4.0 Summary of Watershed Restoration Strategies

Watershed impact indicators, source indicators and field reconnaissance were used to determine areas of impairment or degraded conditions in the Lower Occoquan watershed. Maps were created of these areas using the subwatershed ranking procedure. These maps were then used to create restoration strategies to address and mitigate areas of impairment or degraded conditions. Within Lower Occoquan, all 10 of the watershed management areas (WMAs) experienced some level of impairment, ranging from severe stream bank erosion to minor raised nutrient loading. Restoration strategies considered for Lower Occoquan varied in range from stream restoration and habitat quality improvement to addressing flooding issues and improving water quality.

The process for candidate site selection was based on the broad restoration strategies. Color-coded watershed maps and spreadsheets were created using the scoring thresholds developed for the watershed metrics. This gave a visual representation of potential problem trends or issues throughout the overall watershed. The scoring worksheets from the Subwatershed Ranking Spreadsheets were reviewed, and some basic statistical calculations were performed to identify some of the more prevalent issues affecting each watershed as a whole. After identifying some basic trends, individual WMAs were selected for analysis.

The individual metrics comprising the watershed's composite score were reviewed for each subwatershed and any potential project areas were identified. Each subwatershed has a composite score for its source indicators and impact indicators. Subwatersheds with both severe source and impact indicators were deemed most critical for restoration. The final step involved looking at GIS, aerials, field site visit forms, site photos, community input, and other pertinent information. Projects and sites were selected that helped the overall condition of the watershed and which best aligned with County goals and objectives. During site selection and prioritization, stormwater system improvement, system repair, prevention and site-specific conditions were all considered. Multiple remedy options were available. For areas of extreme degradation or severe conditions, improvements were proposed. For areas with moderate conditions, only repairs were proposed. Lastly, for areas in good condition, but facing potential future degradation, prevention projects were selected, most of which were targeted to open areas on public land.

See **Map 4.1**, which includes BOS magisterial districts, for locations of all proposed projects in the Lower Occoquan Creek watershed. See Table 4-1 for a list of all projects. More information on the individual projects can be found in Section 5. A detailed description of the project selection methodology can be found in Appendix B.

Each proposed project was labeled using a standard 6-digit convention, XX9YZZL, where:

XX 2-digit watershed code

Y Project Type Code as follows:

- 0 – Regional pond projects/alternatives
- 1 – New SWM pond/SWM pond retrofit
- 2 – Stream restoration projects
- 3 – Area-wide drainage improvement
- 4 – Culvert retrofit
- 5 – New BMP/LID and BMP/LID retrofit
- 6 – Flood protection/mitigation
- 7 – Outfall improvement
- 8 & 9 – All other project types

ZZ Remaining digits in ascending order throughout the watershed starting with 00 at the lowest point in the watershed

L A, B, C, etc. (if needed), used if a given project consists of several large components.

4.1 Restoration Strategies

4.1.1 Structural Projects

The structural projects will be part of the County's capital improvement plans and were prioritized as being in either the 0-10 year plan or the 11-25 year plan. The structural projects are funded separately from the non-structural projects. Cost estimates for the structural projects were created per the County's guidance. The structural project types proposed were approved by the County and discussed in the WAG.

Structural Project Types include:

- Stormwater pond retrofits / New Stormwater Ponds
- Stream restorations
- BMP/LID Projects
- Dumpsite and obstruction removals

These projects, when possible, were proposed on County owned land to allow for easy implementation. These projects will help improve the County's existing stormwater infrastructure and help ensure full utilization of the County's existing resources.

4.1.2 Types of Structural Projects

<u>Stormwater Pond Retrofits/New Stormwater Ponds</u>

A new stormwater pond project involves the creation of an extended detention dry pond that will improve water quality and quantity treatment for the surrounding area. Wet pond retrofits will modify the existing pond to increase pollutant removal and to provide adequate channel protection above the permanent pool. The retrofit will create a better-functioning environment for gravitational settling, biological uptake, and microbial activity with a permanent pool of standing water, providing for high and reliable pollutant removal performance. The pool prevents re-suspension of sediments and other pollutants and allows for numerous pollutant removal mechanisms to operate. Dry pond retrofits will modify the existing pond to provide adequate downstream channel protection and allow for better function of temporary ponding using a control structure, which enables particulate pollutants to settle out, providing fair to good removal for particulate pollutants.

Figure 4-1: Dry stormwater pond

Figure 4-2: Wet stormwater pond with forebay

Best Management Practice (BMP)/Low Impact Development (LID) Projects

A BMP/Low Impact Development (LID) project is designed to minimize the impact of changes in land use on surface and groundwater systems, with the primary goal of mimicking predevelopment site hydrology. BMP/LID projects can be either structural or non-structural in form. Structural BMP/LID projects include: bioswales, pervious pavement, and bioretention filters. Bioswales will capture sheet flow from impervious areas and reduce runoff volume and increase groundwater recharge. Pervious pavement will treat and/or reduce parking lot runoff using a (semi-)porous material that allows runoff to infiltrate and then trap pollutants in the soil. The pavement will also allow for surface storage, reducing runoff volumes. Bioretention will capture sheet flow from impervious areas and create an ideal environment for filtration, biological uptake and microbial activity, providing moderate to high pollutant removal. It will also reduce the outflow to the storm sewer system.

Figure 4-3: Parking lot pervious pavement

Figure 4-4: Parking lot bioretention filter

Figure 4-5: Bioretention section

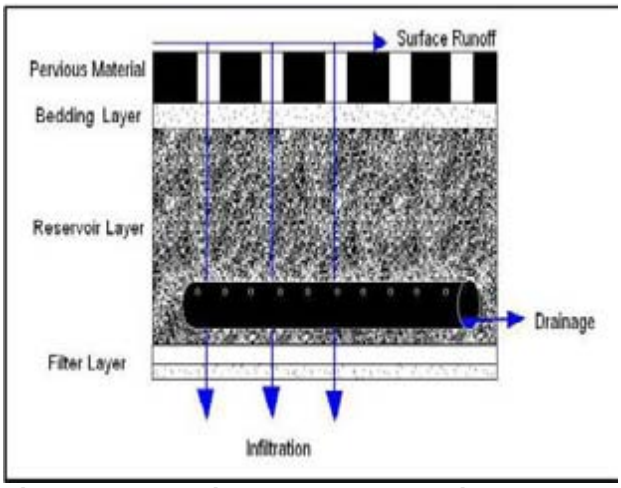

Figure 4-6: Pervious pavement section

Stream Restoration

Stream restoration is the re-establishment of the general structure, function and self-sustaining behavior of a stream. Restoration can include numerous methods such as installation of structures and planting of vegetation to stabilize and protect stream banks, reshaping or re-aligning stream banks, and repairing stream bed erosion in order to restore the natural morphology of the stream. A stream restoration project can consist of reopening to daylight, sections of a stream that had previously been piped. This is also known as daylighting. Other stream restorations include improving conditions around a stream's inflow pipes by providing outfall protection with energy dissipation devices. This will also help to minimize erosion.

Figure 4-7: Cross vane added to stream

Figure 4-8: Stabilized stream banks

Outfall Improvements

Outfall improvement projects consist of several different measures designed to reduce erosive velocities and sediment loads at the stormwater outfalls. Outfall improvement projects can include reconstruction of the outfall to provide an energy dissipation device and erosion protection, reconstruction of roadside swales or concrete channels with vegetated plantings, and construction of a new storage and treatment area below an outfall.

Figure 4-9: An eroded outfall

Figure 4-10: An improved outfall

4.1.3 Non-Structural Projects

Non-structural projects are a group of projects that do not require traditional construction measures to be implemented and may be programmatic in nature. These projects may include:

- Buffer restorations
- Dumpsite and obstruction removals
- Street-sweeping programs
- Rain-barrel/Cisterns programs (BMP/LID projects)
- Community outreach and public education
- Land conservation coordination projects
- Inspection and enforcement projects

Figure 4-11: Community members restoring and replanting stream buffer area

These projects, in concert with the structural projects, represent a holistic approach to watershed management. Since much of the land area in Fairfax County is privately owned, there is a strong need to work with local communities to promote environmental awareness and recommend projects that can be implemented by residents and other groups.

The fundamental difference between structural and non-structural projects is the ability to predict the result of the project implementation through models. For example, the nitrogen removal of a wet pond may be calculated; however, there is no way to predict the reduction in nitrogen from an outreach campaign on proper fertilizer use. Additionally, these projects and programs should not be confined to any single watershed but could be implemented throughout the County as opportunities occur. Because of these differences, non-structural projects were evaluated and will be implemented using a different process than the structural projects.

There are many advantages of non-structural projects. Some of the key advantages to these projects type are:

- Less cost
- Less disruption
- More public and community awareness

In general, non-structural projects represent opportunities to proactively pursue stormwater issues that more traditional structural practices cannot address. The use of non-structural practices fulfills Fairfax County's MS4 permit requirements and environmental initiatives. The full potential of these projects will be realized through partnerships with County agencies, residents and other interested parties.

4.1.4 Types of Non-Structural Projects

Buffer Restorations / Reforestations

Buffer restoration projects consist of practices such as the re-planting of upland buffer areas and providing riparian reforestation (re-establishing additional streamside buffers), which helps filter pollutants while reducing runoff by intercepting the water and increasing surface storage and infiltration.

Figure 4-11: Tires and debris removed near or from stream

Dumpsite/Obstruction Removals

Dumpsite/obstruction removals are the removal of obstructions in or near stream channels, which help restore stream channels to their natural conditions and improve the function of the streams. Examples of proposed projects include: the cleanup of trash in or near the stream channel to help reduce the amount of pollutants from entering adjacent streams and storm systems; or the removal of a blockage within the stream channel, relieving flooding and/or erosion.

Street-Sweeping Programs

Street sweeping helps reduce the amount of potential pollutants entering nearby streams and storm systems. In addition, these programs add the aesthetic benefits of having clean streets and the safety benefits of removing debris that can block storm systems and stormwater facilities. Areas where these projects were proposed are primarily comprised of dense residential development, many of which have streets that are piped directly into the nearby streams with little to no stormwater controls.

Figure 4-12: Street-sweeping truck

Rain-barrel/Cisterns programs

Rain-barrel/Cisterns programs are mainly proposed at school sites. These projects are considered BMP/LID projects because of the low impact they would have on the existing conditions. For these projects, rain-barrels would be placed at schools that have roofs with external downspouts, and cisterns would be designed for schools without external downspouts.

4.2 Project Prioritization Process

The structural project prioritization was completed using a spreadsheet based on the prioritization scheme that is summarized in Appendix B. The spreadsheet uses five factors to provide a basis to compare each project's ability to improve the watershed and rank the most beneficial projects. The five factors were weighted as follows: impact indicators (30 percent), source indicators (30 percent), priority subwatersheds (10 percent), sequencing (20 percent) and implementability (10 percent).

The final composite scores for projects were based on the five factors and their corresponding weights. This score was used to obtain an initial ranking. The higher the overall composite scores the lower the preliminary rank (higher priority). Once the initial rankings were completed using the prioritization scheme's quantitative method, the projects were qualitatively reviewed. This review involved going through every project starting at the highest ranked projects and reviewing the project descriptions, GIS information, field observations, WAG comments, and the ability for a project to achieve the County's objectives. From this review, best professional judgment (BPJ) was used to adjust the scores to verify the projects were ranked correctly. At this time, the number of structural projects to be implemented was reduced, due to Lower Occoquan Watershed's preserved state and the limited number of viable projects. Additionally, candidate projects that cost less than $80,000 and could not be grouped with another project were eliminated from the WMP.

Once the initial priority ranking determined the highest priority projects that would be implemented in the 10-year plan, a simplified cost-benefit analysis (CBA) was completed. The cost-benefit analysis divided a project's composite score (i.e., benefit) by its cost, to allow a cross comparison of 10-year plan projects. This cost analysis created a project ranking that was different from the initial ranking. Projects with CBA rankings substantially different from the initial ranking had their rankings adjusted. Projects with lower costs than other projects with similar benefit had their scores improved so that they would be implemented first.

Non-structural projects were ranked using either a quantitative analysis or a qualitative analysis, depending on the project type. Rain barrels and buffer restorations were scored per the method described above. Project ranks for street sweeping and reforestation projects were determined by comparing the existing conditions suspended solids, phosphorus, and nitrogen ranking indicator scores and were assigned a score of 1 through 5 based on their potential for improvement. The average of these scores was used to obtain an initial ranking. Finally, a BPJ score modification was used to account for any project-specific issues. Due to the high implementability and immediate results of the non-structural projects, these projects were evaluated separately from the 0 – 25-year plan. Additional information on the project prioritization process can be found in Technical Memo 3.4/3.5 in Appendix B.

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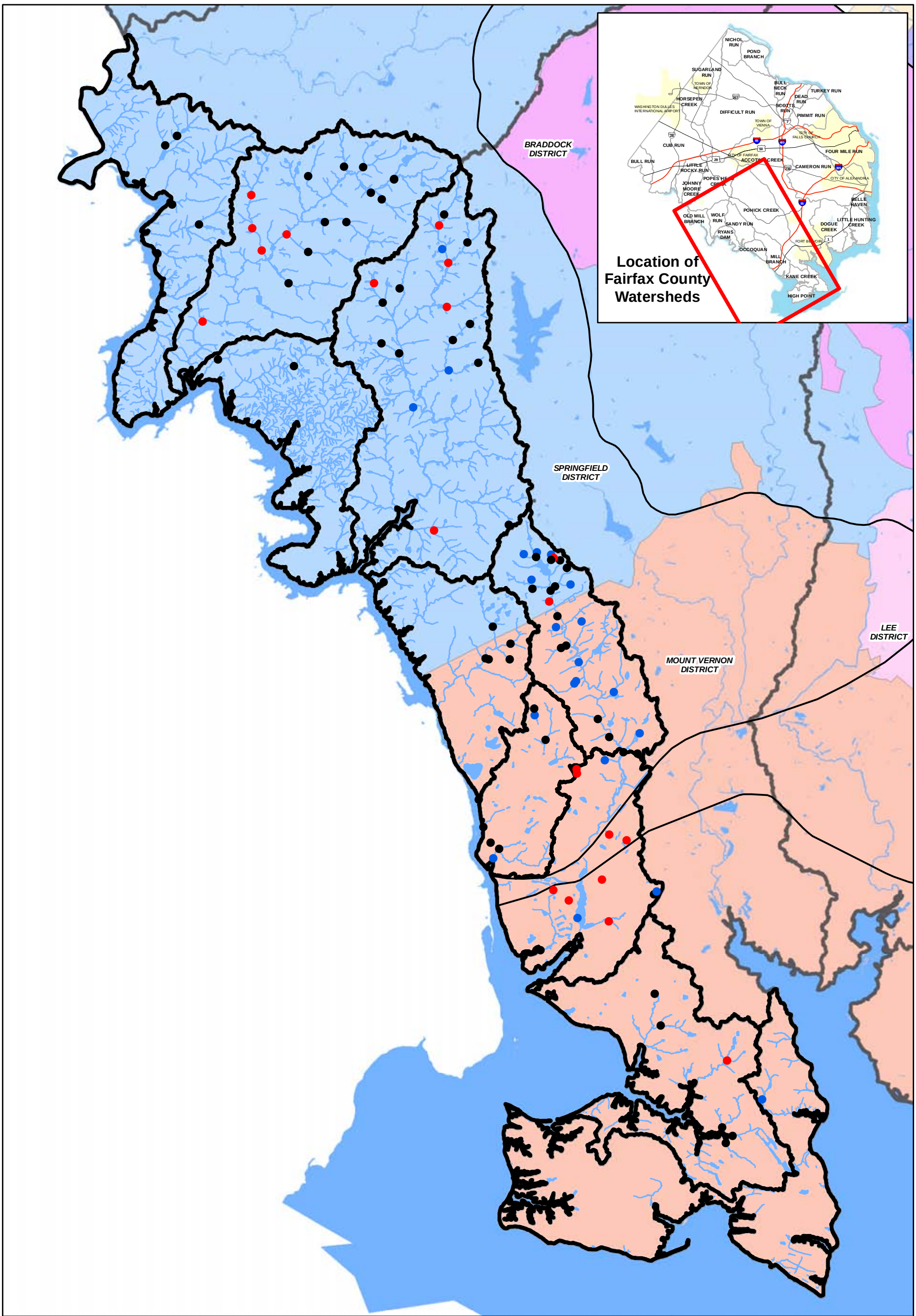

Map 4.1

Proposed Projects and Board of Supervisors Magisterial Districts

Table 4-1: Project List - Master

Priority Structural Projects (Ten Year Implementation Plan)[1]						
Project #	**Project Type**	**WMA**	**Location**	**Watershed Benefit**	**Land Owner**	**Cost**
KC9209	Stream Restoration	Kane Creek	Behind 10809 Harley Rd.	Water quality control	Public/State/ Private - Department of Conservation and Economic Department, Residential	$ 840,000
MB9104	Stormwater Pond Retrofit	Mill Branch-Giles Run South	10418 Old Colchester Rd. (Mason Neck West Park)	Water quality and quantity control	Public/ Local - FCPA	$ 240,000
MB9105	Stormwater Pond Retrofit	Mill Branch-Giles Run South	Across from 10555 Furnace Rd.	Water quality and quantity control	Public/State - VDOT	$ 280,000
MB9107	Stormwater Pond Retrofit	Mill Branch-Giles Run South	10119 Giles Run Rd.	Water quality and quantity control	Private - Residential	$ 130,000
MB9109	Stormwater Pond Retrofit	Mill Branch-Giles Run South	8115 Mims St.	Water quality and quantity control	Private - Industrial	$ 290,000
MB9111	Stormwater Pond Retrofit	Mill Branch-Giles Run South	9816 Richmond Hwy.	Water quality and quantity control	Private - Commercial	$ 180,000
MB9114	Stormwater Pond Retrofit	Mill Branch-Giles Run South	9850 Furnace Rd. (I-95 Landfill)	Water quality and quantity control	Public/ Local - FCPS	$ 160,000
MB9122	Stormwater Pond Retrofit	Mill Branch-Giles Run North	Behind 8605 Cross Chase Court	Water quality and quantity control	Private - Commercial	$ 190,000
MB9202	Stream Restoration	Mill Branch-Giles Run South	10207 Old Colchester Rd.	Water quality control	Public/ Federal - USA	$ 720,000
MB9506	BMP/LID	Mill Branch-Giles Run South	9850 Furnace Rd, Lorton (I-95 Landfill)	Water quality and quantity control	Public/ Local - FCPS	$ 110,000
MB9510	BMP/LID	Mill Branch-Giles Run North	9350 Crosspointe Dr. (Silverbrook Elementary School)	Water quality and quantity control	Public/Local - FCPS	$ 220,000

[1] **Only 10-yr structural projects will have associated project fact sheets at the end of section 5.**

Priority Structural Projects (Ten Year Implementation Plan)[1]						
Project #	**Project Type**	**WMA**	**Location**	**Watershed Benefit**	**Land Owner**	**Cost**
SA9201	Stream Restoration	Sandy Run	Next to 8721 Birch Cliff Dr.	Water quality control	Private - Residential	$ 780,000
SA9209	Stream Restoration	Sandy Run	Near 10746 Beechnut Ct.	Water quality control	Private - Residential, HOA	$ 600,000
SA9211	Stream Restoration	Sandy Run	Behind 6901 Streamwood Pl.	Water quality control	Public/Local - FCPA	$ 360,000
SA9213	Stream Restoration	Sandy Run	6650 Rutledge Dr.	Water quality control	Private - Residential	$ 560,000
SA9701	Outfall Improvement	Sandy Run	Near 11223 Silverleaf Dr.	Water quality and quantity control	Private - Residential	$ 150,000
WR9201	Stream Restoration	Wolf Run	Behind 12101 Henderson Rd.	Water quality control	Private - Residential	$ 1,120,000
WR9208	Stream Restoration	Wolf Run	Near 12025 Seven Hills La.	Water quality control	Private - Residential	$ 1,050,000
WR9209	Stream Restoration	Wolf Run	12060 Rose Hall Dr.	Water quality control	Private - Residential	$ 1,420,000
WR9211	Stream Restoration	Wolf Run	Behind 11724 Amkin Dr.	Water quality control	Private - Residential	$ 1,160,000
WR9212	Stream Restoration	Wolf Run	7610 Maple Branch Rd.	Water quality control	Private - Residential	$ 1,420,000
					Total Cost	**$11,980,000**

[1] **Only 10-yr structural projects will have associated project fact sheets at the end of section 5.**

Long-Term Structural Projects (25 Year Implementation Plan)[1]					
Project #	**Project Type**	**WMA**	**Location**	**Watershed Benefit**	**Land Owner**
KC9203	Stream Restoration	Kane Creek	6407 High Point Rd. (Mason Neck State Park)	Water quality control	Public/Federal - USA
KC9204	Stream Restoration	Kane Creek	6408 High Point Rd. (Mason Neck State Park)	Water quality control	Public/State/Federal - Commonwealth of VA, USA
KC9205	Stream Restoration	Kane Creek	6409 High Point Rd. (Mason Neck State Park)	Water quality control	Public/State/Federal - Commonwealth of VA, Department of Conservation and Economic Development, USA
KC9208	Stream Restoration	Kane Creek	Behind 10800 Harley Rd.	Water quality control	Public/Federal/Private - USA, Residential
KC9210	Stream Restoration	Kane Creek	Across from 10417 Gunston Rd.	Water quality control	Public/State/Federal/Private - VDOT, USA, Residential
MB9106	Stormwater Pond Retrofit	Mill Branch-Giles Run South	10301 Richmond Hwy	Water quality and quantity control	Public/Local/Private - FCPA, Industrial
MB9108	Stormwater Pond Retrofit	Mill Branch-Giles Run South	10109 Giles Run Rd.	Water quality and quantity control	Private - Industrial
MB9117	Stormwater Pond Retrofit	Mill Branch-Mill Branch	Behind 8940 Highgrove Ct.	Water quality and quantity control	Private - Residential, HOA
MB9119	Stormwater Pond Retrofit	Mill Branch-Giles Run North	Near 9300 Cardinal Forest La.	Water quality and quantity control	Private - Commercial
MB9120	Stormwater Pond Retrofit	Mill Branch-Giles Run North	9001 Southpointe La. (Behind Cul-de-sac)	Water quality and quantity control	Private - Commercial
MB9121	Stormwater Pond Retrofit	Mill Branch-Giles Run North	8850 Cross Chase Circle (William Halley Elementary School)	Water quality and quantity control	Public/Local - FCPS
MB9123	Stormwater Pond Retrofit	Mill Branch-Giles Run North	Behind 8628 Meadow Edge Terr.	Water quality and quantity control	Private - Commercial
MB9124	Stormwater Pond Retrofit	Mill Branch-Giles Run North	Behind 9210 Cross Oaks Ct.	Water quality and quantity control	Private - Commercial
MB9125	Stormwater Pond Retrofit	Mill Branch-Giles Run North	9350 Crosspointe Dr. (Silverbrook Elementary School)	Water quality and quantity control	Public/Local-FCPS

[1] **Only 10-yr structural projects will have associated project fact sheets at the end of section 5.**

Long-Term Structural Projects (25 Year Implementation Plan)[1]					
Project #	**Project Type**	**WMA**	**Location**	**Watershed Benefit**	**Land Owner**
MB9205	Stream Restoration	Mill Branch-Mill Branch	9751 Ox Rd (Occoquan Regional Park, Site 1)	Water quality control	Public/Local - FCPS
MB9206	Stream Restoration	Mill Branch-Mill Branch	9751 Ox Rd. (Occoquan Regional Park, Site 3)	Water quality control	Public/Local - FCPS
MB9207	Stream Restoration	Mill Branch-Mill Branch	Across street from 8932 Lorton Rd.	Water quality control	Public/Local - FCPA
MB9208	Stream Restoration	Mill Branch-Giles Run North	8301 Lorton Rd.	Water quality control	Public/Local/State/Private - FCPA, VDOT, Residential
MB9209	Stream Restoration	Mill Branch-Giles Run North	8300 Newby Bridge Dr.	Water quality control	Public/Local - FCPA
MB9210	Stream Restoration	Mill Branch-Giles Run North	8700 Laurel Crest Dr. (Laurel Hill Golf Club, Site 1)	Water quality control	Public/Local - FCPA
MB9212	Stream Restoration	Mill Branch-Giles Run North	8921 Cross Chase Cir.	Water quality control	Private - Commercial
MB9213	Stream Restoration	Mill Branch-Giles Run North	8601 Cross View	Water quality and quantity control	Private - Commercial
MB9502	BMP/LID	Mill Branch-Mill Branch	9751 Ox Rd. (Occoquan Regional Park, Site 5)	Water quality and quantity control	Public/Local - FCPS
MB9504	BMP/LID	Mill Branch-Giles Run South	10100 Gunston Rd. (Gunston Elementary School)	Water quality and quantity control	Public/Local - FCPS
MB9509	BMP/LID	Mill Branch-Giles Run North	8285 Glen Eagles La. (Christ Church United Methodist Inc.)	Water quality and quantity control	Private - Church
MB9511	BMP/LID	Mill Branch-Giles Run North	8275 Glen Eagles La. (Crosspointe Swim and Racquet Club)	Water quality and quantity control	Private - Residential
OC9101	Stormwater Pond Retrofit	Occoquan	Behind 9340 Davis Dr.	Water quality and quantity control	Private - HOA
OC9102	Stormwater Pond Retrofit	Occoquan	Behind 9270 Davis Dr.	Water quality and quantity control	Private - Residential

[1] **Only 10-yr structural projects will have associated project fact sheets at the end of section 5.**

Long-Term Structural Projects (25 Year Implementation Plan)[1]					
Project #	**Project Type**	**WMA**	**Location**	**Watershed Benefit**	**Land Owner**
OC9203	Stream Restoration Suite	Occoquan	Behind 9307 Denali Way	Water quality control	Private - Residential, HOA
OC9204	Stream Restoration	Occoquan	10450 Van Thompson Rd.	Water quality control	Public/Local/Private - FCPA, Residential
OC9207	Stream Restoration Suite	Occoquan	Behind 9035 Palmer Dr.	Water quality control	Private - Residential
OC9208	Stream Restoration	Occoquan	Behind 9520 Elk Horn Rd.	Water quality control	Private - Residential
OM9201	Stream Restoration	Old Mill Branch	Near 12505 Old Yates Ford Rd. (Fountainhead Regional Park)	Water quality control	Public/Local/Private - FCPA, Residential
OM9202	Stream Restoration	Old Mill Branch	Behind 8100 Flossie La.	Water quality control	Private - Residential
OM9203	Stream Restoration	Old Mill Branch	Behind 12606 Clifton Hunt La.	Water quality control	Private - Residential
OM9205	Stream Restoration	Old Mill Branch	Behind 12990 Wyckland Dr.	Water quality control	Private - Residential
OM9206	Stream Restoration	Old Mill Branch	Behind 12995 Wyckland Dr.	Water quality control	Private - Residential
OM9207	Stream Restoration	Old Mill Branch	Behind 7859 My Way Dr.	Water quality control	Private - Residential
RD9201	Stream Restoration	Ryans Dam	Near 8517 Wolf Run Shoals Rd.	Water quality control	Pubic/Local/Private - NVRPA, Residential
RD9202	Stream Restoration	Ryans Dam	Behind 11470 Robert Stephens Dr.	Water quality control	Private - Residential, HOA
SA9101	Stormwater Pond Retrofit	Sandy Run	Next to 9699 Thorn Bush Dr.	Water quality and quantity control	Public/State - VDOT
SA9102	Stormwater Pond Retrofit	Sandy Run	8120 Ox Rd.	Water quality and quantity control	Public/State - Commonwealth of VA
SA9103	Stormwater Pond Retrofit	Sandy Run	Behind 7401 Wayfarer Rd.	Water quality and quantity control	Private - HOA
SA9105	Stormwater Pond Retrofit	Sandy Run	Behind 7200 Ox Rd.	Water quality and quantity control	Private - Church
SA9205	Stream Restoration Suite	Sandy Run	Behind 10901 Henderson Rd.	Water quality control	Private - Residential
SA9206	Stream Restoration	Sandy Run	Across street from 11100 Devereux Station La.	Water quality control	Private - Residential

[1] **Only 10-yr structural projects will have associated project fact sheets at the end of section 5.**

Long-Term Structural Projects (25 Year Implementation Plan)[1]					
Project #	**Project Type**	**WMA**	**Location**	**Watershed Benefit**	**Land Owner**
SA9207	Stream Restoration Suite	Sandy Run	Near 11212 Hunting Horse Dr.	Water quality control	Private - Residential
SA9208	Stream Restoration	Sandy Run	10608 Daysailer Dr.	Water quality control	Private - Residential, HOA
SA9212	Stream Restoration	Sandy Run	6572 Ox Rd.	Water quality control	Private - Residential
SA9214	Stream Restoration	Sandy Run	6635 Rutledge Dr.	Water quality control	Private - Residential
SA9702	Outfall Improvement	Sandy Run	Behind 11204 Silver Leaf Dr.	Water quality and quantity control	Private - Residential
WR9206	Stream Restoration	Wolf Run	Near 7900 Wolf Run Hills	Water quality control	Private - Residential
WR9210	Stream Restoration	Wolf Run	7501 Amkin Ct.	Water quality control	Private - Residential
WR9213	Stream Restoration	Wolf Run	Behind 7433 Clifton Rd.	Water quality control	Private - Residential
WR9214	Stream Restoration	Wolf Run	7121 Swift Run Trails Dr.	Water quality control	Private - Residential
WR9217	Stream Restoration	Wolf Run	12013 Corral Dr.	Water quality control	Private - Residential
WR9218	Stream Restoration	Wolf Run	11047 Lilting La.	Water quality control	Private - Residential
WR9219	Stream Restoration	Wolf Run	11418 Lilting La.	Water quality control	Private - Residential
WR9220	Stream Restoration	Wolf Run	11806 Yates Ford Rd.	Water quality control	Private - Residential
WR9221	Stream Restoration	Wolf Run	11721 Yates Ford Rd.	Water quality control	Public/State/Private - VDOT, Residential
WR9222	Stream Restoration	Wolf Run	11543 Lilting La.	Water quality control	Private - Residential
WR9223	Stream Restoration	Wolf Run	11543 Lilting La.	Water quality control	Private - Residential

[1] **Only 10-yr structural projects will have associated project fact sheets at the end of section 5.**

Non-Structural Projects[1]					
Project #	**Project Type**	**WMA**	**Location**	**Watershed Benefit**	**Land Owner**
HP9801	Buffer Restoration	High Point	Near 10709 Gunston Rd. (Gunston Hall Plantation)	Water quality control	Public/State - Commonwealth of VA
MB9505	BMP/LID	Mill Branch-Giles Run South	10100 Gunston Rd. (Gunston Elementary School)	Water quality and quantity control	Public/Local - FCPS
MB9507	BMP/LID	Mill Branch-Giles Run North	8850 Cross Chase Circle (William Halley Elementary School)	Water quality and quantity control	Public/Local - FCPS
MB9512	BMP/LID	Mill Branch-Giles Run North	9350 Crosspointe Dr. (Silverbrook Elementary School)	Water quality and quantity control	Public/Local - FCPS
MB9801	Buffer Restoration	Mill Branch-Giles Run South	Behind 10463 Greene Dr.	Water quality control	Public/Local/Federal - FCPA, USA
MB9802	Buffer Restoration	Mill Branch-Mill Branch	9751 Ox Rd. (Occoquan Regional Park, Site 2)	Water quality control	Public/Local/Private - FCPS, Industrial
MB9803	Street Sweeping Program	Mill Branch-Giles Run South	8386 Old Vicarage St.	Water quality control	Public/State - VDOT
MB9804	Buffer Restoration	Mill Branch-Mill Branch	Next to 8936 Lorton Rd.	Water quality control	Private - Residential
MB9805	Street Sweeping Program	Mill Branch-Giles Run North	Near 8327 Bluebird Way	Water quality control	Public/State - VDOT
MB9806	Buffer Restoration Suite	Mill Branch-Giles Run North	8700 Laurel Crest Dr. (Laurel Hill Golf Club, Site 1)	Water quality control	Public/Local - FCPA
MB9807	Buffer Restoration Suite	Mill Branch-Giles Run North	8700 Laurel Crest Dr. (Laurel Hill Golf Club, Site 2)	Water quality control	Public/Local - FCPA
MB9808	Street Sweeping Program	Mill Branch-Giles Run North	Near 8709 Lorfax Dr.	Water quality control	Public/State - VDOT
MB9809	Street Sweeping Program	Mill Branch-Giles Run North	Near 9413 Eagle Glen Ter.	Water quality control	Public/State - VDOT
MB9810	Street Sweeping Program	Mill Branch-Giles Run North	Behind 9105 Oak Chase Ct.	Water quality control	Public/State - VDOT
MB9811	Buffer Restoration	Mill Branch-Giles Run North	Next to 9527 Crosspointe Dr.	Water quality control	Private - Residential
MB9812	Street Sweeping Program	Mill Branch-Giles Run North	Near 8409 Crosslake Dr.	Water quality control	Public/State - VDOT

[1] **Only 10-yr structural projects will have associated project fact sheets at the end of section 5.**

Non-Structural Projects[1]					
Project #	**Project Type**	**WMA**	**Location**	**Watershed Benefit**	**Land Owner**
SA9801	Buffer Restoration	Sandy Run	Next to 10711 Sandy Run Trail	Water quality control	Private - Residential
SA9802	Buffer Restoration	Sandy Run	10600 Hunting Shire La.	Water quality control	Private - Residential
SA9803	Other	Sandy Run	Behind 6909 Heathstone Ct.	Water quality and quantity control	Public/Local - FCPA

[1] **Only 10-yr structural projects will have associated project fact sheets at the end of section 5.**