FAIRFAX COUNTY PLANNING COMMISSION
ENVIRONMENT COMMITTEE
THURSDAY, MARCH 21, 2019

PRESENT: James R. Hart, Commissioner At-Large, Chairman
Mary Cortina, Commissioner At-Large, Vice Chair
Ellen J. Hurley, Braddock District
John C. Ulfelder, Dranesville District
Walter C. Clarke, Mount Vernon District
Timothy J. Sargeant, Commissioner At-Large

ABSENT: Donté Tanner, Sully District
Phillip Niedzielski-Eichner, Providence District

OTHERS: John Carter, Hunter Mill District
James Migliaccio, Lee District
Julie M. Strandlie, Mason District
Noel Kaplan, Planning Division (PD), Department of Planning and Zoning (DPZ)
Denise James, PD, DPZ
Joe Gorney, PD, DPZ
Charles Smith, Stormwater Management, Department of Public Works and Environmental Services (DPWES)
Susie Foster, Stormwater Management, DPWES
Hugh Whitehead, Stormwater Management, DPWES
Teresa Wang, Senior Deputy Clerk, Planning Commission

ATTACHMENTS:

A. Draft Natural Landscaping Policy, as presented in 2007
B. Fairfax County Natural Landscaping Manual
C. Draft Policy Plan Amendment Text, Natural Landscaping, dated November 20, 2018
D. Benefits and Application of Natural Landscaping and Five-year Implementation Plan dated March 21, 2019
E. Natural Landscaping PowerPoint presentation

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Chairman James R. Hart called the meeting to order at 8:35 p.m. in the Board Conference Room of the Fairfax County Government Center, 12000 Government Center Parkway, Fairfax, Virginia, 22035.

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Noel Kaplan, Planning Division (PD), Department of Planning and Zoning (DPZ), provided an overview of the natural landscaping policy plan amendment.

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Joseph Gorney, PD, DPZ, introduced Charles Smith, Stormwater Management, Department of Public Works and Environmental Services (DPWES); Suzanne Foster, Stormwater Management, DPWES; and Hugh Whitehead, Stormwater Management, DPWES to the Committee members.

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Mr. Whitehead and Mr. Smith provided a presentation on natural landscaping that covered the following topics:

- Examples of natural landscaping sites in Fairfax County;
- A list of programs supportive of natural landscaping;
- The benefits and goals of natural landscaping efforts;
- Examples of natural landscaping techniques;
- Background information on the natural landscaping policy plan presented in 2007, Attachment A;
- The Natural Landscaping Manual, as depicted in Attachment B;
- The five-year implementation plan, as depicted in Attachment D; and
- An overview of the current draft of the Natural Landscaping Policy Plan, as depicted in Attachment C.

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Mr. Kaplan, Mr. Whitehead, and Mr. Smith discussed with Committee members the following issues:

- The benefits of above-ground bio-retention policies;
- The timeline for the policy plan amendment;
- Feedback from stakeholders;
- Urban design guidelines for natural landscaping;
- The use of natural landscaping for stormwater runoff;
- The inclusion of language in Policy A that referred to aesthetic value;
- The addition of guidelines for planting near septic fields in the Natural Landscaping Manual;
- The language in Objective 6, Policy A, that was clarified by staff and subsequently revised after further discussions with Committee members.

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Chairman Hart announced that the next Environment Committee meeting would be held on April 25, 2019, for continued discussion on the Natural Landscaping Policy Plan amendment.

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The meeting was adjourned at 9:39 p.m.
James R. Hart, Chairman

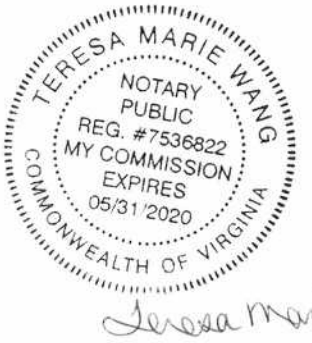
An audio recording of this meeting is available in the Planning Commission Office, 12000 Government Center Parkway, Suite 552, Fairfax, Virginia 22035.

Minutes by: Teresa Wang

Approved: September 26, 2019

Jacob Caporaletti

Jacob Caporaletti, Clerk to the
Fairfax County Planning Commission



Teresa Marie Wang

Handout for Planning Commission Environment Committee—March 21, 2019

Draft Fairfax County Natural Landscaping Policy *(as presented in 2007)*

On reviewing the policy plan language, it seems that the best place to insert natural landscaping is under Fairfax County Comprehensive Plan, Policy Plan, Public Facilities, Countywide Objectives and Policies, **new** objective 6:

Objective 6: Use environmentally-friendly techniques and Natural Landscaping methods where practical to minimize resource consumption, reduce stormwater runoff, and decrease life-cycle maintenance requirements for public facilities and sites.

Policy a: Adopt Natural Landscaping practices as generally promoted by the US Environmental Protection Agency for use at all Fairfax County public facilities.

Policy b: Plan and design new facilities and sites using Natural Landscaping, Low Impact Development (LID), and other similar practices or methods.

Policy c: Consider modifying or retrofitting existing facilities and sites after thorough evaluation, to incorporate Natural Landscaping, LID, and other similar practices or methods to the greatest extent practical.

Policy d: Educate staff on environmentally sound practices such as Natural Landscaping and LID, and encourage a sense of stewardship of natural resources at all levels of County employment.

Policy e: Educate the public about environmentally sound practices such as Natural Landscaping, LID, and the stewardship of natural resources in Fairfax County.

[Note: The intent of the natural landscaping efforts at the federal level is spelled out pretty well in the EPA source materials at http://www.epa.gov/glnpo/greenacres/toolkit/chap1.html :

"Local officials are in a position to advocate natural landscaping and bring its benefits to their communities. Local governments demonstrate the benefits by using native plant materials on government owned and managed lands. Government officials can amend comprehensive plans and adopt ordinances to promote the appreciation and use of natural landscapes. Citizen education about the benefits of natural landscaping can provide a powerful incentive, especially if government officials can point to pilot projects of their own."]

Handout for Planning Commission Environment Committee—March 21, 2019

FAIRFAX COUNTY NATURAL LANDSCAPING MANUAL

Introduction

To further the goals of its environmental agenda, it is the policy of Fairfax County to apply natural landscaping concepts and techniques in the landscape design, implementation, and maintenance of County-owned properties and facilities.

Natural landscaping practices and materials can be used to protect and enhance existing natural resources, including soil and water; mitigate climate change, improve and preserve air quality; and contribute to resource conservation.

Natural landscaping is guided by locally native plant species and communities, and incorporates natural features such as topography and water into designed landscapes that attempt to emulate plant arrangements and relationships found in nature. In the construction of new facilities, the site is analyzed and existing natural assets (such as desirable vegetation, soil, and water and land features) are identified, incorporated into the design, and protected and preserved through the construction phase of the project. Landscape renovations or retrofits on previously disturbed sites take advantage of the opportunity to improve soil quality, incorporating appropriate amendments and improving aeration and infiltration. An important natural landscaping concept is improving the soil's ability to absorb and store water, minimizing runoff and the need for supplemental irrigation during periods of drought. This enhancement is achieved, in large part, by reducing the use of turfgrass in favor of mulch and groundcovers; and in some cases, allowing leaves and woody debris to accumulate and decay in place. From an aesthetic perspective, this may require an adjustment for some people. Careful planning and proper management can produce a natural landscape with an orderly appearance that functions as intended, and has a greater capacity to maximize the level of social, economic, and environmental benefits that can be provided by our natural resources.

While not maintenance-free, natural landscapes often require less time and money for ongoing maintenance than conventional landscapes, and maintenance practices result in less pollution. Because turf area and, in some cases, mowing frequency is reduced, maintenance practices result in less air pollution from mowing equipment. In addition, the increased use of mulch builds soils with a higher percentage of organic matter, resulting in greater water and nutrient holding capacity. This produces healthier plants, reducing the need for fertilizer and pesticides applications that can potentially pollute streams, rivers, and the Chesapeake Bay.

The Natural Landscape Committee To facilitate the implementation of its Natural Landscape Policy the county formed the Natural Landscaping Committee (NLC). The committee consists of representatives of those county agencies that have landscape maintenance responsibilities and professionals that have expertise in natural landscaping. The NLC has two functions. It acts in an advisory capacity for the formulation of site-specific natural landscaping plans. It also acts as a gatekeeper recommending natural landscaping projects to the Environmental Coordinating Committee for funding through the Environmental Improvement Program. Each county agency, such as Police, Fire and Rescue, and Library, that occupy county owned properties which may be natural landscaping project sites, should identify a person or office that will serve as liaison with the NLC to help identify potential project sites and work with site staff to implement projects.

A further function of the NLC is to devise procedures by which Fairfax County's Natural Landscaping Policy can be implemented. To that end the NLC has written this manual. It is not the intent of the NLC to duplicate existing efforts in Natural Landscaping and write another technical guide on how to plant a tree, build a rain garden, select habitat plants etc. Therefore the NLC incorporates into this manual by reference applicable sections of the Fairfax County Public Facilities Manual, the EPA Sourcebook on Natural Landscaping for Public Officials, and any other appropriate technical guides to Natural Landscape design. The purpose of this manual is to communicate the County's reasoning for adopting the natural landscaping policy and the philosophy guiding the NLC in implementing the policy.

Environmental/Social Benefits of Natural Landscaping Understanding how natural landscaping can help achieve the environmental and social goals listed below can help guide the design of landscaping for a site.

1. Air quality improvement: Reducing turf areas reduce emissions from mowing. Trees and other plants absorb air pollutants through their leaves, so using vegetation layers to increase leaf area per square foot of land area reduces air pollution. Trees shading parking lots and streets reduce the amount of heat and volatile organic compounds, which are both precursors to ozone. Evergreen and deciduous trees can be used to block winter winds and summer sun and reduce air pollution by reducing the energy needed to heat and cool buildings.
2. Resource Conservation: Native plants are adapted to local conditions and need less maintenance. This saves on energy for mowing; collecting treating and pumping water; and producing and transporting pesticides and fertilizer. As noted above, trees can be used to reduce energy demand for heating and cooling.
3. Pesticide/Fertilizer Reduction: Native plants are adapted to this area and local pests, nutrients and rainfall, so they need less maintenance. This means less pesticide and fertilizer. This is particularly true in a naturalized area that is allowed to 'go wild' and the plants are left to care for themselves.
4. Water quality improvement: Planted areas, unlike turf and pavement, can slow stormwater runoff and allow it to filter into the soil where pollutants like oil, grease, fertilizer, pesticides, and animal waste are trapped, processed and removed by plant roots and soil organisms. Rain gardens and other bio-retention landscape elements are specifically designed to promote this cleaning action. Slowing stormwater also reduces erosion and the amount of sediment entering streams.
5. Stormwater Management: Plant leaves and stems intercept rain and allow it to evaporate before hitting the ground; increasing plant surface area per square foot of land area by layering plants reduces runoff. Planted areas that slow the movement of stormwater help infiltrate stormwater and store it in the ground, rather than allowing it to rush into streams.
6. Ecosystem Management: On-site natural landscaping can provide corridors that connect larger patches of natural area, allowing wildlife a way to move between those patches. Natural landscaping also offers food and shelter to wildlife, including pollinators and predators of insect pests.
7. Resource reduction: In addition to energy savings, low maintenance natural landscaping can also save staff time. Natural landscaping may also be cheaper to install than high maintenance turf.

8. Aesthetic Improvement: Natural landscaping with native plants can fulfill all the architectural requirements of formal landscaping with non-native species. In places where turf is not required, natural landscaping opens a wide array of native plants that have more interesting texture and color than turf grass.
9. Public Education: Natural landscaping of public facilities can teach the public about the benefits of natural landscaping and encourage its use on private land. Natural landscapes around schools can serve as living laboratories for science education and required significant watershed experiences.
10. Community Engagement: Natural landscaping can be a vehicle to promote civic pride and to engage local grass roots environmental and gardening groups to promote land stewardship and a new suburban landscape ethic.

The Natural Landscape The natural landscape of most of Fairfax County is forest. Prior to European settlement in 1607 the Chesapeake Bay watershed, including Fairfax County, was mostly forest. Most sites in the county, if left alone and given time will return to forest. We start our consideration of natural landscaping with forest.

A forest is a collection of plant material that includes the following layers:

1. *Canopy* – trees of 60 or more feet that shade the other layers (e.g. oak, hickory, maple, poplar, white pine)
2. *Under Story* – single stemmed woody plants 20 to 60 feet including small trees and saplings of canopy trees (e.g. redbud, flowering dogwood, American hornbeam)
3. *Shrub* – woody plants, usually multi-stemmed, up to 20 feet (e.g. viburnum, mountain laurel, hazelnut)
4. *Herbaceous* - non-woody plants (e.g. Virginia bluebells, wood poppy, bleeding heart, ferns, mosses)
5. *Forest floor* – accumulating, decomposing organic debris from the other layers mixed to varying extent with mineral soil.

From a landscaping view, natural forests are untidy, random collections of plants. But the concept of a forest can be applied to a planned landscape. For example a 20 foot wide transition/screening strip along one edge of a property might be planted with a row of oaks on 20 foot centers, 5 feet from the property line. Redbud, viburnum, wood poppy are planted among the oaks and the entire strip is covered with 3 inches of shredded hardwood mulch. This may appear to be a well manicured landscape feature, but when mature it will actually be a forest with canopy (oak), under story (redbud), shrub (viburnum), herbaceous (wood poppy) and forest floor (mulch, accumulated leaves and woody debris) layers.

Site considerations may require the elimination of one or more layers. Overhead utilities may restrict the height of the landscaping and remove the canopy and under story. The need to maintain sight lines may remove tall shrubs and under story.

In some cases it may not be appropriate to use any woody vegetation. At these times a meadow is a more appropriate model for the landscape. A meadow is a collection of herbaceous plants –

grasses, sedges, and broad leaved flowering plants. Again, a natural meadow may appear somewhat jumbled and untidy, but the elements can be organized to create a landscape element. A foundation planting that cannot obscure the view from the first floor might include short native grasses that grow in clumps and perennial native flowers that form mounded displays. Over time the clumps and mounds will grow together and form an organized meadow that fills the entire landscaping space.

Considerations In installing landscaping, natural or otherwise, there are many considerations. Natural landscaping must fit into the overall site design and purpose. In some cases landscaping fulfills a legal requirement, say for screening and transition between two different land uses. It may also be an integral part of the site architecture like the tree colonnaded approach to the Fairfax County Government Center. Landscaping may also provide a play area for school children or a break area for site staff. Sometimes landscaping is simply used to fill up unused space on the site. Before installing natural landscaping, it must be determined how the landscaping will integrate with the site design and use.

Once it is determined how the landscape fits with the site design and function, there are a variety of cultural and biological considerations that will dictate what is put into the landscape and how it is installed. Security and utilities may constrain the types of plants used; neighborhood expectations of a well manicured site may preclude a naturalized landscape created by a 'no mow zone.' Drainage patterns may require more inundation or drought tolerant plants; deer browse may obligate the use of fencing or tree tubes. Below are checklists to help guide the planning process for natural landscaping.

The Natural Landscaping Planning Process Natural landscaping is a two tiered planning process. First a conceptual plan is developed that addresses the benefits of, constraints on, and types of natural landscaping to be installed on a site. Once the conceptual plan has been approved and funded through the Natural Landscape Committee, a detailed final plan must be developed specifying exactly how to install the natural landscaping. The final plan may be as simply describing how to identify a "No Mow Zone" to the person running the lawn mower or as complicated as detailing the construction of a rain garden. The Natural Landscaping and Site Assessment Checklists can be used as a guide to writing the conceptual plan.

Required Elements of a Natural Landscaping Plan

Element	Description
Site evaluation	**Function and purpose of the site or facility.** Some questions to consider are: What type of facility is this? (School, library, police station etc.) How is the facility used? (Indoor activities only, outdoor active use for play or practice, outdoor passive use etc.) What activities take place there? (Games, education, practice etc.) How do these uses and activities interact with the landscape – do they require fields or open turf areas?

Constraints	**Constraints on the type of natural landscaping that can be installed.** Easements – utility, stormwater, VDOT etc. Overhead and underground utilities Visibility – will the neighbors complain? Rooting space for trees in and around parking lots and sidewalks. Sight lines for security or signage. Cultural issues identified in the site evaluation.
Site-based and County-wide Objectives	**How the natural landscaping will address both site-based and county-wide objectives.** County –wide objectives are: Air quality improvement — Resource Conservation Pesticide/Fertilizer reduction — Water Quality Improvement Stormwater Management — Ecosystem Management Resource Reduction — Aesthetic Improvement Public Education — Community Engagement Site-based objectives might be to follow County policy and work towards county-wide objectives. Site-based objectives may also be specific to the function of the site or facility, for example: An outdoor classroom at a school; a shaded story time grove at a library; reducing glare on the doors or windows at a police station.
Proposed Treatments and Specifications	**Details the natural landscaping to be installed.** Preliminary or conceptual plans should include a description of the practice(s) to be installed and site plan showing the general location and size of the practice(s). Final plans must include the exact location and area of the practice. Where applicable the plan must also include site preparation, plant lists, construction details and specifications, and sign location, specification and verbiage.
Maintenance	**Details the maintenance of the proposed landscaping and identifies the party(s) responsible for that maintenance.** A schedule of required maintenance activities based on the plant species and landscape elements installed. Where invasive species exist on the site, this section must include a plan for their control. For the purposes of the Fairfax County Natural landscaping initiative invasive species are those identified by the Natural Heritage Program of the Virginia Department of Conservation and Recreation.

Evaluating Your Site Conducting a site-specific evaluation of a property is the first step toward creating a natural landscape. A site assessment allows you to catalogue the considerations, from site design and purpose to security concerns that will influence your natural landscaping plan. Site assessment is a common tool for landscape planning. However, in the natural landscaping context, typical design and horticultural concerns must be weighed against the ultimate goal: creating landscapes that mimic natural communities in both form and function.

The site assessment and natural landscaping assessment checklists below provide a guide for identifying opportunities to integrate natural landscaping into an established landscape, along with the site conditions that will impact that process. Although these two facets of natural landscape planning have been separated in this document, in reality they work together. While you are assessing a parking lot, for example, for potential to add shade trees, often you are also compiling information on site conditions including locations of power lines and underground utilities, noting existing plant materials, soils and slope, etc.

There is no set way to conduct a site evaluation. However, it is always a good idea to plan on visiting the site at least twice. An initial visit can be used as an opportunity to interview a site manager or property owner and often generates the large-scale vision for transforming the site. At the second visit, initial ideas and concepts can be weighed against the reality of the specific site conditions, and refined if need be. Often too, the site evaluation process includes researching local regulations or creating base maps showing, for example, on-site soils, site boundaries, and easements. The checklists should help you identify the questions you should ask of the site manager and of yourself as you re-create a natural landscape.

SITE ASSESSMENT CHECKLIST

Design Considerations: Identifying Constraints, Problems and Assets

Identifying opportunities for installing natural landscaping often also requires identifying those portions of a landscape where constraints limit change. Portions of a site may not be available for retrofit because they facilitate site use and function, contain utilities, or are protected by an easement. The biases and preferences of neighbors or site managers and physical site conditions can also constrain site design. As valuable to identify are both the problems and assets existing on your site. Signs of erosion or standing water are evidence of drainage problems that can be addressed by your natural landscaping plan. Your final plan should also enhance and link existing site assets such as tree resources, existing garden plots, shrub borders, and natural habitats such as wetlands or streams.

To identify the constraints, problems, and assets at a site, make sure to speak with the site manager or maintenance foreman. Address the following questions based on research and site observations. A good idea is to mark or make notes on an aerial photo or site plan delineating areas where no changes are possible or necessary and noting areas for potential enhancement.

Site Use/Constraints

- ❑ How is this facility and its landscape currently used? What areas of the landscape are required to support site use?
- ❑ Are renovations or changes in function/use anticipated?
- ❑ What pathways are present for pedestrians? Are these sufficient?
- ❑ What legal requirements affect on-site landscaping?
- ❑ Are easements present on the site? Where?
- ❑ Where are the utilities, including overhead power lines?
- ❑ What are the security mandates/concerns at the site?
- ❑ What sight lines or views need to be maintained or emphasized?
- ❑ What are the needs for vehicles, including parking?
- ❑ What paved surfaces are required to fulfill ADA requirements?
- ❑ Is this a historic property?
- ❑ Is there any part of the landscaping you absolutely feel can't be changed? Why?
- ❑ What about site maintenance, how do you deal with snow/ice?
- ❑ Will staff or funds be available for future maintenance?
- ❑ What is the project budget?

Problems

- ❑ Is there any part of the landscaping you would like to see changed? Why?
- ❑ Where are the stormwater structures?
- ❑ Are there any drainage problems on the site?
- ❑ Is there evidence of erosion? Where? What's the cause?
- ❑ Are there down spouts? Where do they empty?
- ❑ What is the overall drainage pattern?
- ❑ Are invasive plant species present? Which ones?
- ❑ Are pests or disease a problem? Which species are affected?
- ❑ Is deer browse problematic at the site?

Assets & Site Conditions

- ❑ Are water resources present on the site (wetlands/streams)?
- ❑ Are there any existing Low Impact Development structures?
- ❑ Any existing forest or meadow resources? What condition are they in?
- ❑ Where are the tree resources on site?
- ❑ What other existing vegetation is present?
- ❑ Is there an irrigation system in place?
- ❑ How can the existing topography be complemented?
- ❑ What are the soil characteristics?
- ❑ What is orientation of buildings? Do trees provide shade?
- ❑ What areas are sunny? Shady?
- ❑ What is the dominant wind direction?

NATURAL LANDSCAPE ASSESSMENT CHECKLIST

Identifying Opportunities for Change

Look beyond the current conditions at the site and identify opportunities to create a more sustainable landscape that offers improved ecosystem services. Examine each component of the landscape for opportunities to mimic natural communities and ecosystems functions and/or change maintenance practices.

General

- ❑ Replace non-native exotics with native species to reduce water/fertilizer/pesticide use
- ❑ Use integrated pest management (IPM) to deal with pests and disease.
- ❑ Recreate forest ecosystems by including multiple layers with over- and understory trees, shrubs, forbs and a mulch layer. Consider natural community composition when choosing a plant palette.
- ❑ Link landscape areas to provide corridors for wildlife and limit maintenance.
- ❑ Provide adequate maintenance to control invasive plants.
- ❑ Right plant, right place (choose appropriate plants for conditions and location, keeping in mind mature size).
- ❑ Choose low maintenance plant materials and keep plants with similar maintenance needs together.
- ❑ When renovating or installing new planting areas, amend soils to increase water infiltration.
- ❑ Install rain gardens or vegetated swales to encourage good drainage.

Pavement/Parking Lots

- ❑ Add trees to shade roadways and parking lots, decrease runoff and improve air quality
- ❑ Construct rain gardens (bioretention)/vegetated filter strips to intercept runoff from pavement
- ❑ Convert pavement to permeable surfaces in overflow parking spaces, non-ADA specified walkways, and dedicated firelanes.
- ❑ Re-direct downspouts away from pavement and into vegetated areas or into rain gardens or rain barrels
- ❑ Amend soil in medians to encourage rainwater infiltration
- ❑ Where constraints limit tree installation, replace turf with mulch, perennials and shrubs to reduce mowing and add habitat
- ❑ Widen/add pathways, driveways or walkways where equipment or pedestrian traffic is causing erosion.

Foundation Plantings/Buildings

- ❑ Maintain proper slope to encourage drainage away from structures
- ❑ Add or enlarge foundation plantings to reduce turf/turf maintenance. Where possible recreate forest structure by including multiple layers with over- and understory trees, shrubs, forbs and a mulch layer.
- ❑ Plant deciduous trees on the south, east and west sides of buildings to provide shade and ensure air conditioning units are shaded to reduce cooling needs in buildings.
- ❑ Plant evergreen trees as a windbreak to conserve heat in winter (typically north or west winds).
- ❑ Plant evergreen shrubs 4-5' from buildings for living walls to provide insulation in winter.

- ❑ Make sure evergreen trees/shrubs do not block sunlight from entering and warming the buildings (passive solar gain) in winter.
- ❑ Install green roofs where feasible to reduce runoff and conserve energy.

Turf

- ❑ Minimize lawn! Convert unused/unnecessary turf areas to no-mow-zones. Plant seedlings and perennials or groundcovers, or add woody seed mix where possible.
- ❑ For golf courses, increase areas of rough.
- ❑ Eliminate turf on steep slopes where it is difficult to maintain. Terrace and plant shrubs and perennials and mulch, or plant with native groundcovers, shrubs or grasses that provide erosion control.
- ❑ Eliminate turf areas too narrow to mow with larger, more efficient mowers.
- ❑ Eliminate turf in shaded areas to reduce inputs of chemicals and reduce maintenance. Replace with a shade resistant groundcover or mixed shrub planting.
- ❑ Eliminate ineffective edging or unneeded structures that impede efficient mowing.
- ❑ Reduce mowing frequency particularly in summer to reduce emissions.
- ❑ Use efficient mowers and maintain proper blade height and sharpness
- ❑ Apply appropriate fertilizer/lime and aerate and overseed annually to maintain lawn health and reduce disease.
- ❑ If possible, re-locate signage to encourage efficient mowing/proper fertilization practices (no fertilizer/grass clippings on pavement).

Natural Areas

- ❑ Protect and enhance or re-establish riparian buffers.
- ❑ Protect and enhance existing woodlands.
- ❑ Protect and enhance wetlands.
- ❑ Protect and enhance conservation areas (easements).
- ❑ Link natural areas to provide corridors for wildlife.

ADDITIONAL CONSIDERATIONS

Identifying Contingencies Associated with the Design/Implementation of this Project

Consider the steps that will be required to prepare the plan for implementation. What approvals will be required? What County agencies need to be involved? Will the site function as intended?

- ❑ County permitting is required
  - ___ Land disturbance totals more than 2500 square feet
  - ___ Project is directly associated with riparian buffers, stream valleys, or floodplains
  - ___ Existing topography is altered and current drainage patterns changed
  - ___ The project includes stormwater BMPs or any kind of LID
  - ___ Man-made water features (lakes or ponds) of significant size are proposed in the plan
  - ___ Building structure is to be altered or modified to accommodate the project
  - ___ Miss Utility indicates major utilities in the proposed construction area

- ❑ Land disturbance requires use of heavy or specialized construction equipment
- ❑ Primary site use is significantly changed
- ❑ Project meets the requirements of the funding source
- ❑ Multiple County agencies will be involved in implementation of the project
- ❑ Maintenance specifications are included with the plan
- ❑ Natural landscaping goals achieved are indicated on the plan

Handout for Planning Commission Environment Committee—March 21, 2019

Draft Policy Plan Amendment Text—Natural Landscaping—Public Facilities
Possible Revisions for Internal Staff Consideration
(Edits reflect changes to the November 20, 2018 BOS authorization handout draft)

ADD: Fairfax County Comprehensive Plan, 2017 Edition, Policy Plan, Public Facilities, as amended through July 25, 2017, page 4:

Objective 6: Design, retrofit and maintain public facilities and sites in an environmentally-sensitive manner.

Policy a. Apply, within the design of public facilities and their associated sites, and in consideration of ~~the~~ factors including costs, health, safety/security, and the broader context of facility and site needs (e.g., recreational uses), low impact development (LID) practices and natural landscaping methods where feasible to minimize resource consumption, reduce stormwater runoff, ~~and~~ decrease life-cycle maintenance requirements, increase the habitat value of each site, and increase soil and plant health.

Policy b. Where opportunities arise in consideration of the factors identified in Policy a above, ~~Consider~~ retrofit~~ting~~ and maintain~~ing~~ existing facilities and sites with natural landscaping and LID methods/practices.

Policy c. Ensure that natural landscaping and LID practices are monitored and maintained such that they will remain viable over time.

Policy d. Apply green building practices within the design of public facilities.

ADD: Fairfax County Comprehensive Plan, 2017 Edition, Policy Plan, Glossary, as amended through March 20, 2018, page 11:

NATURAL LANDSCAPING: A landscaping approach through which the aesthetic and ecological functions of landscapes installed in the built environment can be improved, and through which natural areas can be restored, by preserving and recreating land and water features and native plant communities. Sustainable landscapes are formed which protect and restore natural ecosystem components, maximize the use of native plants, remove invasive plant species, reduce turf grass, reduce or eliminate ~~and~~ chemical inputs, ~~improve~~protect, create, and maintain healthy soils, and retain stormwater on-site. In natural areas only locally native plant species are used to provide the greatest possible ecological benefits. In built landscapes, most of the plant cover should be composed of native plant species that support wildlife and improve environmental conditions, although non-invasive non-native ~~exotic~~ plants may be selectively used where appropriate.

Handout for Planning Commission Environment Committee—March 21, 2019

Benefits and Application of Natural Landscaping
And
Five-year Implementation Plan

[Note from staff: The precise date of preparation of this document is not known, but we think it was prepared by the then-Director of Urban Forest Management in 2004 or 2005]

Definition of Natural Landscaping

Landscaping is the physical modification of the natural environment to serve the needs of people by planting, altering the contours of the ground and building structures such as pedestrian ways, paths and picnic areas. *Natural Landscaping* is a relatively new term that incorporates a wide array of landscaping techniques that help retain natural landscape features and their beneficial effects.

On an aesthetical level, natural landscaping attempts to capture the essence of surrounding native plant communities and other natural features, such as hills and water ways in a designed landscape that places plants in arrangements and environments similar to those found in nature. In addition to achieving aesthetical objectives, natural landscaping can be used to mitigate the detrimental effects of land development and reduce property maintenance requirements. Natural landscaping can be used to protect and enhance existing natural resources in order to maximize the levels of social, economic and environmental benefits that can be provided by those resources.

Natural landscaping may utilize native plants exclusively or incorporate a small percent of exotic plants that can thrive in urbanized settings where native species cannot. While not maintenance free, natural landscaping techniques often require less time and money for ongoing maintenance than conventional landscapes. Natural landscaping may also incorporate man-made materials, devices or features that can help minimize maintenance requirements or assist the design to achieve specific outcomes.

Major Benefits, Goals, Treatments and Practices

The following 10 goals describe the environmental, economic and social benefits that are possible to achieve through the application of natural landscaping on Fairfax County properties. The Natural Landscaping Committee (NL Committee) recommends that retrofitted and new facilities be designed to achieve these goals. Following a discussion of each goal, examples are listed of associated treatments and practices.

1. Air Quality Improvement – Improvement of ambient air quality levels by planting or preserving tree canopy and reducing mowing levels. It should be noted that recent changes to United States Environmental Protection Agency (USEPA) policy relating to the Clean Air Act will allow tree cover to receive a modest amount of credits for voluntary stationary source emission reduction programs under Section 110 of the Clean Air Act, and as such tree-related measures will be allowed to receive explicit State Implementation Plan credits for voluntary stationary source emission reduction programs.[1] Specific details of the application of trees to air quality plans have not been defined by USEPA to date.

USEPA requires localities in non-compliance regions to verify the effectiveness of measures, and is likely that they will require any tree canopy involved with these measures to be placed in deed restricted easements and to have long-range management plans developed for them. As such, it may be possible to achieve multiple levels of regulatory compliance from the same areas; i.e., air quality and water quality conservation easements may be allowed to be co-located. In addition, reduction of mowing levels can have a significant impact on air quality. USEPA estimates that a gasoline powered lawn mower emits 11 times the air pollution of a new car for each hour of operation. Gasoline lawn and power equipment, on average, produce five percent of "smog" forming volatile organic compounds (VOC) in non-attainment areas.[2]

- *Develop tree-related measures for inclusion in Fairfax County's air quality management plans*
- *Large-scale no-mow zones planted with seedlings/whips and small nursery stock trees*
- *Increased canopy coverage and shade in parking lot area to reduce raw fuel emissions from parked vehicles*
- *Tree preservation areas set in conservation easements on public lands*
- *Limiting mowing operations in summer months when ozone levels are highest*

2. Energy Conservation - Reduction or elimination of fossil fuel levels needed to maintain landscaping or the utility energy used to heat or cool associated buildings. According to research conducted by the United States Department of Agriculture (USDA), Forest Service and others, trees properly placed around buildings can reduce air conditioning needs by 30 percent and can save 20 - 50 percent in energy used for heating. In addition, USDA estimates that the net cooling effect of a young, healthy tree is equivalent to ten room-size air conditioners operating 20 hours a day. In addition to moderating the interior temperatures of buildings, trees cool the ambient air temperature through a process called "evapotranspiration." Research demonstrates that summer daytime air temperatures are 3°F to 6° F (2°C to 3°C) cooler in tree-shaded neighborhoods than in treeless areas[3]
   - *No-mow zones*
   - *No-mow-zones planted with seedlings, alternative groundcovers, or woody-seed mix*
   - *Removal of turfgrass and replacement with mulch beds in interior parking lot islands and projections.*
   - *Planting native shade trees (nursery stock) 20 to 40 feet away from eastern and western sides of buildings to reduce passive solar gain through windows*
   - *Planting rows of evergreen trees and shrubs to intercept and reduce wintertime wind speeds to decrease heating costs*
3. Pesticide/Fertilizer Reduction - Reducing or eliminating fertilizer and/or pesticide applications. This goal may not have wide-spread application because regular

application of fertilizer on County property is already limited due to budget and staff constraints; however, it may have significant application on formal lawns around governmental facilities under contract or in specialized turf areas, such as athletic fields and golf courses roughs and fairways.

- *Reduce the amount of turf by increasing areas of rough comprised of native plants and natural environments*
- *Adoption of The Audubon Cooperative Sanctuary Program for Golf Courses which encourages golf courses to include wildlife habitat enhancement, establishment of Integrated Pest Management (IPM) Programs and protection of water resources.*
- *Use of IPM on landscapes rather than annual blanket treatment*
- *Replacement of plant species (usually exotics) that require predictably higher levels of pesticide and/or fertilizer application to thrive*
- *Incorporation of "insectary" plants that provide habitat for parasitoid wasps that feed on pests of ornamental plants and garden crops. The wasps will parasitize caterpillars and grubs to feed their young, while the predatory and parasitoid flies attack many kinds of insects, including leafhoppers and caterpillars.*

4. Water Quality Improvement – Improving water quality by minimizing soil erosion or enhancing the nutrient uptake capacity of a landscape. This goal will be supported by existing riparian restoration projects, Low-Impact Development bio-retention practices, Best Management Practices and erosion and sedimentation control practices that utilize vegetation. Native vegetation in drainage ways enhances the infiltration of contaminated stormwater runoff. Root systems improve soil permeability and help the uptake of pollutants and nutrients. Vegetated buffers along stream banks and shorelines intercept surface runoff and subsurface water pollutants.
   - *Re-establishing Riparian buffers with tree and wood plant species*
   - *Stream bank stabilization using bio-logs, fiber mats, emergent and submerged wetland plants, etc.*
   - *Rain Gardens*
   - *Use of "Bayscapes" landscaping schemes on properties adjacent to major waterways*
   - *Protection and management of riparian plant communities*

5. Stormwater Management – Managing stormwater runoff rates by increasing leaf surface area levels, establishing multiple canopy tiers and improving the perviousness of groundcover and soil layers.
   - *Vegetation filer strips in parking lots*
   - *Green roofing products*
   - *Rain Barrels*
   - *Introduction of organic amendments to soils*
   - *Other Low Impact Development techniques related to landscaping*

6. Ecosystem Management - Protecting, managing, expanding, connecting, or restoring native plant communities, wildlife habitat and greenways. Natural landscaping protects and restores habitats for wildlife. The introduction of native plants species can increase the populations of birds, beneficial insects, and animals which are essential to the health of ecosystems.
   - *Control of invasive exotic species*
   - *Plant dominant/indicator species to help re-establish specific plant communities and wildlife habitat*
   - *Identify and map specific plant communities to assist in the selection of appropriate native plant materials in restoration projects*

7. Resource Reduction - Reducing current levels of fuel, materials, staff or budget needed to maintain or establish landscape and grounds. One example that can be used to contrast the cost of establishing natural landscaping with conventional turfgrass shows that conventional installation of sodded turf grasses may exceed $12,000 per acre. Planting turfgrass seeds may cost in the range of $4,000 to $8,000 per acre. This contrasts with the installation costs of $2,000 to $4,000 per acre for seeding native grasses and herbaceous plants.[4]
   - *Mowing reduction with or without replanting*
   - *Sheriff Department work release landscaping program*
   - *Replacing high maintenance plants with low maintenance plants*
   - *Replacing shrubs and trees that obtain inappropriate dimensions for location with species that obtain appropriate dimensions at maturity*

8. Aesthetic Improvement – Improving or enhancing the aesthetic value of a property through the use of native and desirable plant species. Natural landscaping can provide a diversity of color and texture throughout the year which significantly contributes to the beauty of sites. The County's 911 Memorial Garden is an excellent example of the beauty that native plants can lend on a year-round basis.
   - *Replacing turf with perennial wildflowers and native grasses*
   - *Use native plant species that have visually stimulating foliage, flowers, fruit, seeds and bark*

9. Public Education – Promoting the use of natural landscaping techniques and practices on private property by providing opportunities for public education. Natural landscaping puts people in touch with nature. County agencies, such as the Park Authority can and are already using natural landscaping as an educational tool.
   - *Development of educational materials such as brochures, web pages, videos and desktop exhibits that highlight the use of natural landscaping on County property and promote its use on private property*

- *Construct multi-function natural landscaping on high-visibility governmental sites that contain interpretive signage*
- *Develop public service announcements for various media outlets*
- *Promote natural landscaping at the County's Earth Day/Arbor Day Celebration*
- *Promote existing programs such as the National Wildlife Federation's "Backyard Wildlife Habitat" program to construct exhibits at County facilities and school properties*

10. Community Engagement – Increasing neighborhood pride and environmental stewardship by assisting non-profit grass-root groups that are interested in assisting County staff with the maintenance of landscaping at libraries, schools and governmental centers.
    - *Develop programs that encourage individual or groups interested in planting and maintaining natural landscape gardens or exhibits on County property*
    - *Incorporate natural landscape themes or projects into Revitalization Districts*
    - *Encourage gardening groups such as the Virginia Cooperative Extension Master Gardeners to attend Natural Landscaping workshops that are already held at the Park Authority's Green Spring Garden Park*
    - *Encourage local landscape businesses to participate in Natural Landscaping workshops to encourage the development of natural landscaping services for private landowners*

Evaluating Natural Landscaping on Existing County Properties and Facilities and Identifying Potential Projects

The following section approximates the number of existing County properties with potential to implement treatments and practices that support the 10 major goals of natural landscaping. The NL Committee used the 10 goals and associated treatments and practices in the evaluation of 153 governmental facilities and 850 properties managed by the Facilities Management Department, 209 school facilities managed by Fairfax County Public Schools and 101 facilities and 384 parks managed by the Fairfax County Park Authority. From the review of these properties and current programs and resources, the NL Committee identified 17 types of natural landscaping projects whose implementation over a five year period is feasible. The list provides associated goals, number and types of properties affected, along with associated fiscal impact and potential returns.

Cost Estimates

Costs are estimates of material and contractor expenses needed to implement natural landscaping treatments and practices on an on-site basis, and are based on the average size and condition of County properties and facilities. These estimates do not include County staff salaries/hours that might be needed to implement the projects. Global project costs were not provided because actual costs will vary significantly on a site-by-

site basis. Volunteer and community involvement could significantly reduce installation costs for several project types.

The NL Committee did not attempt to project cost savings for maintenance activities. Although the premise that natural landscaping requires considerably less resources and money to maintain than conventional landscaping appears to be legitimate, a literature search on the subject primarily provides anecdotal information; the few quantifiable examples are provided in the report.

The first nine projects will probably have minimal fiscal impact and could be funded through current agency funding levels as follows:

1. ***Establish guidelines for retrofitting the landscapes of existing County facilities***
   - Using the natural landscaping goals as a framework, the NL Committee will develop a formal set of guidelines to help agencies identify and prioritize potential natural landscaping projects in a consistent manner.
   - Goals Supported: All goals are supported
   - Estimated cost: Minimal or no cost
   - Potential Returns: Will help identify and prioritize natural landscaping in a consistent manner
   - Notes: In addition to the 10 major goals, the guidelines will need to incorporate additional criteria such as site specific environmental conditions, neighborhood issues and user agency concerns

2. ***Develop Natural Landscaping Guidelines and Specifications for New Facilities***

   - Goals Supported: All
   - Estimated cost: Minimal or no cost
   - Potential Returns: Will help ensure facilities have lower maintenance costs and are environmentally friendly
   - Notes: Cost benefits from retrofitted natural landscaping take a significant amount of time to realize due to cost offsets associated with the removal and disposal of existing landscape materials and features. However, immediate operational and maintenance cost savings could be realized when a property is designed with a natural landscaping theme from the start and its features installed with the initial construction. Staff from the Capital Facilities Division, DPWES, Fairfax County Public Schools, Fairfax County Park Authority and the Department of Planning and Zoning should examine current specifications, policies and ordinances for opportunities to develop design criteria and specifications for new County facilities with natural landscaping as a focus

3. ***Develop tree-related measures for inclusion in Fairfax County's air quality management plans***
   - Goals Supported: 1, 9 and 10
   - Estimated cost per site: Minimal or no material costs
   - Potential Returns: Credited Ozone and Particulate Matter offset reduction measures for local air quality management plans

4. ***Draft a Countywide Natural Landscaping Policy to communicate the purpose, goals and importance of natural landscaping features on County properties***
   - Goals Supported: 9 and 10
   - Estimated cost per site: Minimal or no material costs; may require training expenditures to educate staff on new methodologies
   - Potential Returns: Consistent application of natural landscaping treatment and practices; by-in by County staff

5. ***Establish no-mow and minimal-mow (once per season) areas and reduce overall mowing by 5% - 10%***
   - Goals Supported: 1, 3, 4, 6, and 7
   - Could be implemented at 180 public school sites
   - Estimated cost per site: Minimal or no cost
   - Potential Returns: Cost savings from smaller contracted mowing areas; lower fuel costs

6. ***Develop educational materials such as brochures, web pages, videos and desktop exhibits that highlight the use of natural landscaping on County property and promote its use on private property***
   - Goals Supported: 1, 3, 4, 6, and 7
   - Could be implemented at 180 public school sites
   - Estimated cost per site: Minimal or no cost
   - Potential Returns: Cost savings from smaller contracted mowing areas; lower fuel costs

7. ***Establish Integrated Pest Management programs for grounds maintenance***
   - Goals Supported: 1, 3, 4, 7, and 9
   - Could be implemented at 209 public school sites
   - Estimated cost per site: Minimal or no material costs; may require training expenditures to educate staff on new methodologies
   - Potential Returns: Reduction in fertilizer and pesticide applications; water quality improvement

8. ***Encourage gardening groups such as the Virginia Cooperative Extension Master Gardeners and others to promote natural landscaping by hosting workshops, seminars, and classes***
   - Goals Supported: 9 and 10
   - Estimated cost per site: Minimal or no material costs; may require training expenditures to educated staff on new methodologies
   - Potential Returns: Dissemination of natural landscaping treatments and practices to private property owners

9. ***Encourage local landscape businesses by hosting natural landscaping workshops, seminars and classes that encourage the development of natural landscaping services for private property owners***
   - Goals Supported: 9 and 10
   - Estimated cost per site: Minimal or no material costs
   - Potential Returns: Increases to the level of natural landscaping services available to private property owners

Projects 10 through 14 may have fiscal impact beyond current agency funding levels. It is anticipated that these treatments and practices will require no more than $5,000 per site to implement as follows:

10. ***Establish no-mow-zones areas and allow to grow naturally or plant with seedlings, alternative groundcovers, or woody seed mix***
    - Goals Supported: 1, 2, 3, 4, 5, 6, 7, 8 and 9
    - Could be implemented at 75 parks
    - Estimated range of cost per site: Minimal cost if allowed to regenerate naturally; $500 - $1,000 per 1,000 square feet if replanted with nursery stock trees; considerably less if seedlings and/or woody seed mixes are used
    - Potential Returns: Cost savings from smaller contracted mowing areas; lower fuels costs; lower VOC emissions; potential for ozone mitigation for air quality plans
    - Notes: Areas allowed to regenerate naturally will need to be carefully monitored to ensure that invasive plants do not become dominate, otherwise additional resources will need to be spent in order to remove the invasive plants

11. ***Plant riparian buffers with native trees and shrubs***
    - Goals Supported: 1, 4, 5, 6, 7, 8, 9 and 10
    - Could be implemented at 50 stream valley parks and one public school site
    - Estimated range of cost per site: $500 - $1,000 per 1,000 square feet when replanted with nursery stock trees; less with seedlings and woody seed mix
    - Potential Returns: Improved water quality; cost savings from smaller contracted mowing areas; lower fuel costs; improved air quality
    - Notes: These riparian restoration projects will supplement existing efforts by

the Park Authority, DPWES and the Virginia Department of Forestry

12. ***Installation of interpretive signs at existing natural landscaping projects on County property that help educate the public on the benefits and specific application of natural landscaping techniques and practices***
    - Goals Supported: 9 and 10
    - Could be implemented at 50 park sites, 10 governmental facilities and five public school sites
    - Estimated range of cost per site: $100 to $1,500 per site depending on nature and size of site and subject matter
    - Potential Returns: Community education and adoption of natural landscape treatments and practices on private property

13. ***Schoolyard Habitat Gardens***
    - Goals Supported: 3, 6, 7, 8, and 9
    - Could be implemented at 16 public school sites
    - Estimated range of cost per site: $500 - $3,000 per garden
    - Potential Returns: Student exposure to natural world; increased wildlife habitat

14. ***Plant shade trees for energy conservation, aesthetics, and air quality***
    - Goals Supported: 1, 2, 5, 6, 7, 8, 9 and 10
    - Could be implemented at 50 parks, one public school site, and 10 governmental facilities
    - Estimated range of cost per site: $2,500 for a 10 tree planting project using 2.5 inch caliper nursery stock trees; less with seedlings and woody seed mix
    - Potential Returns: Lower energy costs in governmental buildings; potential for ozone mitigation for air quality plans

Projects 15, 16 and 17 will have fiscal impact beyond current agency funding levels. It is anticipated that these treatments and practices will require more than $5,000 per site to implement and may require outside contracts to design and install as follows:

15. ***Landscape improvements using native plants around schools and governmental buildings***
    - Goals Supported: 1, 3, 7, 8, 9, and 10
    - Could be implemented at nine governmental facilities and five public school sites
    - Estimated range of cost per site: $1,000 to $25,000 per site for landscape materials depending on size of facility
    - Potential Returns: Cost savings from smaller contracted mowing areas; lower fuel costs; reduction in fertilizer and pesticide applications; community education and engagement; improved appearance of County facilities

16. Refurbish stormwater detention ponds using natural landscaping techniques

- Goals Supported: 4 and 5
- Could be implemented at 10 public school sites and five governmental facilities
- Estimated range of cost per site: $5,000 - $35,000 per site depending on size of detention facility and natural landscape technique
- Potential Returns: Groundwater infiltration; water quality improvement through uptake of nutrients

17. Remove invasive plants that threaten native plant communities and replace with appropriate species trees and shrubs

- Goals Supported: 1, 4, 5, 6, 8, 9 and 10
- Could be implemented at 10 parks
- Estimated range of cost per site: $300 - $1,300 per 1,000 square feet for manual invasive plant removal and replacement with nursery stock trees; less cost with seedlings and woody seed mix. Depending on total area and nature of invasive plants, these projects could exceed $50,000 per site
- Potential Returns: Protection of ecological integrity and improved ability to deliver socio-economic and environmental benefits

Identifying, Funding and Tracking the Effectiveness of Natural Landscaping Projects

In addition to normal agency funding routes, the NL Committee could submit specific natural landscaping projects through the mechanisms established in the Environmental Improvement Program (EIP), which is administered by the Environmental Coordination Committee (ECC) and reviewed internally by the ECC's Action Group before being submitted as a budget item for the Board of Supervisor's consideration. As a start, the NL Committee will submit a limited number of natural landscaping projects for inclusion in the FY07 EIP through this mechanism.

The NL Committee recommends developing performance and cost tracking criteria to monitor the success of specific techniques, practices and projects. The performance and cost data could be used as a baseline to evaluate the level of cost-effectiveness and environmental benefits that are likely to be achieved by proposed projects.

Challenges That Must Be Addressed In Order To Fully Realize the Benefits of Natural Landscaping

The NL Committee recommends that the following actions be considered by the Board of Supervisors in order to ensure the aggressive and widespread use of natural landscaping.

Countywide Natural Landscaping Policy

A Countywide Natural Landscaping Policy will be needed to clearly communicate the purpose, goals and importance of natural landscaping features on County properties to both the public and staff. Official policy language would help ensure consistent application of natural landscaping treatment and practices, and acceptance by County staff. In addition to developing a stand alone policy, the NL Committee will be looking for opportunities to embed natural landscaping concepts and guidelines into existing County Code and policies, such as the Public Facilities Manual, the Zoning Ordinance, and the Comprehensive Master Plan Policy Plan. The relevant goals, concepts and principles of natural landscaping should also be embedded in future natural resource management plans such as urban forest management plans, watershed management plans and air quality plans.

Public Education and Outreach

Although natural landscaping is a very effective way to minimize the detrimental effects of pesticides and fertilizers, as well as the noise pollution and emissions from lawn-mowing equipment, its wide spread acceptance by the public and County staff cannot be assumed. By far, the predominant groundcover used on private and public property today is turfgrass. Turfgrass is an inherent part of western culture. The suburban grass lawn is borrowed from the heavily grazed, short grass pastures and formal gardens of Europe, particularly England. Today, a weed-free finely manicured lawn is still highly esteemed and a dominant feature of most residential, institutional and commercial landscapes. Since the 1950s, a multi-billion dollar-a-year industry has developed in the United States to support the establishment, mowing, fertilization, and weeding of turfgrass; but in a manner that is not always kind to other natural resources such as water and air.

Since the manicured lawn is deeply imbedded in American culture and economy, in order to gain wide-spread acceptance and eventual emulation by the public, an effort to replace turfgrass and other mainstream forms of landscaping with alternative landscaping treatments on public property will need to be presaged with public outreach and education. The need to educate will become critical, especially when establishing no-mow zones in areas that are located in close proximity to residential and formal commercial uses where the majority of the public has an expectation to see grass that is mowed on a frequent basis.

Educating County Employees

Since County employees are part of the larger community and are subject to the same cultural influences, efforts to communicate the desirability and need for natural landscaping should be extended to public servants as well. The NL Committee anticipates that some forms of natural landscaping may encounter resistance from staff that may have strong opinions about landscape appearance based on more traditional viewpoints. Certainly, natural landscaping projects will need to be implemented in a

manner that harmonizes with the official use(s) of the facility and takes into account the concerns of on-site staff; however, unless the purpose and overall goals of the landscape are communicated, and staff in turn accepts their validity, the long-term viability and effectiveness of the landscape treatments will remain in question.

Encouraging the Local Green Industry

The NL Committee recommends that Fairfax County encourage local landscaping companies to develop and expand natural landscaping services to private property owners by pointing out additional opportunities for business development, especially in relation to natural landscape design and the propagation and installation of native plant materials. Encouraging the local Green Industry to expand their natural landscaping services will complement the County's public outreach efforts and will make it easier for the public to emulate the natural landscaping examples they observe on County properties

Along these lines, staff from Urban Forest Management, DPWES and the local Virginia Cooperative Extension Agent currently host workshops and conferences with local landscape companies to discuss landscaping design and installation issues. Natural landscaping information will be included in the next workshop which will be held in the winter months of 2005.

Need for Oversight and Continued Inter-Agency Cooperation

The NL Committee is currently operating on an ad-hoc basis. The NL Committee recommends that a more formal arrangement be made in order to ensure that an aggressive and unified approach toward implementing natural landscaping techniques and practices continues as dictated in the June 21, 2004 Board Matter.

The NL Committee recommends that the Board of Supervisors consider officially chartering an inter-agency group comprised of representatives from the same agencies already represented on the NL Committee, plus representatives from other natural resource management organizations such as the Virginia Cooperative Extension, Virginia Department of Forestry, the Northern Virginia Soil and Water Conservation District, and a local Green Industry representative and charge that group to:

- Implement a five-year natural landscaping plan in an aggressive but cooperative fashion
- Update the palette of natural landscaping techniques and practices as new information and research emerges
- Produce an annual progress report that evaluates the level of cost-effectiveness and benefits that specific natural landscaping practices, techniques and projects are likely to provide
- Submit natural landscaping projects to the ECC for possible inclusion into the annual Environmental Improvement Program
- Encourage the community to embrace and use natural landscaping treatments and

practices on privately owned property and open space

- Ensure inter-agency cooperation, communication and sharing of resources to assist the implementation of natural landscaping projects

Sources:

1 Center for Urban Forest Research, Urban Forest Research Newsletter, January 2005, page 6
http://cufr.ucdavis.edu/products/cufr562_Newsletter_Jan05_Special_Edition.pdf

2 and 4 United States Environmental Protection Agency. *A Source Book on Natural Landscaping for Public Officials*. http://www.epa.gov/glnpo/greenacres/

3 United States Department of Energy, Landscaping for Energy Efficiency DOE/GO-10095-046, FS 220 April 1995
http://www.eere.energy.gov/consumerinfo/pdfs/landscape.pdf

Attachment E

Natural Landscaping Policy & Application

Department of Public Works and Environmental Services
Working for You!

A Fairfax County, VA, publication
March 21, 2019

1

Natural Landscaping (NL) Defined

A landscaping approach through which the aesthetic and ecological functions of landscapes installed in the built environment can be improved, and through which natural areas can be restored, by preserving and recreating land and water features and native plant communities. Sustainable landscapes are formed which protect and restore natural ecosystem components, maximize the use of native plants, remove invasive plant species, reduce turf grass, reduce or eliminate chemical inputs, protect, create, and maintain healthy soils, and retain stormwater on-site. In natural areas only locally native plant species are used to provide the greatest possible ecological benefits. In built landscapes, most of the plant cover should be composed of native plant species that support wildlife and improve environmental conditions, although non-invasive non-native plants may be selectively used where appropriate.

-Fairfax County Draft NL Definition March 2019

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Fairfax County Natural Landscaping

Oakton Library (Providence District)

Stormwater Planning Division 3

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Where Does NL Fit In?

Natural Landscaping is Part of Many Related Programs

- Green Infrastructure – US EPA
- Environmental Site Design – VA DEQ - Stormwater Regulations
- Leadership in Energy and Environmental Design (LEED)
- Envision – American Society of Civil Engineers
- Conservation Assistance Program (CAP) – NVSWCD
- Habitat at Home – Virginia Department of Game and Inland Fisheries
- BayScapes – USFWS Chesapeake Bay Program
- Plant NOVA Natives
- Living Buildings
- Ecological Restoration – Society for Ecological Restoration
- Audubon at Home – Audubon Society of Northern Virginia
- VA Master Naturalists
- Habitat Gardening for Wildlife – VA Master Gardeners
- Garden for Wildlife – National Wildlife Federation
- NoVAOutside – School-Age Green Educators

Stormwater Planning Division 4

4

Major Benefits and Goals of Natural Landscaping

1. Air Quality Improvement
2. Energy Conservation
3. Pesticide/Fertilizer Reduction
4. Water Quality Improvement
5. Stormwater Management
6. Ecosystem Management
7. Resource Use Reduction
8. Aesthetic value
9. Public Education
10. Community Engagement

Stormwater Planning Division 5

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Fairfax County Natural Landscaping

Natural Landscaping Area
King Abdullah Academy (Sully District

Bioretention
Laurel Hill Adaptive Reuse Area
(Mt. Vernon District)

Tree Conservation Award Winning Projects

Stormwater Planning Division 6

6

Background of 2004-2007 NL Activity

- June 2004: Staff directed to develop plan and guidelines for "Aggressive and widespread use" of natural landscaping on County properties - DPWES, UFMD assigned as lead
- July 2005: Interagency Natural Landscaping Group formed
- October 2007: Interagency Natural Landscaping Committee Presented to BOSEC
  1. Natural Landscaping Guidelines
     a) Fairfax County Natural Landscaping Manual
     b) Natural Landscaping Implementation Plan
  2. Draft Policy Plan Amendment
     a) Draft Policy Plan Text (see handout)

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Background of 2004-2007 NL Activity

Natural Landscaping Manual

- Defines Natural Landscaping
- Conveys purpose, goals, and importance of natural landscaping
- Provides checklists to help facilitate planning and design
- Is adaptable for retrofitting existing facilities and designing new facilities

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Background of 2004-2007 NL Activity

Natural Landscaping Implementation Plan

- Establishes operational guidelines and identifies major elements to accomplish goals
- Specifies clear lines of communication for identifying, planning, and funding projects
- Ensures projects are monitored for success
  - Achieving natural landscaping goals
  - Collecting quantitative data for annual reports

Stormwater Planning Division 9

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Fairfax County Natural Landscaping

Bio-retention Swale
Stringfellow Park & Ride
(Sully District)

Natural Landscaping
National Wildlife Federation
(Hunter Mill District)

Stormwater Planning Division 10

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Background of 2018 NL Activity

- Bee-Friendly Board Matter – 2015
- Board Matter – April 10, 2018
  - "...that the Board direct the Park Authority, DPWES, Urban Forestry Division, and FMD to come to a future Environmental Committee meeting to provide a progress report on the implementation outlined in Chairman Connolly's June 21, 2004 Board Matter."
- Natural Landscaping Committee Convenes 2018
  - County Executive's Office
  - Department of Planning and Zoning
  - DPWES – UFMD, SWPD, CAP
  - Park Authority
  - Facilities Management Department
- BOSEC Presentation October 2, 2018
  - Changes to NL definition
  - Proposed Comprehensive Plan Language

Sequoia Park (Mason District)

Stormwater Planning Division 11

11

NL Next Steps – Comprehensive Plan Amendment

ADD: Fairfax County Comprehensive Plan, 2017 Edition, Policy Plan, Public Facilities, as amended through July 25, 2017, page 4:

Objective 6 **Design, retrofit and maintain public facilities and sites in an environmentally-sensitive manner.**

Policy a Apply, within the design of public facilities and their associated sites, and in consideration of factors including costs, health, safety/security, and the broader context of facility and site needs (e.g., recreational uses), low impact development (LID) practices and natural landscaping methods where feasible to minimize resource consumption, reduce stormwater runoff, decrease life-cycle maintenance requirements, increase the habitat value of each site, and increase soil and plant health.

Policy b Where opportunities arise in consideration of the factors identified in Policy a above, retrofit and maintain existing facilities and sites with natural landscaping and LID methods/practices.

Policy c Ensure that natural landscaping and LID practices are monitored and maintained such that they will remain viable over time.

Policy d Apply green building practices within the design of public facilities.

Fairfax County Draft March 2019

Stormwater Planning Division 12

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NL Next Steps

1. BOS to Authorize a Comprehensive Plan Amendment to the Policy Plan.
2. BOSEC endorsement of budget approach to fund natural landscaping.
   a. During the budget development process, staff should identify cost-effective natural landscaping retrofit projects that support the county's Natural Landscape Implementation Plan.
   b. Additional funds shall be included in the county's Environmental Improvement Program (Environmental Initiatives) that would be earmarked to support the Natural Landscape projects.
3. Form a core team of professional staff coordinated by UFMD under Community of Practice.
   a. County Executive will form a core team of professional staff coordinated by UFMD under Community of Practice detailed in the Tree Action Plan 2.0 to include staff from FMD, DPWES, the Park Authority and NVSWCD.
   b. They will promote and provide review of natural landscaping and related practices and opportunities.

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Fairfax County Natural Landscaping

Poplar Ford Park Meadow Restoration
(Sully District)

Before

After

14

NL Next Steps

- Staff stakeholder meeting April 8, 2019
- Funding for on-going maintenance
- Revision of county contracts and specifications to include consideration for natural landscaping

Stormwater Planning Division 15

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Fairfax County Natural Landscaping

Fred's Oak Rain Garden (Springfield District)

Before

After

Stormwater Planning Division 16

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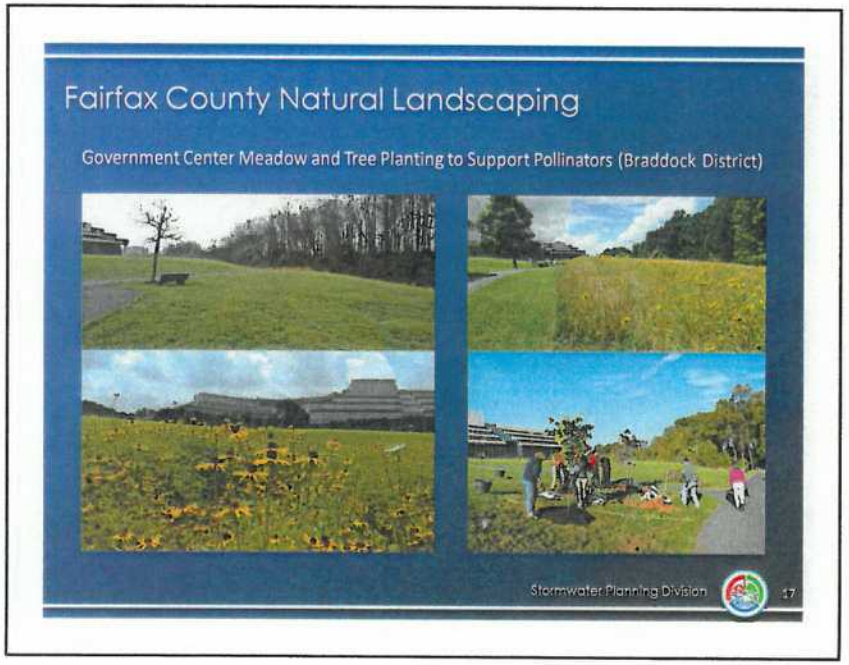
Fairfax County Natural Landscaping
Government Center Meadow and Tree Planting to Support Pollinators (Braddock District)
Stormwater Planning Division
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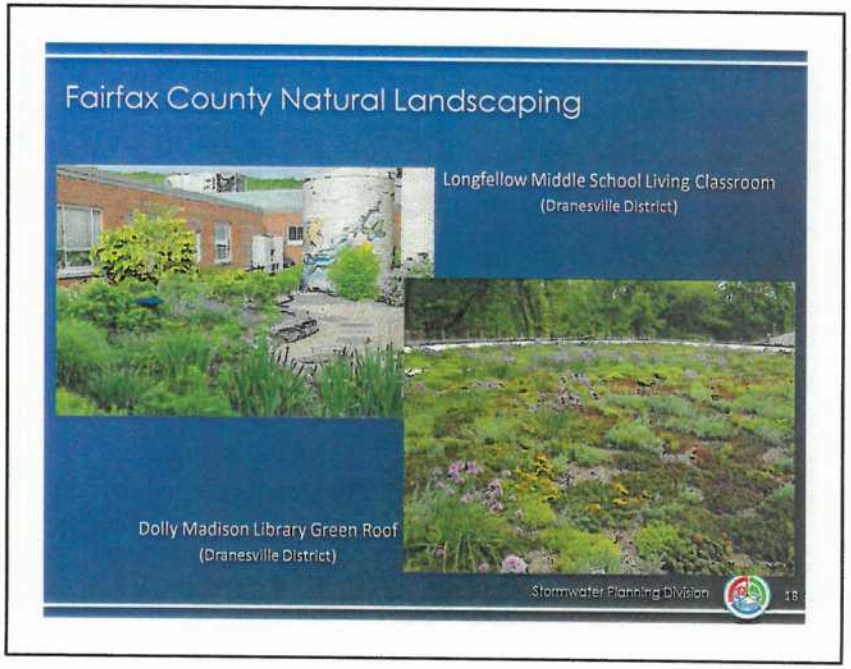
Fairfax County Natural Landscaping
Longfellow Middle School Living Classroom
(Dranesville District)
Dolly Madison Library Green Roof
(Dranesville District)
Stormwater Planning Division
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Fairfax County Natural Landscaping

Banks Property Stream Restoration (Lee District)

Before

Three years after Restoration

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Fairfax County Natural Landscaping

Great Falls Library (Dranesville District)

Surrey Court HOA (Mt Vernon District)

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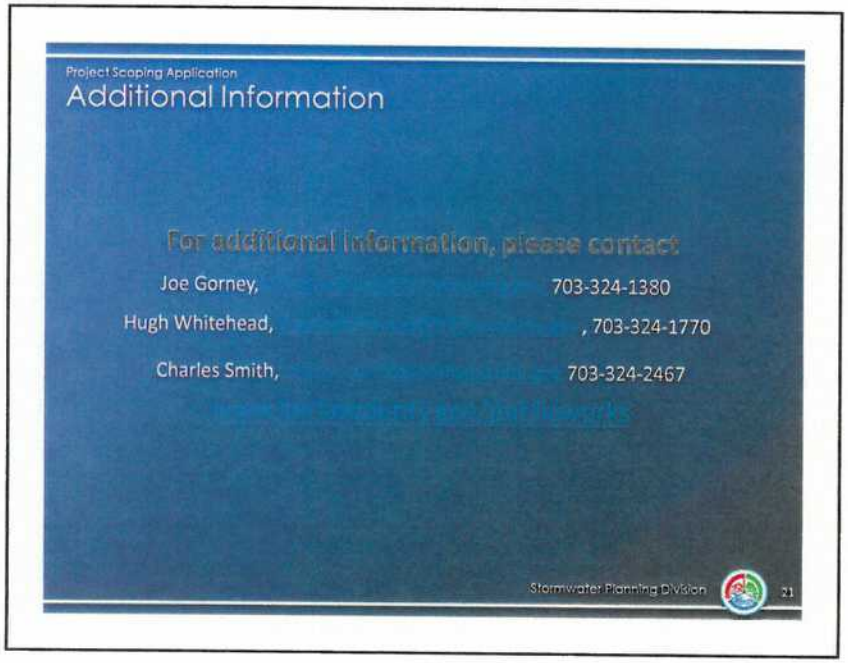
Project Scoping Application
Additional Information
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Stormwater Planning Division
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