the July 7 flood that poured more water and mud into the basements of homes in Waverly Hills² to the record-breaking July heat wave sent air conditioning bills all across the County soaring.³

In the pandemic, trees reduce the air pollution that has been linked to higher death rates,⁴ and provide crucial shady and safe outdoor spaces for people to find respite from their home quarantines.

Trees are also remarkably effective at managing stormwater. Not only does a tree canopy prevent 30-60% of rainfall from reaching the ground, individual trees also intercept thousands of gallons of water a year through their roots.^{5,6} Greater use of this natural weapon to fight flooding could thus allow the County to delay or eliminate costly sewer upgrades, easing the budget crunch.

Tree offer similar large benefits by combatting the urban heat island effect. Once the canopy coverage reaches a critical threshold of at least 40% of total area, urban trees can reduce outdoor temperatures by as much as 9 degrees.⁷ During heat waves, that

reduces risks to life and health for those who work outside or who lack access to cool spaces, while also putting more money in residents' pockets in the form of lower energy bills.

In addition, a growing urban forest pulls large amounts of carbon dioxide from the air, making it easier (and less expensive) for Arlington County to meet its climate targets. Trees also raise property values and foster a closer connection to nature, bringing measurable improvements in well-being and quality of life. And a targeted strategy to increase tree cover in low income urban communities and communities with historically disadvantaged populations is a powerful tool for reducing social inequities, since those communities typically lower tree canopy percentages than do their wealthier counterparts.

A healthy, vibrant tree canopy is an essential part of the solution to all of these problems. Further, urban trees are the foundation of a biophilic urban environment. Arlington's commitment to a naturally healthy habitat for resident is exemplified in its partner status in the Biophilic Cities Network. The beneficial role of trees is expansive in scope and proven effective in numerous ways, including bottom-line economic value.

Yet as the UFC describes to the County Board year after year, the current trends in Arlington are going in the wrong direction. Overall, the tree canopy coverage is declining, from 43% in 2008 to 41% in 2016, and some neighborhoods with large amounts of new infill development have seen decreases in tree canopy coverage of more than 20%.

The County, therefore, has an urgent need for new legal authorities, some of which can be gained by legislative changes. This letter offers the UFC's recommendations for the County's Legislative Package for 2021.

We do note first that some small progress towards improving the laws governing local authority over forests was made in the last Virginia legislative session.

As mentioned in the summary, one bill passed by both the VA House and Senate, *HB 504*, allows credits for preservation of mature trees or planting of trees in Chesapeake Bay Preservation areas in order to meet requirements for reducing the nutrient pollution flowing into the Chesapeake Bay. While only parts of Arlington County fall into such Preservation areas, we hope that the County will use this authority to require more preservation of mature trees in those areas, once the State Water Control Board to adopts specific regulations and criteria for implementing the bill.

A second bill, *HB 1045*, would allow jurisdictions that use the current tree replacement ordinance (such as Arlington County) to require developers to make up for any net loss in tree cover in their developments by planting additional trees on property that is protected by easements or by paying the locality to do it. This bill was referred to Committee.

A third bill, *HB 1329*, requires local tree ordinances to have penalties when trees are removed from RPA's without prior approval. This bill passed the House and is pending in the Senate Agriculture, Conservation and Natural Resources Committee.

Finally, *HB 1624* amends the existing law that governs local Tree Replacement Ordinances (§ 15.2-961), such as Arlington's. The bill, which was punted forward to the 2021 legislative session, offers no benefit to Arlington, since it simply broadens the criteria for adopting tree replacement or conservation ordinances, allowing local jurisdictions outside of the Chesapeake Preservation Area to also adopt the ordinances.

But the legislature's willingness to crack open the door to amending this crucial legislation suggests that there is an opportunity to kick that door open wider by offering additional changes to the tree replacement and conservation ordinance statute.

The UFC urges Arlington County to take advantage of that opportunity by backing two additional provisions:

- 1) Allow local jurisdictions that are suffering from documented loss of tree canopy cover to increase the requirements in the local tree replacement code—up to 25% tree cover in 20 years.

- 2) Allow local jurisdictions that use a tree replacement ordinance to require that homeowners whose properties must meet the “20% tree canopy cover in 20 years” requirement in Arlington's ordinance (section § 61-10 of the County code) to post a bond. Every five years, county foresters would be required to measure each property's tree cover to evaluate whether it is on track to meeting the 20-year target. If so, $\frac{1}{4}$ of the bond would be returned to the property owner at the end of each 5 year period. If not, the full amount of the bond would be forfeited to the County.

Such a provision would tackle a huge problem in Arlington—the unfortunate fact that many of the new in-fill houses that initially meet the requirement will *never* actually reach the target of 20% tree cover in 20 years. The UFC is still awaiting a requested analysis from the Urban Forester of the track record of past in-fill redevelopments, but widespread observations show that many of the small trees planted to meet the initial requirement do not survive or are cut down.

Beyond working to implement these incremental ideas, the UFC also urges the County Board to be more ambitious and to back a more comprehensive bill that would recognize and highlight the importance of the tree canopy to the state's environment, economy, and the health and well-being of its residents.

Such legislation would explicitly raise the awareness of the many benefits provided by a vibrant tree canopy by describing those benefits in a “findings” section. It could also make the urban tree canopy a higher priority in the state by asking the Governor to create and appoint a Virginia Urban Tree Promotion Task Force that would identify practices and policies to expand and enhance the urban tree canopy. It could also require jurisdictions with greenhouse gas emissions reductions goals, such as Arlington, to explicitly include the net carbon sequestration and storage from the jurisdictions' urban forests in their energy plans and future projections of emissions reductions.

The Urban Forestry Commission has developed a draft of such a comprehensive bill and would be happy to share and work on it with Arlington County's legislative team. As mentioned in the summary, that draft is attached.

We realize that these are difficult times, and the immediate challenge is to bring the pandemic under control in the County, the state, and the nation. But we can't lose sight of the fact that, if we truly want a better, safer, healthier future for the residents of this unique County, we need to protect, enhance, and grow our precious urban tree canopy.

Sincerely,


Phil Klingelhofer, Chair
Urban Forestry Commission

Cc: Members, Arlington County Board

¹ <https://data-dashboard.arlingtonva.us/covid>

² https://www.washingtonpost.com/local/virginia-politics/flooded-neighborhoods-in-arlington-urge-storm-water-main-spending/2020/07/10/842a24b4-c242-11ea-9fdd-b7ac6b051dc8_story.html

³ <https://www.washingtonpost.com/weather/2020/07/27/washington-dc-july-record-heat/>

⁴ <https://www.hsph.harvard.edu/news/hsph-in-the-news/air-pollution-linked-with-higher-covid-19-death-rates/>

⁵ The Role of Trees in Stormwater Management https://www.urban-forestry.com/assets/documents/26sep_0140pm_kelsey.pdf

⁶ Stormwater to Street Trees: Engineering Urban Forests for Stormwater Management, U.S. EPA, September 2013
EPA 841-B-13-001
<https://www.epa.gov/sites/production/files/2015-11/documents/stormwater2streettrees.pdf>

⁷ <https://www.ncel.net/2019/09/01/canopy-tree-cover-can-drastically-reduce-heat-island-effect/>

ATTACHMENT 1

Urban Tree Canopy Enhancement Act

Be in enacted by the General Assembly of Virginia:

1. That the Code of Virginia is amended by adding in Title ___ a chapter numbered ___, consisting of sections numbered _-___.00 through _-___.15, as follows

§_ - _____.00 Short title

This chapter shall be known and may be cited as the Urban Tree Canopy Enhancement Act. This chapter shall be liberally construed to effect the purposes of this chapter.

§_ - _____.01 Declaration of policy findings and purpose

This legislation is enacted to provide for the preservation and growth of a healthy, vibrant urban tree canopy that is essential to the environment in the Commonwealth's urbanized areas and urban places and to the quality of life for their residents. The many benefits of a healthy, growing urban tree canopy include:

1) *Providing shade and windbreaks that reduce energy use and thus energy bills, putting more money into the pockets of Virginia's citizens.* The tree canopy also reduces the urban heat island effect, moderating potentially life-threatening summertime temperatures that will become more extreme with climate change.

2) *Offering better management of stormwater and significant reductions in the risks from flooding.* Not only does the tree canopy prevent 30-60% of rainfall from reaching the ground,⁷ individual trees also capture stormwater from the soil through their roots and the process of evapotranspiration. A single 25-inch diameter silver maple tree can intercept more than 3,000 gallons of water per year.⁷ As a result, mature trees can be as—or even more—effective than such current best practice stormwater management tools as bioswales or stormwater catchment planters,⁷ offering a low-cost approach for reducing stormwater runoff. By reducing risks from flooding and erosion, mature trees thus reduce the chances that homeowners will suffer costly damage from flooded basements and homes. A growing, vibrant tree canopy also will improve water quality in creeks, streams, lakes, and the Chesapeake Bay.

3) *Improving air quality.* A healthy urban tree canopy significantly reduces the levels of air pollutants like particulates and ozone. That will reduce incidences of diseases like asthma and cut healthcare costs for citizens and for the State of Virginia in programs like Medicaid.

4) *Combatting climate change.* Trees capture and store carbon dioxide from the atmosphere through the process of photosynthesis, reducing the ambient concentrations of the heat-trapping gas. Recent studies show that trees offer the most cost-effective weapon in the fight against climate change, cutting atmospheric concentrations of carbon dioxide at a fraction of the cost of other solutions like renewable energy.^{7,7}

5) *Improving property values, helping to attract new business, and supporting job creation.* A tree canopy creates quieter and more beautiful neighborhoods.

6) *Fostering a closer connection to nature.* Trees and green spaces improve quality of life and health. Studies show reductions in the incidence of depression and significant improvements in mood when people have more access to stands of trees and other green areas.^{7,7}

7) *Reducing social inequities.* Low income urban communities and communities with historically disadvantaged populations (including those in areas with a history of redlining) typically have a much lower tree canopy percentage than wealthier communities, and suffer more from the urban heat island effect and diseases caused by air pollution. Increasing the tree canopy in these neighborhoods is an important tool for reducing those inequities.^{7,7}

§. ____ .03 Definitions

“Urbanized area” shall have the same meaning as defined in §33.2-1200

“Urban place” shall have the same meaning as defined in §33.2-1200

§. ____ .04 Inventory of carbon storage from urban trees

A. Every locality shall conduct an inventory of trees in the urbanized areas and urban places situated within their locality [on a quadrennial basis] for the purpose of calculating the net current carbon storage area in such trees and the net changes of the carbon storage of such trees over time due to tree growth, tree planting, and loss of trees. Localities may use this inventory to develop strategies for reducing greenhouse gas emissions.

B. Localities shall report their findings to the Virginia Department of Environmental Quality [and/or Virginia Department of Forestry], which may review the data to ensure the methodology is sound.

[Possible “carrots”: Jurisdictions that achieve more than a 10% annual increase in carbon storage and sequestration in trees (growth and planting, minus tree loss) will be eligible for state renewable energy grants.]

[Possible “sticks:” Developers must calculate the net emissions from projects. If those net emissions are greater than zero [or some other figure], applicants for permits must plant trees or other vegetation sufficient to offset a specified percentage of the emissions from the project as a condition for getting a permit.

§. ____ .05 Trees as Stormwater Management

Despite the cost-effective stormwater management capabilities of trees, state spreadsheets for calculating credits for stormwater management in Guidance Memo No. 16-2001,⁷ do not include the contributions from the preservation of mature trees.

In part, that's because there are no mechanisms to ensure that the trees remain in place and continue to perform their stormwater management function over time.

This legislation directs the Virginia Department of Environmental Quality to add options to offer credit for the preservation of mature trees in the methods for calculating stormwater management credits. To solve the problem of ensuring that the trees continue to perform this vital function, this legislation also authorizes local jurisdictions to:

a) annually monitor for the continued presence and condition of the trees granted stormwater management credits, and require tree replacement or construction of alternative stormwater management facilities if the tree's functions have been lost; and/or:

b) require as a condition for getting stormwater management credits for trees that landowners post performance bonds that will be forfeited if the trees no longer perform the stormwater management function.

[Possible "carrot": Landowners that meet a threshold level of tree canopy coverage on their lots will get a discount on their trash/sewer/water bills, with the discount rising with the percentage of tree canopy coverage.]

§. ____ .06 Urban canopy ordinances

A. Notwithstanding any contrary provision of law, and to effect the purposes of this chapter, any locality may adopt an ordinance providing for the preservation, planting, and replacement of trees during the development process in urbanized areas and urban places such that the minimum tree canopy or tree cover percentage 20 years after the development is projected to be as follows:

1. [Fifteen] percent tree canopy for a site zoned business, commercial, or industrial;
2. [Fifteen] percent tree canopy for a residential site zoned 20 or more units per acre;
3. [Fifteen] percent tree canopy for a residential site zoned more than eight but less than 20 units per acre;
4. [Twenty] percent tree canopy for a residential site zoned more than four but not more than eight units per acre;
5. [Twenty-five] percent tree canopy for a residential site zoned more than two but not more than four units per acre; and
6. [Thirty percent] tree canopy for a residential site zoned two or fewer units per acre.

B. For purposes of this section, "tree canopy" or "tree cover" includes all areas of canopy coverage by self-supporting and healthy woody plant material exceeding five feet in height, and the extent of planted tree canopy at 20-years maturity.

[Possible "carrots":

- Local jurisdictions can pass ordinances allowing landowners who meet a threshold level of tree canopy coverage on their lots to apply for a discount on their trash/sewer/water bills, with the discount rising with the percentage of tree canopy coverage.
- Developers that exceed the current minimum requirements for current and anticipated future tree canopy coverage can receive benefits, such as expedited permitting or variances from zoning laws.]

§. ____ .07 Virginia Urban Tree Promotion Task Force

A. The Governor shall create and appoint a Virginia Urban Tree Promotion Task Force ("Task Force") to identify practices and policies that expand and enhance the urban tree canopy to improve quality of life and to bring numerous benefits, such as reducing temperatures in summer heatwaves, reducing risks of flooding, increasing climate resiliency, reducing net greenhouse gas emissions, and enhancing green spaces to improve health and the urban environment.

B. Within one year after creation, the Task Force will report to the General Assembly and Governor with detailed recommendations, including but not limited to proposed incentives and funding mechanisms, such as loans, tax credits, or grants, executive actions, research and analysis, and further legislation to effect the purposes of this chapter. The Task Force should conduct a review of ideas and practices from around the country to assess best practices.

[One idea in particular that the legislation requires the Task Force to explore is setting goals for the percentage of land area covered by tree canopy in urban and suburban areas, and creating policies that provide incentives for the growth of that tree canopy percentage. For example, local jurisdictions that can document a tree canopy coverage of 50% or more, or which can demonstrate an increase of 5% over 5 years, might receive official State recognition or funds for additional environmental enhancement.]