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*Appendix A:*

# **ENVIRONMENT ELEMENT**

## **SECTION G: POLICIES RELATED TO TREE CANOPY AND VEGETATION**

(DRAFT)

JULY 9, 2020

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### **Section G. Policies Related to Tree Canopy and Vegetation**

*(Italicized and underlined text indicates proposed language*

Text with a ~~striketrough~~ indicates language to be removed

All other text is existing and unchanged)

## **Section G. Policies Related to Tree Canopy and Vegetation**

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Tree canopy and vegetation provide numerous benefits to the urban framework. While they provide an aesthetic appeal, they also serve as food and habitat for wildlife, and enhance the well-being of communities and ecosystems, and provide biodiversity, making them an integral part of development and design. Vegetation provides root systems that help maintain soil integrity, function as natural aquifers, and recharge areas. It reduces erosion, particularly on steep slopes and areas adjacent to waterways. Large trees, especially in groupings, are a particularly valuable environmental resource. The tree canopy in Washington, DC includes approximately 2.5 million trees with a tree cover of 36 percent.<sup>47</sup> Urban vegetation can directly and indirectly affect local and regional air quality by altering the built environment. Urban trees can improve air quality by:

- Reducing temperature and energy costs by providing shade and cover.
- Reducing ozone and other pollutant concentrations.
- Mitigating climate change by storing carbon.
- Enhancing water and soil quality through stormwater retention and reduction of soil erosion.

In addition to these environmental contributions, trees also shade buildings and homes, which reduces energy consumption and provides quality settings for habitation, contributing to the community's overall health. The benefits of tree canopy and vegetation highlight the need to protect and restore urban vegetation, including tree canopy, wherever possible.

### **Trees and Vegetation in the Region**

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The tree canopy coverage in Washington, DC has decreased since 1950. Increased urbanization and growth has reduced a 50 percent tree canopy coverage to a 36 percent tree canopy coverage in 2014.<sup>48</sup> The region is working to restore vegetation. In 2014, over 12,000 trees were planted around Washington. The District adopted the goal of 40 percent tree canopy coverage by 2032 to improve air and water quality in the [\*District of Columbia Urban Tree Canopy Plan\*](#)<sup>49</sup> (2013). Based on current estimates in the plan, the District, federal agencies, and private property owners will need to plant a total of 216,300 trees over the next 20 years. Federal agencies in Washington are encouraged to participate and meet this target.

The federal government should:

- FE.G.1** *Preserve existing ~~vegetation, especially large stands of trees,~~ especially individual trees, stands, and forests of healthy, native or non-invasive species. Account for existing trees early in the planning and design processes when development occurs to*

maximize preservation and incorporate the natural landscape into the design. In addition:

1. Trees 31.8-inches in diameter (100 inches in circumference) or greater may not be removed, unless:
  - a. Removal is critical to accomplishing the mission of the agency and planning/design alternatives that would preserve such trees have been explored and determined incapable of accommodating program requirements, or
  - b. The tree is considered invasive or hazardous per an Arborist's evaluation.

FE.G.2 ~~When tree removal is necessary, trees should be replaced to prevent a net loss to the project area,~~ Transplant or replace existing trees when they are impacted by development and preservation is not feasible, according to the following procedures:

1. ~~An evaluation of potential tree loss should be made prior to removal. Trees shall be replaced according to the regulations of the local jurisdiction.~~ Transplant healthy, native, or non-invasive trees where practicable. Consult an Arborist and consider the following factors when determining if transplanting is appropriate:
  - a. Tree species, size, and condition
  - b. Historic or cultural significance of the tree (e.g., "witness tree")
  - c. Current location of the tree compared with the proposed location of the tree (e.g., urban condition vs. open field; shade vs. sun)
  - d. Soil quality at the current and proposed locations (e.g., sandy loam vs. silty clay; availability of organic matter)
  - e. Percent of critical root area that can be retained
  - f. Maintenance of trees after transplanting
2. ~~Trees of 10 inch diameter or less will be replaced at a minimum of a one to one basis.~~ Replace trees when they require removal. Replacement trees should increase biodiversity, be native species or non-invasive species<sup>1</sup>, and have a mature canopy spread equivalent to, or greater than, the tree(s) removed. Replacement trees should be planted at a minimum caliper size of 2.5 inches for shade trees, 1.5 inches for ornamental trees, and six-foot height for multi-stem and evergreen trees.

Replace trees according to the following procedures:

- a. Trees less than 10-inches in diameter: Replace one tree for every one tree removed (1:1)

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<sup>1</sup> Unless such specifications are inconsistent with the intent of culturally or historically significant landscapes.

b. Trees 10-inches in diameter or greater: Tree Diameter (in inches) x Species Rating (as percentage) x Condition Rating (as percentage) = Score

i. Trees are replaced at the following rates, based on the Score:

- 1-4.9 = one tree
- 5-9.9 = two trees
- 10-14.9 = three trees
- 15-19.9 = four trees
- 20-24.5 = five trees
- 25+ = six trees

Example: The replacement formula and score for a 25-inch diameter tree, with a Species Rating of 60% and Condition Rating of 75% is:  $25 \times .60 \times .75 = 11.25$ . The resulting score of 11.25 equates to three trees planted to replace the 25-inch tree.

c. Forests and Stands of Trees: Plant 1.5 acres for every 1 acre removed. Consult with federal and local stakeholders to determine the appropriate density, mixture, and size of replacement plantings.

~~3. Significant trees (diameter greater than 10 inch) will be replaced at a rate derived from a formula of the International Society of Arboriculture, or as established by the local jurisdiction's requirements for tree replacement. Locate replacement or transplanted trees, in order of preference, on:~~

- ~~a. The project site (e.g., within or adjacent to the limits of disturbance)~~
- ~~b. The property where the project site is located~~
- ~~c. Another site within the agency's jurisdiction (authority) only if the preferred locations cannot accommodate the replacement trees without overcrowding, or~~
- ~~d. A combination of the above locations.~~

~~4. The replacement of trees should be located on site, on adjacent properties, or in areas within the site's jurisdiction. Ensure the amount of planting soil volume is consistent with current industry best practices. Consult with federal and local stakeholders to determine the appropriate standards based on the type of tree (e.g., shade tree, ornamental, evergreen, etc.) and location (e.g., above structure, on-grade, etc.).~~

5. Specify replacement trees in accordance with the most current edition of ANSI-Z60.1<sup>2</sup>. Transplant, install, and maintain trees in accordance with the most current edition of ANSI-A300<sup>3</sup>.
6. Offset the balance of replacement trees (if the total quantity of replacement trees cannot be met) with sustainable, low impact development practices on the project site or property. These practices should provide similar environmental benefits to those of canopy trees, such as stormwater capture and treatment, reduced urban heat island effect, and/or carbon sequestration.

- FE.G.3 Enhance the environmental quality of the National Capital Region by preserving existing trees, replacing trees where they have died, and transplanting or replacing trees where they have been removed require removal due to development. Tree preservation, transplant, and replacement should adhere to the ~~standards and guidelines of the local jurisdiction,~~ procedures provided herein to but at a minimum prevent a net ~~tree~~ loss of tree canopy in the development area.
- FE.G.4 Incorporate new trees and vegetation into plans and projects to absorb carbon dioxide, moderate temperatures, minimize energy consumption, reduce pollution, and mitigate stormwater runoff. This includes the use of vegetation in the design and development of green roof projects where feasible and consistent with local regulations.
- FE.G.5 Conserve plant communities native to the site's ecoregion (as defined by the [Council on Environmental Quality](#)).<sup>51</sup> Protect and/or restore areas containing native plant communities, and provide habitat corridors connecting to off-site natural areas or buffers adjacent to off-site natural areas for migrating wildlife.
- FE.G.6 Maintain and preserve woodlands adjacent to waterways, especially to aid in the control of erosion, sediment, and thermal pollution.
- FE.G.7 Encourage the use of native plant species and remove invasive plants where appropriate.
- FE.G.8 Protect and preserve all vegetation designated as special status plants.<sup>52</sup>
- FE.G.9 Use vegetation to minimize building heating and cooling requirements.

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<sup>2</sup> The American Standard for Nursery Stock as produced by American Horticulture Industry Association (formerly American Nursery & Landscape Association) accredited by the American National Standards Institute; ANSI-Z60.1 is a standardized system of sizing and describing plants to facilitate trade in nursery stock.

<sup>3</sup> The American National Standards Institute; ANSI-300 standards are generally accepted industry standards for tree care practices.

**FE.G.10** Use trees and other vegetation to offset emissions of greenhouse gases from operations. Plant and maintain trees and other vegetation to achieve long-term storage of carbon dioxide following accepted protocols that ensure offsets are permanent and verifiable.

**FE.G.11** Support sustainable practices in federal landscape development to include, but not be limited to, the following:

1. Use of sustainable soil amendments.
2. Reduced irrigation runoff.
3. Reduced greenhouse gas emissions.
4. Use of Integrated Pest Management practices.
5. Reduced potable water consumption and recycling of all organic matter.
6. Introduction of plants that support pollinator species.
7. Selection of vegetation in the appropriate [U.S. Department of Agriculture Plant Hardiness Zone](#),<sup>53</sup> while accounting for regional changes in climate.

**FE.G.12** Use of grass species as lawn should be limited to recreational areas so that major reductions in water, chemicals, maintenance, energy, air and water pollution, and noise occur. Where turf grass is used, species and cultivar selection should reflect the local climate and growing conditions to minimize the need for irrigation and the use of chemicals for feeding, and controlling insects and disease.