

Section 4

Watershed Plan Nonstructural Actions

4.1 Introduction

This section identifies nonstructural actions that will help to achieve the watershed plan's vision and goals. The vision and goals described in Section 1.3 provide the overall framework for the watershed plan. They recognize that the plan must promote education, recreation, cooperation and collaboration both to heighten the awareness of the people who live and work in the watershed regarding their impact on it and to ensure that the streams and stream valleys continue to be a valuable resource for the community. The Fairfax County government can only protect and improve the watershed with the continued cooperation and assistance of the public; many activities other than installing additional ponds and other stormwater controls are essential to restore and maintain the watershed.

The nonstructural actions described in this section can be performed under current county policies and have a defined implementation schedule.

Nonstructural actions include community outreach and education as well as land management strategies to address the watershed impacts of existing and new development. In general, dirt will not be moved and major capital expenses are not required to implement these nonstructural actions.

Many of these actions must be implemented countywide. Recommended actions from the Cub Run and Bull Run Watershed Plan will be compared with similar recommendations in the Little Hunting Creek, Popes Head Creek, Cameron Run, Difficult Run and other watershed plans before they are implemented. Although the costs for some of these actions will not be born by Fairfax County, the watershed plan recommends that the county continue to allocate adequate funds to implement these nonstructural actions.

These actions were developed by the project Community Advisory Committee (CAC) and project team with input from the watershed community at four public workshops: Issues Scoping Forum (June 2004); Community Forum (March 2005); Draft Plan Review Forum (July 2005); and Final Plan Review Workshop (June 2006).

The nonstructural actions are grouped as follows:

- A - Public Outreach and Education
- B - Interjurisdictional Cooperation
- C - Recreation
- D - Existing Development

- E - New and Infill Development
- F - Open Space

The framework provides specific watershed actions to be implemented in the watershed plan and allows evaluation of the plan's success in meeting the watershed vision and goals.

The following sections identify and describe the objectives and actions within each nonstructural action group. The order in which the plan objectives and actions are presented does not represent their relative importance or the order in which they will be implemented.

This section focuses on nonstructural actions. Section 5 describes policy recommendations. Section 6 describes structural actions. Section 7 documents the implementation schedule for all watershed plan actions.

4.2 A - Public Outreach and Education

Many people who live and work in the watershed are not aware of watershed issues, the impacts of their actions on the environment or actions they can take to improve local stream conditions. The actions of homeowners and businesses can have significant positive and negative impacts on watershed health.

The following public outreach and education actions are designed to help develop a sense of pride in and ownership of the watershed and stream valleys, and to promote personal stewardship. It is hoped that education and outreach will not only help watershed residents avoid actions that have a negative impact on streams but also encourage them to protect and improve streams by modifying conditions on their property, volunteering for watershed improvement programs or taking other action in the watershed.

Objective A 1 - Promote community stewardship through education.

Action A 1.1: Create and staff a watershed and stormwater issues ombudsman position to provide a single contact on these issues for county residents. This position may cover several county watersheds. The telephone number and e-mail contact for the ombudsman should be included in education and outreach materials concerning stormwater management and related environmental matters. A primary responsibility of the ombudsman will be to resolve questions and problems encountered by watershed residents, much of which is likely to involve educating the public regarding stormwater issues. The ombudsman will provide information already developed and, when appropriate, put residents in touch with the person or department that can help resolve specific stormwater issues.

Action A 1.2: Promote the Virginia Department of Conservation and Recreation's Adopt-a-Stream program to encourage and actively recruit residents, businesses,

student groups and other organizations to adopt stream segments and, thereby, promote watershed stewardship both in the Cub Run and Bull Run watersheds and throughout the county. These volunteer groups will be stewards for the selected stream segment and will conduct periodic trash cleanups, observe stream conditions, report negative impacts to the county and raise awareness of the impacts that homeowner and business activities have on streams. These groups may also perform volunteer water quality and benthic sampling. Signs placed near the adopted streams will promote awareness of watershed issues among the larger public.

Action A 1.3: Educate homeowners, citizens and schoolchildren that, in the Cub Run and Bull Run watersheds, stormwater runoff eventually drains to one of Northern Virginia's primary drinking water sources, the Occoquan Reservoir. If not properly managed, trash and chemicals placed on the land will enter the drinking water supply. Actions to be taken include storm drain stenciling and signs that inform people they are in a water supply watershed. Other education opportunities include general public information programs, stewardship information in water bills and newspaper coverage of watershed issues. Education about the impacts of stormwater on water supply watersheds and related environmental matters implemented by the county should be included in public information programs.

Action A 1.4: Encourage maintenance and restoration of stream buffers throughout the watershed by educating the public and businesses on the importance of healthy stream buffers, and steps to maintain and restore stream buffers on their property and along local streams. A natural unimpaired stream buffer containing native trees, plants and shrubs provides valuable stream habitat protection and many other benefits. This action includes educating the public to 1) create "no mow" areas to allow stream buffers to recover naturally, 2) perform stream buffer restoration on their properties and through volunteer opportunities, and 3) remove exotic and non-native plants, and plant native species within critical stream buffer areas.

Action A 1.5: Create and provide community education programs that describe watershed issues in Fairfax County and the simple steps that residents, businesses and organizations can take to improve conditions in their backyard streams.

Action A 1.6: Develop educational and other public information materials in languages other than English to address the multicultural character of Fairfax County.

Action A 1.7: Install signs with stream and watershed names at major road crossings and watershed boundaries. This action would increase residents' awareness of the streams in the county as well as in the watershed in which they live. The signs within the Cub Run and Bull Run watersheds should also state that

these streams drain to the Occoquan Reservoir water supply in support of plan Action A 1.3.

Action A 1.8: Identify and provide to Fairfax County public schools educational programs and SOL-based curricula regarding watershed issues. Watershed education and stewardship should start at an early age. Also, children will take the lessons learned at school and apply them at home, encouraging their parents to learn more about watershed issues and to be more involved in protecting the watershed in which they live. This action can be combined with watershed plan structural action 6.4, which implements low-impact development (LID) projects at county facilities, including public schools, throughout the watershed.

Action A 1.9: Create watershed education areas within the Chantilly and Centreville Fairfax County public libraries and make watersheds part of the standard library educational programs. This action can be combined with watershed plan structural action 6.4, which provides LID bioretention retrofit facilities at these two county libraries.

Objective A 2 - Educate the public about environmental concerns that affect the watersheds.

The following educational actions address other environmental concerns related to watershed management.

Action A 2.1: Coordinate with the Fairfax County Health Department to promote control of mosquitoes on private property through elimination of standing water. Future education should also point out that healthy stream, lake and wetland ecosystems are not major sources of West Nile Virus-carrying mosquitoes (*Culis pipens*) and should explain the natural features that prevent excessive mosquito populations in healthy water bodies. Proper rain barrel maintenance techniques should be incorporated into the Fairfax County Health Department's "Fight the Bite" outreach campaign. This program should draw on information available through other county, local, state and federal agencies.

Action A 2.2: Coordinate with the Fairfax County Division of Solid Waste to promote existing information on environmental problems associated with trash and dumping. Partnering with private waste-hauling companies will further educate residents about bagging and disposing of trash properly, and placing it in approved garbage cans to prevent it spreading into the environment.

Action A 2.3: Coordinate with the Fairfax County Animal Shelter to educate the public about the impact pet wastes have on streams (coliform bacteria and nutrients) and the importance of properly disposing of these wastes.

Action A 2.4: Coordinate with the Fairfax County Division of Solid Waste to promote existing information on the proper disposal of hazardous household

materials, including fertilizer, chemicals, motor oil and paint. Information should include the locations where these materials can be disposed of safely.

Action A 2.5: Provide public information on correct application procedures and rates for fertilizers and pesticides. This effort should be coordinated with existing programs developed by the Virginia Department of Conservation and Recreation, Northern Virginia Soil and Water Conservation District, U.S. Environmental Protection Agency, other state and local agencies, and professional societies. Watershed-specific recommendations should be developed for the correct and environmentally sensitive procedures for lawn maintenance. This information should be distributed through homeowner associations and at local stores that sell fertilizers and pesticides. It should also be available on the county's watershed Web site and through other public information programs.

Objective A 3 - Improve the information and resources available through the county's watershed Web site to promote a better informed and educated public.

Action A 3.1: Provide readily accessible information about stormwater, water quality and watershed issues to the public on the county's watershed Web site, and what they can do to reduce nonpoint source pollution on their property and elsewhere in the watershed.

- a. Redesign and reorganize the county watershed Web site to make it easier for the homeowner to find the information they need regarding stormwater and watershed management. While the county Web site includes much of this information, it needs to be better coordinated, modified and expanded to make it more user friendly.
- b. Provide a frequently asked questions area on the county watershed Web site that includes clear answers, information on additional resources, links to other sources of information and contacts to help homeowners find information regarding stormwater issues.
- c. Provide contact information for the watershed ombudsman (Action A 1.1).
- d. Provide basic information on effective stormwater design, especially LID projects that property owners can implement themselves.
- e. Include descriptions and links to other programs available to assist homeowners.
- f. Provide information in languages other than English to reach out to non-English-speaking county residents.
- g. Promote the county watershed Web site in outreach and educational programs concerning stormwater management and related environmental matters.

Objective A 4 - Encourage and promote LID practices by developers and property owners through public education and outreach programs.

LID refers to a wide range of stormwater management and site development techniques that reduce the stormwater impact from development. Reducing impervious land surface, increasing travel time of stormwater and designing sites to take advantage of natural conditions can reduce the amount of runoff, peak flow rates and pollutant runoff from development. Facilities such as drainage swales and bioretention and biofiltration facilities (rain gardens) reduce runoff and filter pollutants. Properly maintained rain barrels and disconnection of rooftops and other impervious areas from the storm drainage system are also examples of effective LID techniques for existing and new development.

These outreach and education actions should be coordinated with other nonstructural actions promoting the implementation of LID at public facilities, for both new and existing construction. Section 5 identifies policy recommendations to promote LID.

Action A 4.1: Conduct outreach and education to builders and developers to communicate and promote the benefits of implementing LID in addition to or instead of standard stormwater controls. LID features should be promoted as positive amenities that property owners can find both aesthetically pleasing and functional. By implementing LID practices, it may be possible to meet Fairfax County stormwater requirements while reducing the number and/or size of “standard” stormwater controls (stormwater ponds). The overall result may reduce the cost for implementing stormwater management in new development.

Action A 4.2: Develop materials promoting LID retrofits on existing property and their effectiveness in addressing drainage issues and minimizing impacts from stormwater runoff. In addition to this promotional literature, design specifications, cost estimates and maintenance requirements for commonly used LID techniques should be developed and provided through the county Web site, as well as coordinated with other outreach and education programs. References and guidance should be provided to property owners regarding stormwater issues as well as assistance in developing effective and environmentally friendly solutions.

Objective A 5 - Increase community problem-solving capability through education.

Action A 5.1: Notify homeowner associations, civic associations and private property owners of the watershed planning effort and provide resources, including contacts and Web site addresses, that can provide additional information. Direct mailings can be used to distribute this information to the public, when appropriate. Development of a speakers bureau and articles for community newsletters would improve outreach through these organizations and associations.

Action A 5.2: Create and distribute a fact sheet of common stormwater problems and solutions, as well as available Fairfax County resources and contact information.

Objective A 6 – Educate owners and operators of commercial and industrial establishments where there is potential to contaminate the streams so that stormwater is properly managed and appropriate steps taken to prevent the release of contaminants.

Action A 6.1: Provide outreach and education to the property owners and managers of commercial and industrial facilities that handle hazardous materials, paints, chemicals and fertilizers regarding stormwater control requirements for their properties and their importance in protecting watershed streams and water supply. Coordination is needed with these owners to develop best management plans for the storage, use and disposal of these chemicals. This effort should be coordinated with Fairfax Water’s Source Water Protection and Planning programs.

4.3 B - Interjurisdictional Cooperation

The following actions should be implemented to improve interjurisdictional coordination between Fairfax County and other local, state and federal jurisdictions. Cub Run and Bull Run streams are affected by existing conditions and proposed changes in Loudoun County and at Dulles International Airport, just as water bodies downstream from Cub Run are affected by conditions in Fairfax County. County watershed programs should be coordinated with programs in other jurisdictions. While it is recognized that the various jurisdictions and agencies interact well on stormwater and watershed-issues as needed, regularly scheduled coordination is essential. Documenting this coordination and providing summary reports to the public will help to make residents aware of interjurisdictional coordination efforts regarding stormwater and watershed issues.

Objective B 1 - Improve cooperation between various organizations, localities and agencies, including Fairfax County, Loudoun County, Prince William County, Metropolitan Washington Airports Authority, Federal Aviation Authority, Fairfax Water, Upper Occoquan Sewage Authority, Virginia Department of Transportation, U.S. Army Corps of Engineers, Federal Emergency Management Agency, Virginia Department of Environmental Quality, Northern Virginia Soil and Water Conservation District, Northern Virginia Regional Commission, Virginia Department of Conservation and Recreation, Fairfax County Park Authority and Northern Virginia Regional Park Authority, regarding stormwater and watershed management issues.

Action B 1.1: Work with Loudoun County to establish joint watershed goals and evaluation criteria, including nonpoint source pollution controls and water quality monitoring guidance. Other successful interjurisdictional partnerships should be

identified and their lessons learned used to create a similar partnership between Fairfax and Loudoun counties regarding watershed issues.

Action B 1.2: Identify areas of mutual concern for Fairfax and Loudoun counties and facilitate sharing of information. An example would be to create a GIS field in the parcel layers maintained by these jurisdictions that identifies the watershed in which each parcel is located. This field could be used to identify development projects and share development plans that affect the neighboring jurisdiction.

Action B 1.3: Coordinate stormwater regulations, requirements and standards between Loudoun and Fairfax counties.

Action B 1.4: Convene an annual regional water summit, including representatives from agencies affected by or that affect stormwater conditions in Fairfax County watersheds. This summit could be coordinated and facilitated by the Northern Virginia Regional Commission. The primary focus of the annual summits will be to enable staff from the various agencies to interact directly. These meetings should have the following goals:

- Share information about stream conditions, ongoing programs, goals and issues
- Provide a forum to identify solutions that meet the needs and goals, and address the issues of both jurisdictions

Shortly after each meeting, a summary of the results will be distributed to elected officials, agencies affected and the public. The summary can be brief and simply document the discussions and general results.

4.4 C - Recreation

Promoting and creating appropriate recreational opportunities within the watershed and stream valleys will enhance public awareness and appreciation of healthy streams, stormwater management and other watershed issues. Watershed education should be integrated into recreation opportunities to make learning fun and to link watershed protection with restoration efforts and enjoyment of the outdoors. Appropriate recreational opportunities and facilities will get the public physically engaged and invested in the watershed, while increasing the personal commitment to watershed stewardship. In addition, these actions will make the stormwater management facilities more of an amenity to residents. Recreational uses must be appropriate for the community and support stream health.

Objective C1 - Provide appropriate and safe recreation opportunities while minimizing the impact of recreation on streams and stream valleys.

Action C 1.1: Maintain and develop a system of interconnected hiking and biking trails throughout the watershed. Fairfax County maintains an extensive trail system and manages a countywide trails plan. Future trail planning and

development should recognize that a trail system should be developed to link the Big Rocky Run Stream Valley Park trails to the Cub Run Stream Valley Park trails and integrate these trails with the Cub Run Recreation Center and the remaining Sully Woodlands parkland. The FCPA Sully Woodlands Regional Master Plan includes similar recommendations regarding multi-use and equestrian trails, and makes specific recommendations regarding new trail development. The feasibility of linking the Cub Run Stream Valley Park trails to existing trails in Bull Run Regional Park should be assessed. Additional trails are needed in the stream valleys north of Braddock Road. Construction of new trails to connect to this trail system should be included in association with new development and Virginia Department of Transportation road improvement projects. The impact of trails on the streams and stream valleys should be minimized.

Action C 1.2: Support state total maximum daily load (TMDL) limits and local programs to meet the state water quality standards for bacteria and allow safe primary contact recreation in all watershed streams.

Action C 1.3: Work with the Fairfax County Park Authority, Northern Virginia Regional Park Authority and National Park Service to incorporate watershed plan objectives into planning and development initiatives for Sully Woodlands Parkland, Bull Run Regional Park and Manassas National Battlefield Park, respectively.

Objective C 2 - Protect significant historic, cultural and ecological resources (e.g., rare and endangered species) within the stream valleys.

Action C 2.1: Perform a study to identify significant historic, cultural and ecological resources within the stream valleys and protect these resources where invasive species, active stream erosion, frequent flooding, sedimentation or other stormwater-related issues are threatening these resources. The Fairfax County Park Authority's Sully Woodlands Regional Master Plan includes an extensive survey and analysis of cultural resources in the watershed, and specific recommendations for protecting these resources. Cultural features most threatened include the Manassas Gap railroad abutments and structures associated with Lane Mill. Stream and buffer restoration projects in these areas should protect the integrity of these cultural features. This action should be coordinated with nonstructural Action F 1.2 to preserve critical features as open space.

Objective C 3 - Coordinate watershed education activities with environmental education activities provided by the various parks and nature centers within the watershed.

Action C 3.1: Work with the Fairfax County Park Authority to identify opportunities for watershed education activities and displays at the Ellanor C. Lawrence Park and new facilities identified in the Sully Woodlands Master Plan.

These activities and displays should be incorporated into the environmental education center and other facilities at the park.

Action C 3.2: Work with the Northern Virginia Regional Park Authority to implement watershed education activities and displays at the Bull Run Regional Park, and incorporate these programs into the park's existing environmental education programs.

4.5 D - Existing Development

The watershed plan includes the following objectives and actions to reduce the impact of existing development on streams in the Cub Run and Bull Run watersheds.

Objective D 1 - Address watershed issues related to pets and non-native species.

Action D 1.1: Place signs reminding pet owners to properly dispose of pet wastes and provide bags and trash receptacles in high-use areas.

Action D 1.2: Address non-native and invasive species when they affect the watershed, promote volunteer efforts or undertake other activities regarding invasive species and restore conditions using native species where appropriate.

Objective D 2 - Actively promote and encourage the use of LID retrofits on residential and non-residential property.

Action D 2.1: Prepare and provide design guidance and construction cost estimates for LID retrofit projects to encourage implementation by property owners and ensure that the projects are properly constructed and maintained. This action should include coordination and use of existing information from local, state and federal agencies, and is closely related to Action A 4.2, which educates the public on the benefits of LID on both existing and new development. This action should be directed towards both residential and non-residential properties. Watershed plan structural action 6.6 promotes LID practices within neighborhoods that do not have stormwater controls. The watershed plan also includes policy recommendations D 2.1, D 2.2, E 1.1, E 1.2, E 1.3 and E 1.4 to promote LID for existing and new development.

Objective D 3 - Reduce polluted runoff from fertilizer and pesticide use.

The following actions, combined with Actions A 2.4 and A 2.5, will reduce pesticide and fertilizer runoff to the streams in the Cub Run and Bull Run watersheds and downstream water bodies.

Action D 3.1: Partner with public and private golf courses to review and enhance, if necessary, their turf management programs and ensure the application of best management practices for the handling and use of fertilizers, pesticides and other chemicals.

Action D 3.2: Collaborate with golf courses, office parks, parks and similar facilities with large areas of turf to educate managers on environmentally friendly practices that will limit impacts on the watershed. Protection and restoration of stream buffers within these areas should also be encouraged.

Action D 3.3: Work with lawn maintenance companies to minimize runoff of nutrients and pesticides. The Virginia Department of Conservation and Recreation (DCR) maintains a list of lawn-care operators that have voluntarily entered into an agreement with the state to protect and improve Virginia's surface and ground waters. These firms have agreed to follow proper lawn maintenance practices and recommend homeowner practices following a nutrient management plan approved by DCR. Information about DCR's program should be included in Fairfax County's watershed educational materials. The county should work with DCR to refine its program requirements.

Objective D 4 - Reduce trash and dumping in the watershed.

The following procedures will help eliminate dump sites, reduce illegal dumping and minimize improper disposal of trash and garbage in the watershed.

Action D 4.1: Eliminate existing dump sites within the watershed. Table 4-1 and Figure 4-1 identify existing dump sites to be eliminated. Table 4-1 provides the project inventory identifier and impact score from the 2002 Stream Physical Assessment Study. The impact score rates the affect of each dump on the stream where it is located, with a value of 10 indicating high impact and zero indicating no impact. Dump sites potentially contain hazardous materials that could affect stream health and impact water quality in the Occoquan water supply reservoir. Cleaning up these sites improves the aesthetics in the stream valleys and eliminates the potential for hazardous materials to pollute the streams. Eliminating trash and dumps will improve the overall conditions in the watershed and reduce the likelihood that others will dump additional material at these locations. Finally, cleaning up dump sites will also improve the habitat in and around these locations.

Action D 4.2: Eliminate vehicle access to and place signs at active and historical dumping sites. The signs should state that dumping is illegal, describe the fines and other penalties for illegal dumping, and provide a hotline number that residents can call to report it.

Action D 4.3: Provide locations within or near the watershed where residents can dispose of large trash items at no charge or for a minimal fee, or, alternatively, schedule and promote neighborhood clean-up days where the county will collect large items. Deposits should be required for tires and other large items that often end up in illegal dumps.

Action D 4.4: Place trash receptacles at locations where trash is likely to be generated (e.g., bus stops).

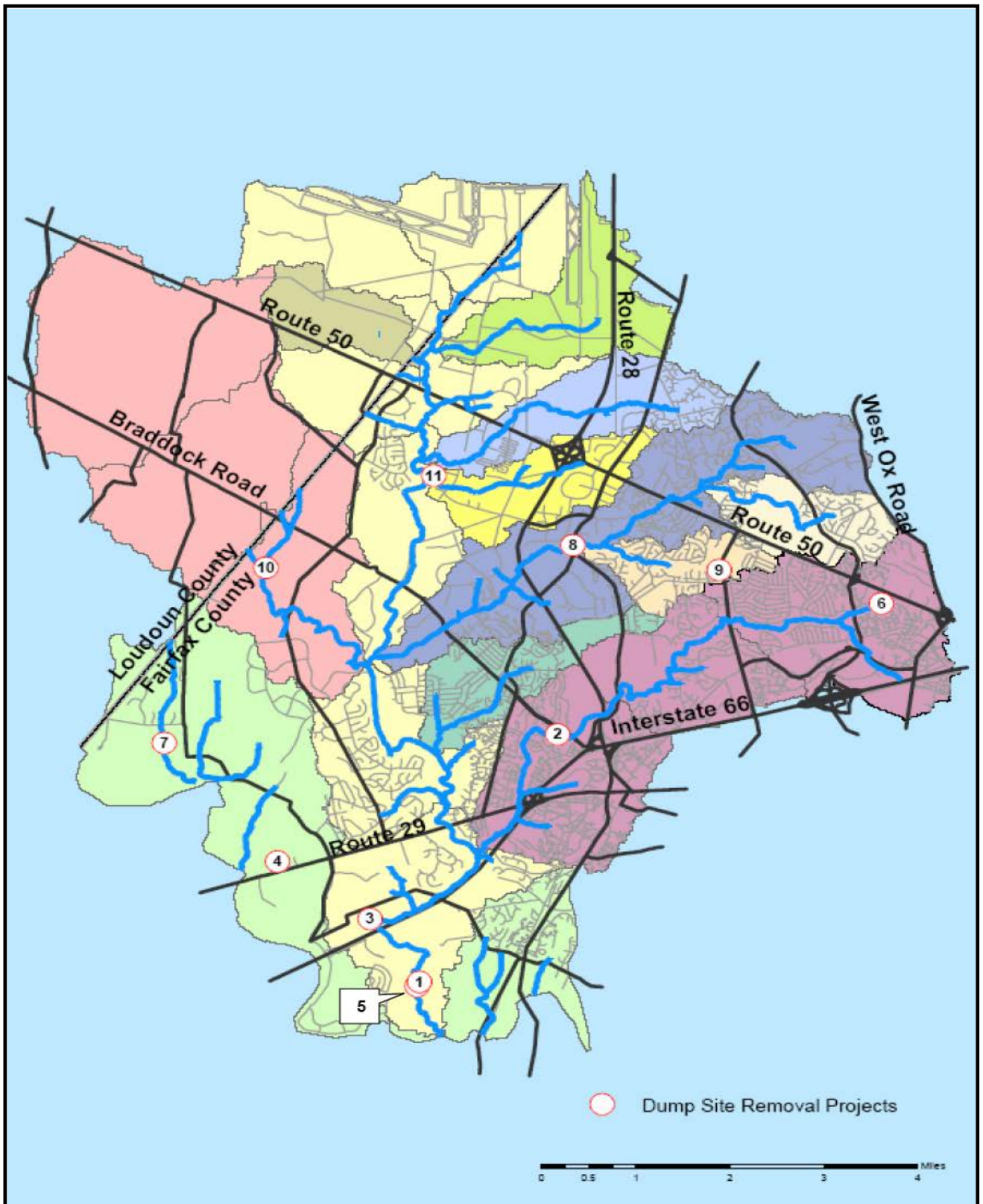


Figure 4-1
Location of Dump Site Removal Projects

Table 4-1
Summary of Dump Site Cleanup and Removal Projects

Project ID	Location	Description
BR9901	Both banks in stream Unnamed Bull Run Tributary	Dirt piles in the stream. Impact score of 7. (BLBU001.M001)
BR9902	Left bank flood plain Bull Run tributary	Rusted truck and metal waste. Impact score of 5. (BLBU005.M001)
CU9901	Left bank flood plain Lower Cub Run Bull Run Regional Park	55-gallon drums (empty), above ground tank. Impact score of 5. (CUCU004.M001)
CU9902	Left bank flood plain Lower Cub Run Bull Run Regional Park	Appliances, trash, tires and miscellaneous debris. Impact score of 10. (CUCU004.M002)
CU9903	Left bank in stream Tributary to Lower Cub Run. Private property	55-gallon drums (closed). Impact score of 8. (CUCU014.M001)
CU9904	Left bank flood plain Flatlick Branch Private property	Gas tanks and transformer. Impact score of 8. (CUBR028.M001)
CU9905	Left bank flood plain Big Rocky Run	Trash and car. Impact score of 5. (CUBR089.M001)
CU9906	Both banks flood plain Flatlick Branch at Walney Road	Construction debris. Impact score of 4. (CUFL102.M001)
CU9907	Both banks in stream Frog Branch near Stringfellow Road	Cast iron pipes in stream at utility crossing. Impact score of 4. (CUFR002.M002)
CU9908	Both banks in stream Elklick Run within FCPA Parkland	Appliances. Impact score of 3. (CUER009.M001)
CU9909	Left bank Cub Run and Schneider Branch	Clean up existing debris and eliminate future dumping at the Upper Cub Run Wastewater Treatment Plant

Objective D 5 – Implement actions to identify early and correct stormwater facility and water quality problems.

Action D 5.1: Increase the frequency of inspections of county-owned stormwater management facilities.

Action D 5.2: Improve coordination and reporting of water quality, benthic and other sampling in the streams by the county and volunteers, and develop a central database where these data can be stored, accessed and analyzed.

Action D 5.3: Prepare reports (every two to three years) that summarize the results of water quality, benthic and other sampling, and describe overall stream conditions in the county. These reports should be publicized and distributed to the public. Parameters tested, monitoring results, interpretation of these results and identification of trends should be documented so it is easily understood by the public and elected officials.

Action D 5.4: Regularly inspect privately owned and maintained stormwater facilities to verify they are properly constructed and maintained, and take appropriate actions where issues are identified.

Action D 5.5: Set up a hotline that residents can call to report a hazardous spill. This action should be coordinated with the direct number for the watershed ombudsman identified in Action A 1.1. Having a single contact will make it easier for residents to report spills, dumping and other environmental hazards in the watersheds.

Action D 5.6: Support the completion and implementation of Fairfax Water’s Source Water Protection Study.

Objective D 6 – Identify, evaluate and eliminate chemical and other pollution sources within the watershed.

Action D 6.1: Take inventory of commercial and industrial establishments that regularly work with or store hazardous materials, and therefore could contaminate the streams.

Action D 6.2: Perform regular inspections and water quality sampling at privately owned and maintained stormwater management facilities and/or stormwater outfalls serving facilities that regularly use hazardous materials to ensure they are functioning properly and are not discharging contaminants to the county streams.

Action D 6.3: Perform an inventory of and describe conditions related to commercial and industrial sites such as existing and former gas stations, automobile repair shops, dry cleaners, junk yards, equipment storage yards, quarries and other former commercial and industrial sites that may contain surface or underground contamination. Studies of these sites should describe

potential sources of stream contamination and corrective actions if contaminants are entering streams through surface water runoff or groundwater.

4.6 E - New and Infill Development

The following actions are intended to reduce the impact of new development within the Cub Run and Bull Run watersheds to meet the watershed plan's vision and goals, preserve and protect the streams, and reduce polluted runoff.

Objective E 1 - Promote LID stormwater management techniques at all development and redevelopment projects.

Action E 1.1: Expedite the updating of the county Public Facilities Manual to include specific LID strategies. Developers will be better able to implement LID and other innovative controls when these controls are included in the Public Facilities Manual.

Action E 1.2: Develop and distribute reference sources for building and retrofitting sites using LID techniques, including information on maintaining LID facilities. Reference sources previously developed by local, county, state and federal agencies should be used.

Action E 1.3: Develop and implement criteria to quantify tradeoffs between LID stormwater management techniques and conventional stormwater controls. These criteria will allow developers to meet Fairfax County stormwater control requirements using LID techniques.

Objective E 2 - Minimize impacts on Fairfax County streams of new development in other jurisdictions.

Action E 2.1: Track stormwater controls used in development projects and stormwater management requirements in upstream jurisdictions, monitor water quality and streambank conditions of Fairfax County streams downstream from these jurisdictions, and establish back-up plans to address stormwater impacts on Fairfax County streams if the stormwater controls in these upstream areas do not provide adequate protection. Alternatives include preserving sites for additional stormwater controls such as regional ponds and identifying wetland creation and mitigation sites at or near the locations where flows from these areas enter the county.

Action E 2.2: Continue to work with the Metropolitan Washington Airports Authority (MWAA) to ensure that the Dulles Airport expansion meets minimum Fairfax County and Loudoun County stormwater requirements for new development. Implementation of additional controls should be encouraged to further protect the Cub Run streams and prevent flooding. Continued use of the National Environmental Policy Act (NEPA) process and coordination with MWAA and its consultants will advance these goals, and address and resolve

issues related to airport development. The environmental impact assessment process for these improvements has been completed. However, county staff is pursuing continued coordination with MWAA on stormwater and environmental issues regarding airport improvements.

Objective E 3 - Incorporate watershed objectives into all stormwater management plans for major transportation projects, including the Dulles Airport expansion, Tri-county Parkway, Battlefield Bypass and Route 28 improvements.

Action E 3.1: Active involvement of the Fairfax County Stormwater Planning Division in the planning, evaluation and design of major transportation projects will help ensure that these projects are performed so they are sensitive to the county's watersheds.

Objective E 4 - Promote and develop incentives for mitigating stream and wetland impacts within the same local watershed where the impacts occur.

Under current state requirements, development, highway and other projects that affect a certain amount of stream or non-tidal wetlands must perform projects to mitigate these affects by improving stream conditions, creating wetlands or improving existing wetland areas. Under present guidelines, these mitigation projects can be implemented outside the watershed affected. For example, mitigation for impacts in urban areas in Fairfax County may occur as projects in rural areas of another county. To best protect Fairfax County streams, the mitigation for Fairfax County projects should be performed, wherever possible, within the same watershed and as close as possible to the streams or wetlands affected.

Action E 4.1: The Cub Run and Bull Run watershed plan and other watershed plans identify potential stream restoration, wetland restoration, buffer restoration and riparian restoration projects. Developing formalized procedures will enable these projects to serve as a bank for mitigation of impacts within the county. This would provide a funding source for the watershed improvement projects while encouraging mitigation within the watershed and/or county.

Action E 4.2: Educate developers on the habitat and water quality benefits of mitigation closer to the site of impacts.

4.7 F - Open Space

The preservation and protection of open space provides excellent protection of the county watersheds. Approximately 23 percent of the Cub Run and Bull Run watersheds are protected in parkland and other open space; additional areas are protected within stream valley resource protection areas (RPAs) and open common areas associated with apartments, condominiums and townhouses. As a result, much of the critical habitat area and floodplain has been protected from development. Fairfax County should actively promote the protection and preservation of existing

open space, and identify additional areas in the Cub Run and Bull Run watersheds currently not developed.

Objective F 1 – Identify options to work with private property owners to preserve undeveloped open space.

Action F 1.1: Work with the Northern Virginia Conservation Trust, other area land trusts, the Northern Virginia Park Authority, Fairfax County Park Authority, state agencies and community organizations to identify opportunities and funding sources for preserving open space, and associated natural and cultural resources.

Action F 1.2: Create an open space plan to guide the county’s efforts to preserve open space, and natural and cultural resources.