The ResWAG continues to meet on a monthly basis to discuss ways to education and engage the Reston community in watershed improvements efforts.

At the end of 2003, RA staff and volunteers began discussing long-term solutions to dredge material disposal. The group brainstormed on developing another partnership with Fairfax County to establish regional dredge material disposal areas within the County that could be used by entities like Fairfax County DPWES, FCPA, and private associations like RA that conduct dredging activities. This effort would reduce the amount of time and costly expenses associated with finding disposal locations in close proximity to dredge sites. Feasibility studies could be developed to identify potential locations in the County. The regional sites could be used for temporary storage. Material, once dried, could be sifted and recycled for other uses.

In 2003, RA continued its volunteer stream monitoring program in conjunction with the Northern Virginia Soil and Water Conservation District, VA Save Our Streams program. The District provided valuable assistance through in-kind support this past year.

Figure 38. Indoor Benthic Macroinvertebrate Identification Class sponsored by RA & NVSWCD.

RA completed the annual water quality monitoring for Reston's four lakes (Anne, Newport, Thoreau, and Audubon) and two ponds (Bright and Butler) from April through September.

Several shoreline and stream bank stabilization projects using biologs, erosion cloth, and native plantings were conducted in 2003. RA staff worked with several clusters and individual homeowners on shoreline stabilization projects. RA continued to promote natural shoreline stabilization and encouraged the use of more environmentally sensitive materials for bulkheads and docks as opposed to conventional pressure-treated timber, which is commonly used.

In April 2003, RA staff and volunteers participated in the 15th Annual Potomac Watershed Cleanup by hosting numerous cleanup sites along Snakeden Branch, The Glade, and Colvin Run tributaries in Reston. RA staff members and 128 volunteers removed 242 bags of trash, weighing in at approximately 5,566 pounds, from the streams as well as other items including shopping carts, chairs, mattresses, bikes, a computer monitor, and various car parts. Over 2 miles of stream were cleaned up in three hours.

ResWAG and RA staff developed a Rain Barrel brochure and new guidelines were incorporated into RA's covenants documents. RA continued work on educating the public about the need and importance of on-site stormwater control / LID. RA received grant funding to develop an LID manual for homeowners.

DPWES

In support of the 1999 interim policy regarding tree preservation and planting in and around stormwater management ponds, DPWES continued with the revised pond-mowing program first implemented during the summer of 2000. These non-mowed areas are quickly returning to a natural state, improving functionality through enhanced sediment removal and nutrient uptake and improving biologic diversity with the emergence of wet meadow and wetland habitats.

b.) Proposed Changes to the Stormwater Management Program

The County has completed field studies of all the stream valleys, providing an assessment of management needs and a prioritization of solutions within each watershed. These are being used to help develop Watershed Management Plans in each of the County's 30 watersheds. The County has also completed the field identification of all perennial streams thus ensuring that these streams received designation as Resource Protection Areas (RPA) under the Chesapeake Bay Preservation Ordinance. In addition, the County is conducting long-term Biological Monitoring and Watershed Water Quality Monitoring to establish trends, to verify the effectiveness and adequacy of stormwater management controls, and to identify areas of water quality improvement or degradation. The overall goal is the development of a Countywide Watershed Protection and Restoration Strategy which provides a consistent basis for the evaluation and implementation of solutions for protecting and restoring the receiving water, the ecological systems and other natural resources of the County.

Regional Pond Study: In 2002, county staff formed a multi-agency committee to develop a unified position on the use of regional ponds, as well as alternative types of stormwater controls, as watershed management tools. During 2003, the Regional Pond Subcommittee provided recommendations regarding the use of regional ponds as well as other innovative and non-structural techniques as part of watershed management. The focus of the effort was to determine in a deliberate and comprehensive way whether modifications to current practices, policies and regulations would be beneficial. After much deliberation, research, and consultation with the public and stakeholders, the Subcommittee identified 61 recommendations to improve Fairfax County's stormwater management program and to clarify the role of regional ponds in that program. The general consensus is that regional ponds do play a role in the County's stormwater management program but their design needs to address several ecological, economical and social concerns while working in concert with better site designs and low impact development practices. The Subcommittee is currently coordinating the development of an implementation plan for all recommendations, including a time line and assignments. Several of the recommendations address the need to make modifications to the County's Public Facilities Manual (PFM), stormwater policies, codes and ordinances.

The results of all these efforts may lead to significant changes to the Stormwater Management Program.

c.) Revisions, if Necessary, to the Assessments of Controls and the Fiscal Analysis of the Effectiveness of New Controls Established by the Stormwater Management Program

Results of the monitoring efforts and field screening activities indicate that the stormwater controls in Fairfax County generally maintains water quality and discharges in compliance with the MS4 permit requirements. As the County approaches built-out conditions, it will become increasingly challenging to mitigate the impacts of impervious area and non-point source pollution on streams. Several efforts through the existing stormwater management program is helping to reduce or minimize water quality impacts such as: the mandate of controls (BMPs) by the Chesapeake Bay Preservation Ordinance; development and implementation of Comprehensive Watershed Management Plans; development of an extensive retrofitting program for existing developed areas; and changes to current stormwater management codes, policies, ordinance and guidelines.

Overall, the stormwater control program has been effective in achieving compliance with the permit to date. . However, it is anticipated that the increased nutrients (phosphorus and nitrogen) and sediment reductions as part of the proposed revised Potomac Basin Tributary Strategy will place increased demands and requirements on the County's MS4 to achieve the necessary allocations and pollutant levels in the effort to restore the Chesapeake Bay. Any attempt to quantify the potential pollutant load reductions resulting from the stormwater control program remains speculative due to limited data collected thus far, the uncertainty of obtaining capital construction funding, the pace of new development activity, and various other factors. The ongoing County programs are funded through June 30. The costs associated with the stormwater control program are segmented into four categories, i.e., currently funded programs, costs associated with the wet weather monitoring and field screening programs, costs associated with implementation of capital improvement projects, and costs of private organization programs.

Currently funded programs

It is anticipated that the ongoing programs within the various County agencies (DPWES, FRD, FCPS, etc.) will continue to receive funding through current sources. Funding for maintenance of public facilities, inspections of private facilities, and DPWES staff support is currently appropriated through the County General Fund. Other programs are funded by a combination of state and County funds such as the Department of Health and NVSWCD programs.

The ongoing County programs are funded through June 30, 2004, the end of the County's Fiscal Year 2004. The continuation of the General-funded portion of these ongoing programs requires subsequent annual appropriations from the County General Fund. The remaining programs will likewise require a continuation of their funding sources. Overall, it is anticipated that the currently funded water quality programs will continue to be funded through the life of the permit.

The costs for VPDES monitoring, inspection and testing as well as maintenance and preventive measures are included as part of the annual operations budget for each landfill facility and are not a separate item. Funding for VPDES-related activities at the landfills will continue to be funded in this manner. This is partially due to the fact that many of the activities required under the individual VPDES permits for inspection, monitoring, and remediation at the landfill facilities are also required by the various operating permits granted by the VA DEQ.

Costs associated with the implementation of capital improvement projects

It is generally recognized that additional funding sources are needed to implement capital improvement projects for water quality due to the limited availability of funds for stormwater control in recent years.

It is estimated that more than $40,000,000 per year would be required to aggressively implement stream restoration and stabilization projects, regional stormwater management facilities, flood control improvements, an enhanced stormwater maintenance program, and retrofit BMPs throughout the County. However, this estimate is subject to refinement after detailed needs can be assessed with the completion of watershed management plans for all County watersheds. Watershed Management Plans will identify improvements and their costs which will help support the need for a dedicated funding source such as a Stormwater Utility.

In the interim, three methods to fund capital construction of water quality control improvements are used. They include storm drainage pro rata share funds, proffer agreements by developers, and General Fund appropriations. During Fiscal Year 2004, approximately $3.7 million of new pro rata share revenues were appropriated to capital projects and $1.4 million were available to support watershed planning from the

General Fund. Additional funds are anticipated for fiscal year 2005 that would continue the support for comprehensive Watershed Management Plans.

d.) Annual Expenditures for the Reporting Period

Funding for the County's stormwater control program is primarily through General Fund appropriations, with some pro rata share revenue for capital improvement projects. Ongoing programs within the various County agencies continue through current sources. Several County and non-governmental organizations provide support of various monitoring programs, water quality improvements, and public awareness programs. Funding for maintenance and inspections of both public and private facilities and DPWES staff support continues primarily through the County General Fund and some service charge revenues. Other programs are funded by a combination of state, County, and grant funds. The non-government organizations which conduct water quality programs are for the most part privately and/or grant funded.

The Stormwater Planning Division, DPWES cost center operating budget is currently set at $1,450,000 for FY 04 and is estimated to be $2,420,00 for FY 05. Major activities relating to the implementation and execution of stormwater control policies include: developing the Watershed Management Plans, the Countywide Watershed Protection and Restoration Strategy, a long term watershed water quality monitoring program, and a long term biological monitoring program; retrofitting developed areas with water quality control facilities; designing facilities for urban flood control and stormwater management; implementing the Regional Stormwater Management Plan; conducting public outreach and education; providing support for the dam safety program; conducting dry and wet weather field screening; conducting industrial high risk and floatables monitoring; and preparing the annual report.

The Division of Environmental Health expended approximately $43,000 in conducting the sampling of 84 stream sites for the Annual Stream Water Quality Report, for writing/publishing the Annual Stream Water Quality Report and for the investigation of the 7 stream complaints conducted in 2002. The *Annual Stream Water Quality Reports for 1997 to 2002 are available from the* Health Department's web page; the 2003 report will be available by June 2004, and will contain data up to July 2003 when the program was transferred to DPWES.

http://www.fairfaxcounty.gov/service/hd/strannualrpt.htm

The Maintenance and Stormwater Management Division, DPWES, expended $950,418 in 2003 for maintenance and inspection of the stormwater management systems. The following is an itemized expenditure of the stormwater management program: Maintenance of the stormwater management facilities $742,727; Inspection of the privately maintained stormwater management facilities $93,498; and Engineering support and program management $114,193. In 2003 MSMD inspected all the publicly maintained stormwater management ponds, the PL-566 dams, and approximately 25% of the privately maintained stormwater management facilities. Mowing of the dam embankments was completed on all the publicly maintained regional SWM facilities and approximately 60% of the publicly maintained onsite SWM facilities. The remaining 40% of the publicly maintained facilities are mowed by property owners. Engineering inspection of the public ponds resulted in 203 maintenance work orders to perform repairs. Work required on privately maintained facilities was performed by the property owners.

There are three full-time professional positions in the Environment and Development Review Branch, Department of Planning and Zoning (DPZ), devoted to environmental planning, and additional staff resources from other DPZ branches or divisions will occasionally address water quality issues. The environmental planning function in DPZ was funded at approximately $195,000 in FY 2003 and

$200,000 in FY 2004.

The Division of Solid Waste Disposal and Resource Recovery, DPWES is responsible for the operation of the I-95 Landfill located at 9850 Furnace Road, Lorton, Virginia 22079 and the I-66 Transfer Station Landfill (closed), located at 4618 West Ox Road, Fairfax, Virginia 22030. Annual VPDES expenditures are estimated to be $26,000 for the I-95 facility and $17,000 for the I-66 facility (closed). Total cost of operation of Household Hazardous Waste program is approximately $450,000 annually.

All technical and educational programs of the NVSWCD are considered to benefit water quality in Fairfax County. The personnel and operations budget for calendar year 2003 was approximately $423,887 with Fairfax County contributing $296,779 and the state contributing $81,156. Several grants were received, including $1,200 for the stream monitoring program, and $2,900 to develop educational panels for a display, and $5,000 to provide technical assistance on stream projects. In addition, the value of volunteer services provided to Fairfax County is approximately $194,000 of which $74,419 is contributed by stream monitors.

The estimated Northern Virginia Regional Commission budget expenditures related to stormwater management in Fairfax County include: Four Mile Run Program (Fairfax County share) $12,021 for FY 2003 and $12,697 for FY 2004; a DEQ grant for a Four Mile Run Bacteria TMDL Implementation Plan for $31,110 (11/02-4/04); Occoquan Nonpoint Pollution Management Program (Fairfax County share) $52,046 for FY 2003 and $42,351 for FY 2004; a DEQ grant of $60,000 for TMDL studies in the Occoquan watershed (11/02-4/04). A $1,250 grant from DCR paid for storm drain stenciling in the Occoquan watershed during FY 2003; an additional DCR grant of $16,530 has supported adaptation of "Tributary Strategies Scenario Builder" software from Maryland for use in the Occoquan watershed as a tool to guide BMP implementation choices (1/03 – 4/04). Just over $25,000 from public and private sources, including $15,000 from DCR and $5,000 from Fairfax County Water Authority, has supported adult and student watershed education projects including development and release of a film and curricula on the history of, and the importance of preserving, the Occoquan as a source of drinking water (FY 2003 and FY 2004).

In 2003, RA spent over $350,000 on watershed and stormwater management initiatives including: implementation of the Reston Watershed Management Plan, lake, dam and stream maintenance, shoreline and stream bank stabilization, erosion and nutrient control project design and implementation, lake and stream water quality monitoring, invasive exotic weed control, technical/professional consultation, educational programs and workshops, development and distribution of watershed improvement educational literature. In 2004, it is estimated that RA will spend over $300,000 on watershed and stormwater management initiatives involving implementation of the watershed plan.

SUMMARY

Through the collaborative efforts of numerous County agencies, non-government organizations, and volunteer groups Fairfax County has been able to maintain an effective Stormwater Management Program that has satisfied the requirements of the NPDES Phase I permit for the last seven years. Participation by non-government agencies in stormwater management play a significant role in achieving this. During 2003, the Stormwater Management Program has focused on the Perennial Stream Survey and Mapping, the development of Watershed Management Plans, long term watershed monitoring program, long term biological monitoring, infrastructure mapping, inspections and maintenance, retrofitting developed areas with water quality control facilities, and more rigorous public involvement, outreach and education.

The most significant achievement was the extensive perennial stream survey and mapping which resulted in an increase of 330 miles of perennial streams, a 52% increase, 638 miles to 968 miles. This increase in stream miles established 17.06 square miles (or 10,921.57 acres) of new RPA in the county, an increase of 31% from 55.3 square miles to 72.3 square miles.

The development of Watershed Management Plans for all 30 watersheds, including, sub-watersheds, and/or groupings of watersheds is in the process and will continue over the next 6 years. The overall goal is to provide a consistent basis for the evaluation and implementation of solutions for protecting and restoring the receiving water, the ecological systems, and other natural resources of the County. Major milestones in the development of the County's watershed management plans in 2003 include: Draft of Little Hunting Creek Watershed Plan was prepared; Popes Head Creek Watershed citizen advisory group was formed; and Cameron Run Watershed citizen advisory group was started.

The development of watershed management plans for the County combined with an active community and dedicated county staff will be a cornerstone in "***Protecting our land and our water***", the slogan of the Stormwater Management Program. The overall goal is the improvement of the state of our watershed and environmental quality, the protection of public health, and where necessary, restoration of the integrity of natural resources.

The stormwater monitoring program has been expanded in the new permit to include a paired watershed monitoring component to evaluate the effectiveness of stormwater controls and BMPs. In addition, a wet weather screening and floatables monitoring component as well as a High Risk and Industrial monitoring component have been added.

A total of 17 TMDLs are currently on the 2002 impaired waters listing (DEQ's 303(d) list) with others to be added by an imminent 2004 listing. These TMDLs will require development between 2006 and 2014 and implementation of mitigating plans following their approval. In addition, the threat of a Chesapeake Bay and Potomac River Basin wide TMDLs looms if mitigating efforts do not reverse the existing water quality impairment to the Bay by 2010. In light of this, several regulatory actions could be imposed on localities, including Fairfax County, to implement additional corrective measures and curtail development until the impairment to the Bay is alleviated.

The County's stormwater business area's core leadership team which was formed in 2001 to help define long-term strategic planning and thinking for stormwater management in the County completed the development of an environmental scan and strategic plan in 2003. This core leadership team will continue to pursue the implementation of action steps from the strategic plan for the stormwater business area. It is generally recognized that the future stormwater management program will be increasingly challenged to achieve full compliance with changing permit requirements and increasing state and federal mandates as a result of Chesapeake Bay commitments and TMDLs. Strategic efforts will have to focus on how to maximize existing resources and obtain new resources to keep pace of this increasing demand to improve ecological health of our watersheds and preserve the quality of life for the community.

ACRONYM LIST

ANS: Audubon Naturalist Society.
BMP: Best Management Practice.
BST: Bacteria Source Tracking.
CAP: Corrective Action Plan.
CASH: Citizens Alliance to Save Huntley.
CBLAB: Chesapeake Bay Local Assistance Board.
CBLAD: Chesapeake Bay Local Assistance Department.
CBPO: Chesapeake Bay Preservation Ordinance.
CCTV: Closed Circuit Television.
COG: Council of Governments.
DCR: Department of Conservation and Recreation.
DEQ: Department of Environmental Quality.
DPWES: Department of Public Works and Environmental Services.
DPZ: Department of Planning and Zoning.
E&I: Extension & Improvement.
E&S: Erosion and Sediment.
EFID: Environmental and Facilities Inspection Division.
EHD: Environmental Horticulture Division.
EMC: Event Mean Concentration.
EPA: Environmental Protection Agency.
EPCRA: Emergency Planning and Community Right-To-Know Act.
EQC: Environmental Quality Corridor.
FCPA: Fairfax County Park Authority.
FCPS: Fairfax County Public Schools.
FRD: Fire and Rescue Department.
FMD: Facilities Management Division.
FY: Fiscal Year.
GIS: Geographic Information System.
GMU: George Mason University.
HHW: Household Hazardous Waste.
HMIS: Hazardous Materials and Investigative Services Section.
ICPRB: Interstate Commission on the Potomac River Basin.
LBWID: Lake Barcroft Watershed Improvement District.
LID: Low Impact Development.
MOU: Memorandum of Understanding.
MRF: Materials Recovery Facility.
MS4: Municipal Separate Storm Sewer System.
MSMD: Maintenance and Stormwater Management Division.
MSW: Municipal Solid Waste.
MWCOG: Metropolitan Washington Council of Governments.
NPDES: National Pollutant Discharge Elimination System.
NPS: Nonpoint Source.
NRCS: Natural Resources Conservation Service

NVCT: Northern Virginia Conservation Trust.
NVRC: Northern Virginia Regional Commission.
NVRPA: Northern Virginia Regional Park Authority.
NVSWCD: Northern Virginia Soil and Water Conservation District.
NWI: National Wetland Inventory.
OCF: Office of Capital Facilities.
OSDS: Office of Site Development Services.
PDD: Planning and Design Division.
PH&F: Pesticide, Herbicide & Fertilizer.
RA: Reston Association.
ResWAG: Reston Watershed Action Group.
RMA: Resource Management Areas.
RPA: Resource Protection Area.
SCRAP: Schools County Recycling Action Plan.
SPS: Stream Protection Strategy.
SWM: Stormwater Management.
SWMP: Sold Waste Management Program.
SWPD: Stormwater Planning Division.
TMDL: Total Maximum Daily Load.
USDA: United States Department of Agriculture.
USGS: United States Geological Survey.
VDACS: Virginia Department of Agriculture Consumer Services.
VDOF: Virginia Department of Forestry.
VDOT: Virginia Department of Transportation.
VPDES: Virginia Pollutant Discharge Elimination System.
WID: Watershed Improvement District.
WQIF: Water Quality Improvement Fund.

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