Appendix L: Non-Structural Projects

Disconnect Impervious Area

Action A2.1: Program to facilitate and encourage homeowners and developers to disconnect impervious areas.

Disconnect Downspouts.

Rain Barrel.

Strategy: Form a program to encourage homeowners to disconnect their downspouts from the driveways and aim towards a permeable area, most likely a lawn area. Rain barrels can be distributed by the County for free or a subsidized rate to homeowners in the headwaters of the watershed. Developers can be encouraged to utilize natural landscaping techniques, including grass swales, disconnect impervious areas and provide more open space for stormwater to infiltrate into the soil.

Maintenance: The homeowner needs to monitor the downspouts for erosion or clogging they may hinder infiltration of the water into the surface. Rain barrels need to be inspected for clogging several times a year and after major storms. Minor parts including spigots, screens, downspouts, and leaders may need to be replaced.

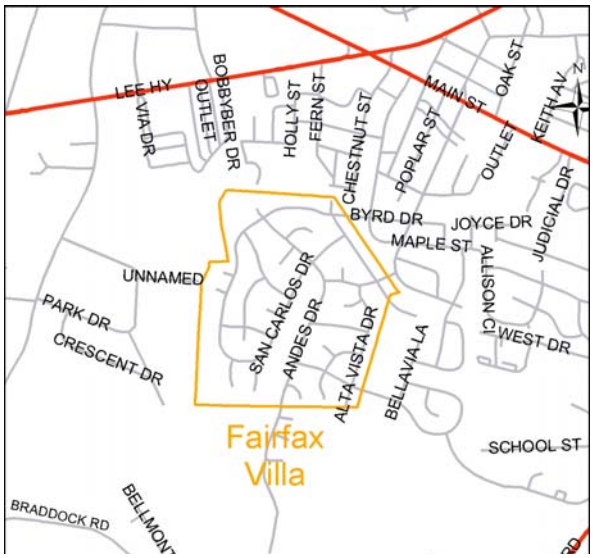
Benefit: There will be a reduction in stormwater runoff flowing directly to the street and storm drain system. This will allow for infiltration and groundwater recharge to increase. Homeowners with rain barrels can use the water for lawn and gardening purposes, thus reducing their water usage.

Cost: $8,000 annual cost

Street Sweeping

Action A2.2: Form a monthly street sweeping program for parking lots in the watershed and residential streets in the Fairfax Villa subdivision

Street Sweeping.



Fairfax Villa subdivision.

Strategy: Schedule monthly street sweeping in parking lots and residential streets in the Fairfax Villa subdivision.

Maintenance: The life expectancy of a mechanical street sweeper is five years and a vacuum type sweeper is eight years.

Benefit: It is estimated that 90% of street contaminants will accumulate within 12 inches of the curb. Street sweeping will remove the sediments, debris and gross particulate matter that cause stormwater detention facilities and storm drain pipes to clog and function improperly.

Cost: $40,000 annual cost.

Monitor Riparian Buffers

Action A4.2: Monitor the condition of restored and existing riparian buffers with annual stream walks to evaluate the condition and areas needing improvement.

Riparian Buffer.

Riparian Buffer monitoring walk.

Strategy: The County will encourage volunteers to perform annual stream walks to collect information about the condition of the buffer. County personnel will teach the volunteers about the benefits of healthy buffers and identity the appropriate plants to use. The monitors shall file a report with the County for record keeping and replacement of buffer if necessary.

Maintenance: No maintenance is necessary for the walk and monitoring of the buffers.

Benefit: This will provide the County with a way to monitor the success or failure of protecting existing and restored buffers. Also, it will provide public outreach and let the citizens have a sense of ownership with the watershed condition.

Cost: $10,000 annual cost.

Acquire Conservation Easements

Action A5.1: Facilitate the acquisition and donation of conservation easements by community groups for riparian buffer and stream protection, and public/private open space for the environmental quality corridors described in the Fairfax County Comprehensive Plan.

Strategy: Continue the existing partnership with the Northern Virginia Conservation Trust (NVCT) and support the acquisition of additional conservation easements in the watershed. The NVCT already holds a 5.5 acre easement and a 8.66 acre easement along Popes Head Creek in the Town of Clifton and plans to create a trail system for recreation.

Landowner education must be a strong component of this action in order to inform owners about potential benefits and tax credits that they might receive. Conservation easements will be primarily targeted in headwaters areas that lack riparian buffers where possible, or in areas with environmentally sensitive lands that are not otherwise protected by ordinance. Large blocks of forest will also be targeted; this will provide large habitat areas for wildlife and prevent fragmentation.

Maintenance: The properties must be inspected annually to ensure that they are complying with the terms of the easement.

Benefit: This will increase and improve the riparian buffers and protect the streams for perpetuity. Additionally, this will result in improved habitat, reduced stream and property erosion, and filtering of pollutants from runoff.

Cost: $30,000 annual cost.

Signage for RPAs

Action A6.1: Post official County signage that publicizes the existence of the Resource Protection Areas (RPAs) and states that ATV and other usages that destroy vegetation and cause erosion are not permitted in the RPA.

No Trespassing Sign.

Private Property Sign.

Strategy: Signage will be placed in highly visible locations near known ATV trails. The County will coordinate with local landowners to determine the optimal place for signs.

Maintenance: The areas need to be check periodically to determine the signs are still erect and not defaced. If maintenance is necessary, the landowner or inspector will file a report with the County to get the problem resolved.

Benefit: The signs may deter ATV users and others from activities that damage vegetation and cause erosion within the RPAs.

Cost: $15,000 initial cost.
$3,200 annual cost.

ATV Enforcement

Action A6.2: Coordinate with the Fairfax County Police to target areas with significant ATV impacts for enforcement of existing laws and ordinances (e.g. trespassing and environmental regulations).

Vicinity Map.

ATV Usage on Trail.

Strategy: Establish "neighborhood watch" groups to report ATV violations on private property or Fairfax County parkland. The neighborhood watch groups could coordinate with the local Fairfax County Police community liaison to enforce "no trespassing" and RPA regulations. They could also help educate citizens about the impacts ATVs have on the watershed.

Maintenance: No maintenance is necessary for this action.

Benefit: This will provide a deterrent to illegal ATV use on private land and RPAs and reduce the number of ATV violations.

Cost: $10,000 annual cost.

Friends of Popes Head Creek group

Action B1.1: Support the formation of a "Friends of Popes Head Creek" group composed of local citizens.

A Friends of Popes Head Creek group can promote environmental education and stewardship at community events.

Strategy: The existing Citizen's Advisory Committee will be encouraged to continue to meet after the watershed planning process has been completed and expand membership. They will coordinate with other existing organizations to create a robust network of watershed stewards. The County will provide guidance and technical assistance through the Community Watershed Support Services program.

Maintenance: No maintenance is necessary for this action.

Benefit: The Friends of Popes Head Creek group will coordinate with existing local and state organizations to promote volunteer opportunities such as stream cleanup, stream monitoring, and education activities. They can seek grants and community sponsors to help fund watershed improvement projects. A feeling of community "ownership" of the watershed can also persuade residents to protect their environment.

Cost: $4,800 annual cost.

Volunteer Stream Monitoring

Action B1.2: Establish a group of volunteer stream monitors and monitoring sites.

Stream Monitoring.

Inspecting Findings.

Strategy: The main stem of Popes Head Creek does not currently have any active volunteer stream monitors in the stream monitoring program run by the Northern Virginia Soil and Water Conservation District. The Community Watershed Support Services program or members of the Stream Protection Strategy (SPS) will provide training to volunteers and assign them to existing SPS sampling sites. The volunteers will also coordinate with the existing group of volunteers at the Audubon Naturalist Society's Webb Sanctuary, who monitor an unnamed tributary of Popes Head Creek. The volunteers will conduct sampling at the SPS sites four times a year, and report their findings to the County.

Maintenance: No maintenance is necessary for this action.

Benefit: This will supplement and enhance the level of monitoring that is currently performed in Popes Head Creek and provide a more complete dataset for evaluation. It will engage the citizens and provide them with an opportunity to learn more about biological monitoring. The monitoring can also be used to evaluate the impacts of BMPs and LID projects that have been installed upstream of the monitoring stations.

Cost: $8,000 annual cost.

Educational Material for Homeowners on Landscaping

Action B2.1: Develop and distribute educational materials that describe beneficial landscaping techniques for homeowners.

Strategy: There are numerous existing materials that describe various aspects of watershed protection; the materials that are most applicable to the Popes Head Creek Watershed will be consolidated and packaged together. If the existing materials do not adequately address the specific issues found in Popes Head Creek, then new educational materials will be produced by the County. The materials will, at a minimum, address the following issues:

- Nutrients and proper lawn care;
- The benefits provided by riparian buffers;
- The benefits of using native plants for landscaping, and how to identify and remove invasive plant species;
- Identification keys for native plant species;
- Local nurseries that sell native plants;
- Care of home ponds;
- Contact information for the Fairfax County Master Gardener and the Agricultural Extension Office.
- Easy-to-implement solutions to stormwater runoff, designed for homeowners.

The materials will be applicable for both large (greater than one acre) and smaller lots. The materials can be mailed annually to homeowner associations (HOAs) for redistribution. The materials can be included in quarterly notices from the Fairfax County Water Authority; however, some residents in the watershed maintain private wells and do not receive mail from the Water Authority. Another strategy is to include educational materials in the Fairfax County Health Department's annual notice to switch septic drain fields.

Maintenance: No maintenance is necessary for this action.

Benefit: A well informed and educated community is more likely to engage in stewardship and volunteer opportunities within the watershed. They may also spread the environmental protection techniques they have learned to neighbors, co-workers, friends, and family members, strengthening a network of environmental stewards.

Cost: $8,000 annual cost.

Educational Material for Landscapers

Action B2.2: Develop and distribute educational materials that describe beneficial landscaping techniques to landscaping companies and suppliers.

Educational message on a fertilizer bag produced by Southern States

Strategy: These brochures will be distributed to landscaping companies and lawn and garden suppliers who are highly active within the watershed. Materials will be printed in multiple languages to facilitate understanding. They will stress the importance of water quality protection, and detail the dangers that result from the over-application of fertilizers and pesticides.

Maintenance: No maintenance is necessary for this action.

Benefit: This will help prevent excessive nutrients and harmful pesticides from running off into the streams, preventing eutrophication. Eutrophication occurs when algal blooms, stimulated by excessive nutrients, prevent sunlight from reaching other aquatic plants; the algal blooms eventually die and decompose, reducing the amount of dissolved oxygen available for aquatic life. This action will help contribute to the nutrient reduction goals of Virginia's Shenandoah and Potomac Basins Tributary Strategy.

Cost: $8,000 annual cost.

Educational Material about Horse Care

Action B2.3: Develop and distribute educational materials about appropriate horse care and grazing management in the RPA.

Improper animal waste management can pollute streams.

Strategy: The Northern Virginia Soil and Water Conservation District (NVSWCD) has an existing program for horse care and grazing practices. Distribute these educational materials to local veterinarians who care for horses or other large animals; they can then redistribute the materials to horse owners during annual examinations. Educational materials will also be distributed to suppliers of horse care products and supplies and local organizations, such as the Clifton Horse Society.

Maintenance: No maintenance is necessary for this action.

Benefit: A significant number of people within the watershed own horses. If horse owners are taught techniques for proper horse management within the RPA, erosion and sedimentation can be decreased. Fecal coliform levels will also decrease if animal waste is stored in an appropriate location, thus protecting water quality.

Cost: $4,800 annual cost.

Educational Material for Pond Owners

Action B2.4: Develop and distribute educational materials to private pond owners that describe proper maintenance.

Strategy: The Virginia Department of Game and Inland Fisheries produces a brochure that describes best management practices for private ponds. These brochures can be distributed to private pond owners and to local realtors who market properties that contain ponds.

Maintenance: No maintenance is necessary for this action.

Benefit: Proper pond maintenance can prevent the growth of harmful vegetation and the cultivation of mosquitoes. It can also prevent dam failure.

Cost: $4,800 annual cost.

Educational Material for ATV Users

Action B2.5: Develop and distribute educational materials for proper ATV usage in the watershed.

Strategy: Distribute educational materials to ATV dealers that describe the impacts of ATVs on the stream corridor, governing regulations, and proper ATV etiquette.

Maintenance: No maintenance is necessary for this action.

Benefit: The educational materials may deter ATV riders from damaging vegetation and causing erosion within the RPAs. They will also be informed of the potential penalties that result from illegal usage of ATVs on public or private property.

Cost: $4,800 annual cost

Educational Material on Wildlife

Action B2.6: Develop and distribute educational materials that describe the benefits of wildlife, such as beavers, in the watershed.

Beaver

Beaver Dam

Strategy: Coordinate with agencies, such as the Fairfax County Park Authority and the Virginia Department of Game and Inland Fisheries, to distribute educational materials to landowners in areas where wildlife is abundant.

Maintenance: No maintenance is necessary for this action.

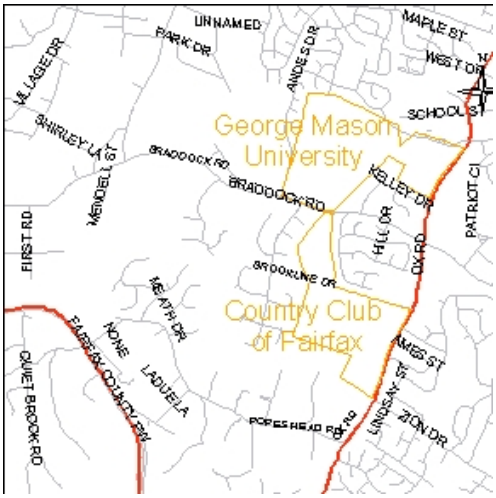
Benefit: Wildlife performs many important functions in ecosystems. Beavers can increase plant biodiversity by damming streams, which creates habitat diversity. Beaver dams decrease downstream flooding, and allow pollutants to infiltrate into the ground, therefore increasing water quality benefits.

Cost: $4,800 annual cost.

Coordinate to Manage Golf Courses and Athletic Fields

Action C1.2: Manage large existing areas of lawn at institutional and commercial properties to minimize nutrient loading in streams.

AMEC Project ID: PH9971, PH9980



Vicinity Map.

Overview.

Golf Course Photo.

Golf Course Photo.

Strategy: The County will coordinate with large landowners, including George Mason University and the Country Club of Fairfax, to reduce fertilizer and nutrient runoff from athletic fields and other large areas of managed turf. The County will provide education on nutrient management to grounds crews at these properties.

Maintenance: No maintenance is necessary for this action.

Benefit: Proper procedures for managing these areas will minimize nutrient and sediment loading in streams. This will help contribute to the nutrient reduction goals of Virginia's Shenandoah and Potomac Basins Tributary Strategy.

Cost: $8,000 annual cost.