2018 STRATEGIC PLAN
VIENNA AS AN
ENVIRONMENTALLY SUSTAINABLE COMMUNITY

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The objective of this policy brief is to provide additional information regarding Vienna's efforts to be an environmentally sustainable community. Although there are many factors that contribute to environmental sustainability, this brief focuses on green space, native plantings, state stormwater regulations, stream restorations, and the conversion to LED street lights.

Maintain and Improve Public Green Spaces

Background

- In 1940, Vienna was still a small, quiet, rural town with a population of 1,237 and remained virtually untouched by the metropolitan character of the nation's capital. The Town began to take on a new look in the 1950s when many businesses started to move from the old commercial section on Church Street to Maple Avenue. The post-World War II rush to the suburbs brought a burgeoning population to Northern Virginia, almost 10,000 new residents to Vienna alone, their new houses blending with those of an earlier era.
- In 1954, the first of Vienna's modern shopping centers was opened. More shopping centers followed in quick succession along a widened Maple Avenue in an attempt to keep up with the influx of newcomers who bought homes in the Town's new subdivisions. Older residents recall with nostalgia the Victorian homes and maple trees that lined Maple Avenue before it was widened in 1958.
- 1950s = the "invention" of the back yard and a focus on large green lawns, which results in the removal of many native species and an increase in invasive species.
- Redevelopment in the last several years = 500+ larger houses and more removal of trees and shrubs.

Current situation

- Increasing size and quantity of redevelopment projects (Maple Avenue and new single-family dwellings), using maximum allowed space on lots
- Invasive species are another potential threat to native plant diversity. A recent study shows that more than 13,000 species—3.9% of the world's vascular plant flora— have become naturalized somewhere outside their native range as a result of human activity (van Kleunen et al., 2015).
- Habitat loss and associated fragmentation is the biggest single threat to plant diversity (ter Steege et al., 2015)
- Few forest-adapted plant species survive complete deforestation, and even if a substantial fraction of the original forest cover remains, fragmentation drives changes that tend to reduce plant diversity (Kettle and Koh, 2014).
- Community groups (such as the Community Enhancement Commission, The Morton and Spapperi Family Foundation , etc) and Town staff work to preserve existing native species and plant natives in new areas where possible (projects include native plantings at the community center, pollinator garden at Meadow Lane Park, etc.)
- Increasing awareness of importance of native plantings and removal of invasives
- Along with the City of Falls Church, the Town has less local parkland as a percent of total acreage (3.8%) than any of our neighboring jurisdictions

Key Measurements

- Track tree planting numbers on Town projects (aim for 100 % native plantings)
- Increase usable green space percentage (sf) on Town-owned property through pocket parks, etc. (10% - 20%)
- Community survey on visits/use/enjoyment of Town parks

- Increase hours spent by volunteer groups
- Increase number of articles in *Vienna Voice* about invasive species control and native plantings
- Percentage of new commercial projects with native garden space

Suggested Strategies

- Encourage/require native pollinator gardens, etc. on new commercial development
- Enact measures requiring control of invasive species on NSFD lots
- Create a list to prioritize the most practical locations for pocket parks, including cost estimates
- Redesign existing park space to utilize areas for native gardens
- Create an inventory of Town trees (requires software, training, and volunteers/interns)
- Organize (or increase) volunteer group participation for removal of invasive species
- Acquire open space in Town for park/recreation use
- Develop a park-funding strategy (local revenue, grants, corporate partnerships)
- Incorporate developer contributions for open space acquisition or capital park projects into the list of standard development conditions for rezonings and special exceptions

Stay Current with Stormwater Management Regulations and Practices

Background

State SW Regulations

- Mandated by Congress under the Clean Water Act and implemented in Virginia by DEQ, the Town operates a separate municipal storm-sewer system (MS4) under authorization of the General Virginia Stormwater Management Program (VSMP) Permit for Discharges of Stormwater from Small MS4s (Permit VAR040066).
- The original permit issuance occurred in 2003 and is updated on a 5-year permit cycle. The current five-year permit will expire June 30, 2018.
- While the focus of the MS4 permit is on pollution prevention, the permit also contains special conditions that require the Town to develop clean-up "action plans" for impaired streams. These impaired streams have a set total maximum daily load (TMDL) and assigned waste load allocations (WLA) for common pollutants.
- The Town has developed a Chesapeake Bay TMDL Action Plan, which was approved by DEQ on December 28, 2015. Pollutant reductions addressed in the Chesapeake Bay TMDL Action Plan include total nitrogen, total phosphorus, and sediment. The plan calculates baseline and target loads as provided in the MS4 permit and identifies the means and methods by which target loads will be achieved. The Town must implement stormwater controls sufficient to meet the target loads by the end of the permit cycle (June 30, 2018).

- In addition to the Chesapeake Bay TMDL, the Town is accountable for WLAs associated with PCBs, sediment, and bacteria.
  - As allowed in Section I.C.2.b(3) of the MS4 permit, the Town of Vienna has entered into a cooperative agreement with Fairfax County and the Town of Herndon to share pollutant

reductions from jointly implemented projects using the county's Stormwater Service District fee. Town Council adopted the agreement October 28, 2013.

- Changes to the VSMP, adopted by the Virginia Soil and Water Conservation Board in 2011, impose additional responsibilities on the Town and were implemented starting July 1, 2014. These new responsibilities include enhanced stormwater quality and quantity control, applicable fees, and compliance with Virginia's general permit for all regulated land-disturbing activities.

Stream Restorations

- The Town has completed the following stream restoration projects:
  - Wolftrap Creek Phase I - completed October 2013 (Follin Lane to downstream end of Wildwood Park +/- 2,500 LF)
  - Hunter's Branch - completed October 2016 (Courthouse Road SW downstream to Tapawingo Road SW +/- 2,060 LF)
  - Wolftrap Creek Phase II - completed February 2018 (Town boundary downstream to Follin Lane +/- 1,020 LF)
- Purpose of stream restorations is to use natural channel design to recreate a natural stream and stabilize steep and eroding banks that have resulted from urban development prior to implementation of stormwater quality and quantity regulations.
- Stream restorations also restore the ecological potential of the environment, help to remove invasive species, and provide passive recreation areas for the community.
- Stream restorations have been funded using the Virginia Department of Environmental Quality (DEQ) Stormwater Local Assistance Fund (SLAF) grants when available and Fairfax County

Stormwater Tax money in accordance with paragraph 25 of the new cooperative agreement between Fairfax County, the Town of Herndon and Town of Vienna.

Current Situation

State SW Regulations

- The table below shows a summary of the FY16 Chesapeake Bay TMDL Action Plan implementation results. The Chesapeake Bay TMDL outlines the Town's plan to meet the first 5% of nutrient and sediment reductions by June 30, 2018. Note that reductions achieved above 5% this cycle are applied to the next permit cycle.

Pollutant	5% Reduction Requirement from Permit	Planned Reductions from Action Plan	Reductions Achieved
Total Nitrogen	103.84	121.32	1,209.05
Total Phosphorus	12.54	53.35	468.11
Total Suspended Sediment	10,523.40	18,864.74	140,366.36

- Reductions outlined above are achieved through annual street sweeping efforts and joint Fairfax County stream restoration projects. On joint projects, the Town receives a 2.4% reduction credit. This sharing of credit allows for a regional approach to comply with assigned TMDLs.

- The Town also receives credit for more stringent regulations on NSFDs and future redevelopment projects.

Stream Restorations

- The Department of Public Works (DPW) is currently working on design of the Piney Branch Stream Restoration at the Northside Property Yard (600 Mill Street NE). This project will restore +/- 1,400 LF of stream from the Mill Street culvert downstream to the footbridge in Northside Park. The project is funded with 50% SLAF money and 50% Fairfax County support.
- DPW has an ongoing effort to inspect the condition of streams throughout the Town. This information is used to apply for additional SLAF grants and for continued coordination with Fairfax County for future projects.

Key Measurements

State SW Regulations

- Continue tracking annual progress toward Chesapeake Bay TMDL Action Plan by documenting annual reductions (in pounds) of nitrogen, phosphorus, and suspended sediment. Per the TMDL, MS4 permit holders, including the Town, will have to abide by the following reduction schedule:
    - 5% of required reductions by the end of the first permit cycle (June 30, 2018)
    - 40% of required reductions by the end of the second permit cycle (June 30, 2023)
    - 100% of required reductions by the end of the third permit cycle (June 30, 2028)

Stream Restorations

- Annual linear feet of restored stream and associated pounds of phosphorus removed per project.

- Cost effectiveness ratio that compares projected cost with total amount of phosphorus removed ($/lb). This is a key measurement tracked and prioritized by DEQ when awarding SLAF grant projects.

Suggested Strategies

State SW Regulations

- Required updates to MS4 permit to correspond with 5-year permit cycle.
- New DEQ-mandated Chloride TMDL must be incorporated in to next permit cycle. This will include salt management training for employees and public outreach/education efforts.
- Continue street sweeping to achieve required compliance with Chesapeake Bay TMDL pollutant load reductions.

Stream Restorations

- Continued coordination with Fairfax County and DEQ to utilize the cooperative agreement between Fairfax County and available SLAF grant opportunities. Organize future stream restorations to align with other Town projects if practical.
- The following list of stormwater projects and stream restorations is pending Fairfax County's approval for funding support (anticipated approval in May 2018 to correspond with adopted county budget). Project list is iterative and subject to change.
    - Tapawingo/Kingsley Urban Bioretention
    - Bear Branch - Southside Park Stream Restoration
    - Glyndon Street Bioretention
    - Hunters Branch Phase 2 Stream Restoration

- Northside Property Yard Best Management Practice
- Bear Branch Trib - Southside Park Stream Restoration
- Piney Branch - W&OD Trail Stream Restoration
- Wolftrap Creek - Westwood Park Stream Restoration

Increase Utilization and Conversion to LED Lights

Background

- LEDs have many advantages over incandescent light sources, including lower energy consumption, longer lifetime, improved physical robustness, smaller size, and faster switching.
- Public streetlights throughout Town are owned and maintained by Dominion Energy, through a contract between Dominion and Fairfax County. The county pays for all standard streetlights in the Town.
- On July 18, 1995, the Town entered into an agreement with Fairfax County for the Church Street Revitalization Project. An element of this project was to install acorn-style streetlights. Per the agreement, the Town pays for the premium cost of these lights above the standard light cost. The agreement was amended February 11, 1999 for conversion to acorn Lights along Maple Avenue. The Town receives a bill from Fairfax County on an annual basis for the premium associated with operation and maintenance of the lights. The June 2017 cost was approximately $14,000.
- There are 206 acorn-style lights and 923 standard streetlights under the Dominion contract.
- In September 2008, DPW retrofitted one standard Mercury Vapor to LED lamp at 105 Center Street N as a test case.
- In 2010 the parking lot lights at Town Hall were upgraded to LED.

Current situation

- To date DPW has retro-fit 66 Acorn style lights to LED.
- In 2016 Dominion Energy informed the Town that such retro-fits were prohibited as Dominion has ownership and maintenance of the lights; DPW no longer retrofits lights.

- The current Fairfax County contract does not include LED lights nor a rate structure for LEDs.
- Dominion and local Northern Virginia communities are discussing LED options that Dominion can provide.
- Town staff is working with the county streetlights division to amend the Dominion contract to include LED standard fixtures as well as allowance for conversion of existing lights.
- Vienna has implemented LED lights for the parking lot at the community center.
- The Town's FY2019 budget includes money to upgrade Northside Property Yard exterior lighting to LED.

Key Measurements

- Number of LEDs replaced per year – Dominion streetlights
- Number of LEDs replaced/installed at Town facilities
- Amount of electricity cost savings

Suggested Strategies

- Continue to collaborate with Fairfax County and work with Dominion to ensure LED bulbs are installed with all light outage replacements.
- Work with county staff to upgrade the Dominion contract to prioritize LED light conversions and installations throughout Town.
- Monitor and track LED bulb replacements and installations and report data as a performance measurement in the annual budget.