Appendix C – Recommendations from Existing Studies

This appendix contains the full-text recommendations from the January 2003 New Millennium Occoquan Watershed Task Force report entitled *Fulfilling the Promise: The Occoquan Watershed in the New Millennium*, the July 2000 Fairfax County *Infill and Residential Development Study, Draft Staff Recommendations Report*, and the January 2004 Fairfax County Park Authority *Natural Resource Management Plan,* as referenced in Chapters 2.5.5, 2.5.6, and 2.5.7 of this report. The Popes Head Creek Watershed Management Plan will address all of the following recommendations:

C.1 Fulfilling the Promise: The Occoquan Watershed in the New Millennium

Reservoir Recommendations:

1. The Task Force strongly endorses existing programs and policies aimed at maintaining acceptable levels of water quality in the Reservoir. The County should oppose any effort to weaken regional policies, particularly the State's Occoquan Policy governing wastewater treatment.
2. The County should strive to reduce nutrient and sediment contributions to the Reservoir above and beyond those being achieved through existing policies and ordinances.
3. The County should continue to be an active participant in State and federal regulatory and/or policy initiatives that might result in requirements for additional nutrient and sediment reductions in order to ensure that reduction strategies are based on sound policy and science.

Streams and Ecosystems Recommendations:

1. Rigorously maintain the integrity of the Occoquan downzoning. As demonstrated by the County's 2001 *Stream Protection Strategy Baseline Study*, the downzoning has been an effective measure for the protection of stream ecosystems.
2. Continue regular long-term stream assessments by the Stream Protection Strategy staff. Such assessments are critical to measuring the County's progress in protecting and restoring stream ecosystems. These assessments should include continued partnership with volunteer stream monitoring efforts. The County should ensure that the Stream Protection Strategy staff is adequately funded and staffed to handle its growing responsibilities.
3. Fully develop and implement the Stormwater Planning Division's watershed management planning process in the Occoquan Watershed, as well as all other County watersheds. This process represents the County's most focused and comprehensive approach to protecting and restoring stream ecosystems.
4. Study and adopt new stormwater management designs that have been demonstrated to protect or improve the health of stream ecosystems.
5. Encourage the use of those LID techniques that have been proven effective under local conditions, both where new development is planned and, to the extent feasible, for retrofitting of existing development. The County should further investigate the effectiveness and applicability of LID techniques.

Land Use and Open Space Recommendations

1. At a minimum, continue the County's commitment to the successful strategy for water quality protection of the Occoquan Reservoir that was established through the comprehensive zoning actions that were taken in 1982.
2. Establish a broad-based advisory committee, to include stakeholders, County staff, and one or more members of the County's Planning Commission, to review standards and guidelines associated with Special Permit, Special Exception, and public uses that may be approved in the R-C District in the Occoquan Watershed and to report its findings and recommendations to the Board of Supervisors. The advisory committee should:
    a. Review the maximum allowable floor area ratios currently allowed in the R-C District in light of overall impervious surface implications, public use/facility needs, institutional use needs, recreational needs, and the purpose and intent of the 1982 downzoning action.
    b. Recommend zoning standards, performance standards, and/or Comprehensive Plan guidelines for total impervious cover and/or undisturbed open space.
    c. Review the combined impact of the facility footprint and total impervious surface cover, including parking.
    d. Determine if it would be appropriate to establish clearer guidance in the Comprehensive Plan regarding the circumstances under which Special Exception and Special Permit uses (as well as public uses reviewed during the 2232 process) can be considered to be "designed to mitigate impacts on the water quality of the Occoquan Reservoir."
3. Establish a more proactive easements program that provides for outreach efforts to owners of land in the Occoquan Watershed that contains environmentally sensitive resources, particularly where these resources would not otherwise be protected by regulation.
4. Fully fund watershed management planning efforts as well as the implementation of adopted plan measures. As part of the planning process:
    a. Investigate the effectiveness of existing stream valley protection mechanisms. Identify additional regulatory and/or non-regulatory measures, if any, that may be needed in order to ensure that stream valleys will be protected adequately.
    b. Identify additional performance requirements that may be appropriate to ensure that by-right development in the R-C District will not adversely affect stream quality.
5. Complete the ongoing review of impediments to the application of low impact site design techniques and identify disincentives and policy/regulatory conflicts associated with the implementation of these techniques. Determine if and how these disincentives, impediments, and conflicts can be overcome so as to increase the application of such techniques in the Occoquan Watershed. Investigate incentives and requirements that could be pursued to increase the application of these practices.

Tree Preservation Recommendations

1. Continue to press for tree conservation and preservation enabling legislature.
2. Establish tree canopy goals for the Occoquan Watershed and determine appropriate implementation measures for attaining those goals. Tree

preservation, not removal and replacement, should be the primary means of achieving the goal.
3. Encourage the revegetation of lost riparian stream buffers with native woody vegetation by identifying potential reforestation areas, providing citizen education, and encouraging citizen reforestation efforts.

Erosion and Sediment Control and Stormwater Management Recommendations

1. The Task Force supports the stormwater management findings of the Infill and Residential Study and urges implementation of its recommendations.
2. Ensure that frequency of County inspections is sufficient to enforce the Erosion and Sediment Control Ordinance.

Citizen Involvement Recommendations

1. The County should strengthen partnerships with appropriate public and citizen organizations to broaden participation in education and stewardship activities aimed at changing attitudes and behaviors. The mass media may be helpful in this effort.
2. The County should encourage growth of the network of organizations and citizen groups concerned with and/or actively involved in watershed and water quality issues, and seek assistance on methods of reaching more citizens to seek participation in stewardship activities.
3. The County should sponsor or become partners to sponsor more programs, meetings, seminars and festivals on water quality and natural resource protection that attract people who may become active volunteers in existing or new programs and help to educate others on the value of good stewardship.
4. The County should support in any way possible the expansion of existing outreach and education programs, such as those sponsored by the Northern Virginia Soil and Water Conservation District, the Audubon Naturalist Society, and the Fairfax County Park Authority.
5. The County should investigate proactive outreach to property owners who have property in or abutting Resource Protection Areas (RPAs) and/or other stream valley areas. The County may use its GIS to identify these parcels and to deliver stream-specific information RPA responsibilities, stewardship, and easement opportunities.
6. The County should develop a strategy for strengthening the role of citizens in code and ordinance enforcement. This task should be assigned to County agencies responsible for environmental code enforcement with input from environmental and community watershed stakeholder groups.

Regional Coordination Recommendations

1. The Task Force strongly endorses continued support of regional approaches to Occoquan Watershed protection. The Task Force recommends that the County request the Northern Virginia Regional Commission to develop a plan to address identified issues of greater than Fairfax County concern. One approach could be to incorporate recommendations and findings into NVRC's multi-year effort to develop a regional watershed management plan for the Occoquan.

C.2 Infill and Residential Development Study, Draft Staff Recommendations Report

Site Design and Neighborhood Compatibility (SC) Recommendations

SC 5: *Allow cluster development by right.* Consider amending the Zoning Ordinance to allow cluster subdivisions by right, provided certain criteria are satisfied, to include increased tree protection.

SC 6: *Review the Zoning Ordinance and Comprehensive Plan provisions related to open space.* Review and revise, as appropriate, the definition and other citations related to open space contained in the Zoning Ordinance; consider setting minimum sizes/dimensions for required open space areas and exempting either all or part of stormwater management facilities from open space calculations. Develop a consistent approach to open space preservation as it relates to various existing and proposed elements of the Comprehensive Plan.

TR 1: Develop an alternative to the existing PFM public street standards that will address more current thought in design using guidance from FHWA, AASHTO and ITE, along with other governmental agencies. Obtain VDOT support or develop alternative means to provide for maintenance. Adopt and / or modify the following design standards in the Public Facilities Manual (PFM) to accommodate a number of specific features on local residential streets:

a) Modify requirements for horizontal and vertical alignment and street width, including allowance for "traditional street design;"

TP1*:* *Reduce grading to increase tree preservation.* The method for calculating the amount of stormwater that is required to be retained should be revised in the Public Facilities Manual to provide an incentive for additional tree preservation. The method should be revised to allow for variable runoff coefficients for forested areas. When the Public Facilities Manual amendment is prepared, consideration should be given to limiting the use of the revised calculation method to those areas under the protection of a conservation easement or homeowner's open space.

TP 3: *Request conservation easements where appropriate.* Conservation easements on common open space should continue to be pursued where appropriate in order to provide perpetual protection for appropriate forested areas.

Stormwater Management and Erosion and Sediment Control Recommendations

SW 1: Recommendations to improve, in the Erosion and Sedimentation control review process, the awareness, planning, and financial resolution capability of the County for land disturbing projects upstream of sensitive sites in order to reduce impacts.

SW2: Recommendations to enhance, during the Erosion and Sedimentation control inspection and enforcement process, the enforcement of violations including, in certain egregious instances, revoking of land disturbing permits.

SW3: Recommendations to enhance, through educational programs, the knowledge and awareness of staff, the development industry, and citizens regarding the importance and capabilities of an Erosion and Sedimentation control program as well as create an E&S Hotline to improve program responsiveness.

SW4: This recommendation focuses on improvement of the design and installation of Erosion and sedimentation control silt fences and super silt fences by improving the design standards in the County's regulations.

SW5: Improve the effectiveness of temporary erosion and sedimentation inlet controls on construction sites by reducing the allowable area that may be drained to them, therefore increasing the number of these control devises and improving sediment control.

SW6: Allow the use of an optional 'Faircloth Floating Skimmer' as a dewatering device in temporary sediment traps to increase sediment removal efficiency.

SW7: Allow the use of chemical erosion prevention products on exposed and highly sensitive soils at construction sites in order to reduce erosion which may occur between the time that the exposed area is seeded and mulch and when the grass is fully established.

SW8: Allow the use of bonded fiber matrix products on exposed highly sensitive soils on steep slopes at construction sites in order to reduce erosion which may occur between the time that the exposed area is seeded and mulch and when the grass is fully established.

SW9: Continue the policy of requiring additional conditions associated with stormwater detention/water quality waivers to address potential problems associated with land disturbance.

SW10: Require reports from applicants with, proposed land disturbing projects, which identifying baseline data for properties downstream, corrective measures planned for implementation in the event that impacts occur, and a commitment to implement those measures.

SW11: It is recognized that the issue of water quality controls or best management practices (BMPs) is important for maintaining good ecological health of streams in Fairfax County. In order to enhance the current practices and address issues that are critical to improving the health of the environment, several recommendations were made that include: additional guidance on BMP selection and enhanced design standards in the PFM; establishing a County-wide monitoring program to assess BMP performance; allowing BMP credit for contributions to a "land trust fund"; facilitating the implementation of bioretention/biofiltration facilities ("rain gardens"), underground sand filters in residential areas, and Manufactured or Ultra Urban BMP systems in Fairfax as acceptable privately maintained BMPs; linking enhanced design features for extended detention and retention pond BMPs to increased pollutant removal efficiencies; and encouraging the retrofitting of existing stormwater detention-only ponds for water pollution treatment.

SW12: Recommendations to amend the Public Facilities Manual to 1) include technical definitions pertaining to the adequate outfall of stormwater from developments; 2) require a formal adequate outfall analysis in conjunction with review of proposed construction plans; 3) give the Director discretion to require additional measures where a proposal will discharge into an inadequate channel; and 4) better define the design procedure for pipe outlets and suggest consideration of the recent Virginia Department of Conservation and Recreation proposal pertaining to hydrologic design stormwater design.

SW13: Modify requirements and procedures as they relate to the consideration of stormwater management during the zoning process. Amend submission requirements for residential zoning applications to require additional information about stormwater management facilities and to require information pertaining to adequacy of outfall. Provide for more direct DPWES involvement regarding

stormwater management issues during the zoning process for residential applications. Revisit this issue after a certain period of time to determine how well the additional submission requirements are working. Seek written commitments from applicants for all applicable zoning cases to ensure that any on-site stormwater management facilities will be constructed, consistent with applicable County stormwater management design standards, such that facility footprints will not expand significantly from what is shown on approved development plans at the expense of tree preservation areas and/or non-stormwater management open space.

C.3 Natural Resource Management Plan

Plan Element: Natural Resource Planning

Issue 1: Natural Resource Inventories and Planning

- Strategy 1.9: Promote partnerships and volunteer participations in resource management inventories, plans and management.
- Strategy 1.12: Pursue opportunities through open space easements, proffered dedications, acquisitions and partnerships to preserve and protect additional open space – particularly land with significant natural, cultural or horticultural resources. Educate citizens about their opportunities to participate in these programs and to protect natural resources on their land.
- Strategy 1.13: Participate in County revitalization projects to identify areas appropriate for resource and open space preservation, as well as passive recreation.

Plan Element: Wildlife

Issue 3: Resolving Conflicts with Wildlife

- Strategy 3.3: Provide information to increase citizen and staff awareness of the benefits and dangers of wildlife, the role of wildlife management and methods to peacefully coexist with wildlife.

Plan Element: Water Resources

Issue 2: Baseline Inventories for Water Resources

- Strategy 2.1: Continue to expand partnerships with DPWES, NVSWCD, ANS, DEQ, Fairfax County Public Schools and others to involve Park Authority volunteers in producing certified water quality monitoring data from park sites. Seek expanded coordination of data and information among participating organizations and volunteers.
- Strategy 2.2: Complete inventory and assessment of stormwater management facilities on parklands to determine their condition and effectiveness, as well as maintenance actions required and responsibility for ongoing maintenance.
- Strategy 2.3: For parks with water bodies, include water quality physical and biological assessments in natural resource baseline inventories as

part of park master plans. When such aquatic habitats meet established criteria, a natural resource management plan will be created and a resource stewardship zone designation will be applied in the master planning process.

- Strategy 2.4: In cooperation with DWPES, begin an assessment of stormwater outfalls on or directly adjacent to parkland to identify locations of greatest concern for erosion and related damage. Explore options to mitigate damage at the sites of greatest concern.
- Strategy 2.5: Review the stream assessment data compiled by DPWES that is available for park stream valleys, identify problem areas on parklands, and develop a prioritized action plan for the most critical needs (including cost estimates for each project). Make this information available for consideration of stream restoration projects as part of preparing Park Bond referenda.

Issue 3: Protecting Water Resources

- Strategy 3.1: Participate in and closely monitor the Fairfax County Watershed Planning process being coordinated by DPWES by naming Park Authority staff to have direct involvement in each watershed plan involving streams passing through agency parkland. Keep the Park Board informed of the details of this process via the Quarterly Environment Issues Update provided to the Board.
- Strategy 3.2: As Fairfax County Watershed Plans are adopted by the Board of Supervisors, incorporate their requirements and recommendations in park master planning, design and construction in those watersheds and as may be applicable countywide.
- Strategy 3.5: Seek partnership opportunities and volunteer projects with the Potomac Conservancy, the Virginia Department of Forestry, the Northern Virginia Conservation Trust, DPWES, Department of Planning and Zoning, the Northern Virginia Regional Park Authority, the Fairfax County Tree Commission, and others to enhance riparian buffers and other aquatic habitats. Continue to expand semi-annual volunteer stream valley cleanup programs coordinated by the five Park Authority sites.
- Strategy 3.6: Pursue opportunities to utilize Best Management Practices (BMPs) and Low-Impact Development (LID) such as green buildings, rain gardens, and other innovative techniques to reduce water quality and other impacts of new or renovated Park Authority facilities. Embrace these technologies as an opportunity to demonstrate community leadership in water pollution control. When such features would add cost to development projects, provide comparative data regarding cost versus benefits.