



STRATEGIC WATERSHED MANAGEMENT SOLUTIONS (SWMS)

**FINAL REPORT
DECEMBER 2006**

Loudoun County

**Funded by:
National Fish and Wildlife Foundation
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Loudoun County Government**



FORWARD

The Need for Watershed Management in Loudoun County

Although Loudoun County has experienced population growth that consistently ranks among the highest in the nation, there is no coordinated plan to manage its water resources. In addition, there are a number of state and regional water resource statutory requirements and goals affecting the county. These would be more effectively achieved if there was a countywide plan for water resource management.

Statutory Requirements and Goals

- Virginia Pollution Discharge Elimination System (VPDES) for industry
- Municipal Separate Storm Sewer System (MS4)
- Erosion and Sediment Control for construction
- Total Maximum Daily Load (TMDL) numeric caps
- Nutrient Removal Technology and Load Caps for Wastewater Plants
- Water Supply Planning and Drought Management plans
- Virginia Tributary Strategies (under Chesapeake Bay Agreement)

The state recommends that watershed management plans be used as a planning tool by local governments to help meet the goals and requirements of managing their water resources. The Chesapeake 2000 Agreement also stresses the importance of local watershed plans.

Loudoun County already has a number of programs and activities related to protection or management of its water resources; however, these efforts have not been coordinated. A countywide comprehensive watershed management plan (CWMP) is needed to bring together all the county's watershed needs, priorities and management actions.

Such a plan, developed from a collaborative strategy, promotes participation by citizens and various interested parties and will identify potential sources of funding. The plan will provide the County Board of Supervisors with an integrated perspective of Loudoun's federal, state, and local obligations for water resource management. The plan will also consider alternative solutions for watershed management utilizing market mechanisms for economic environmental commodity trading (e.g., nutrients, etc.), where feasible.

Implementation of the plan will help maintain and restore healthy water resources which will provide environmental and economic benefits to the community and landowners. Healthy, clean, and sustainable water resources are economically essential. Maintaining the quality and quantity of surface water and groundwater are fundamental for adequate and safe drinking water supplies.

"The Process"

STRATEGY (SWMS)



PLANNING (CWMP)



WATERSHED MANAGEMENT

Key Concepts of the Process:

- ✓ Collaborative
- ✓ Integrated
- ✓ Holistic
- ✓ Iterative
- ✓ Adaptive

FORWARD

SWMS

The Loudoun County *Strategy for Watershed Management Solutions* (SWMS) collaboration was an initiative to develop a watershed management planning strategy for Loudoun County. Participants in the SWMS effort (the SWMS Team) consisted of representatives of 41 different groups or interested parties that included: business, government, conservation, agriculture, and citizens. They met on four occasions between February and June 2006 to develop a consensus strategy to guide future steps of the watershed management planning process. The guidance strategy was formalized in a "Declaration of Cooperation" (DOC) which

summarizes the results of the SWMS Team's work.

Also developed during the SWMS effort was a comprehensive inventory of existing watershed related programs and data that are considered useful to watershed management planning.

The SWMS project was supported by funding from the National Fish and Wildlife Foundation, the U.S. EPA, and Loudoun County.

The DOC

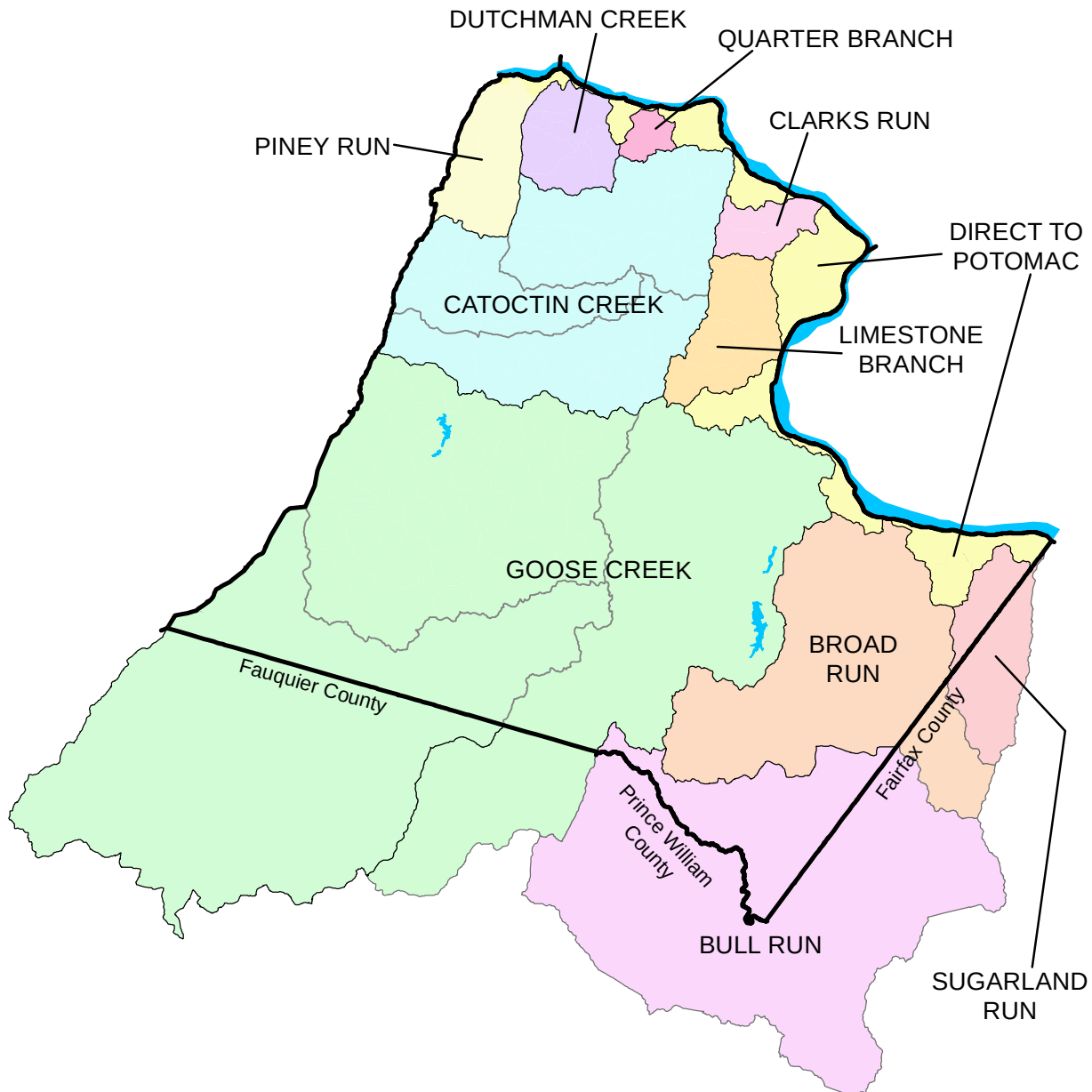
The Declaration of Cooperation summarizes and formalizes the results of the SWMS Team's work and included:

- ✓ Guiding principles of the planning process including vision, values, and goals for the plan.
- ✓ Recommendations for a two-phased work plan approach: Begin with currently available data and funding resources, then expand and enhance the plan later when more data and resources are available.
- ✓ Recommendations for a "Stakeholder Steering Committee" to guide continued watershed planning efforts and maintain a collaborative approach to decision making.
- ✓ Designate a Watershed Coordinator in county government to be the contact and liaison between the Stakeholder Steering Committee, County staff, and County Administration.

What's Next?

Following SWMS, the Stakeholder Steering Committee will be organized and help provide guidance for the County's next major effort in the watershed planning process - development of a Comprehensive Watershed Management Plan (CWMP). The CWMP is expected to be completed by the end of 2007.

Loudoun County, Virginia Watersheds



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I. THE LOUDOUN COUNTY STRATEGIC WATERSHED MANAGEMENT SOLUTIONS (SWMS)

February-June 2006 Declaration of Cooperation Executive Summary

The Declaration of Cooperation (DOC) provides a consensus strategy for guiding Loudoun County's watershed planning process. The DOC was created by the 69 member Loudoun Strategic Watershed Management Solutions (SWMS) Team, consisting of representatives of 41 different development, agriculture, conservation, county, state, federal and citizen interests. Team members worked over the course of four intensive meetings (February to June 2006) to develop this consensus guidance and requests the Loudoun County Board of Supervisors and towns to enact resolutions of support for the DOC.

In recognition of the need for continued collaboration through the watershed planning process the DOC describes recommendations for the county strategy for watershed planning and also identifies specific team member commitments for supporting the county strategy. *(For further background on SWMS, see the Summary of SWMS, Section I. For specific commitments of team members, see Appendix F.)*

Need: Loudoun County currently manages its water resources through a variety of diverse programs but has no countywide watershed plan that connects these programs or establishes priorities among the programs. A watershed plan will bring together the county's needs, priorities and implementation plans into a specific project that will protect and restore its water resources. The plan will provide an integrated picture of federal and state obligations for removing pollutants from Loudoun's waters, combined with priorities for protecting drinking water and preventing pollution of currently clean waters. *(For more specifics on what a watershed plan will cover, see the Summary of SWMS, Section I.)*

Principles, Vision, Values and Goals: The SWMS Team identified guiding principles for the planning process and crafted a vision, values and goals for the watershed plan which may be found in the Declaration of Cooperation. *(See Section III.)*

Scope and Overall Process: The SWMS Team recommends a *two phased approach* to develop watershed plans. A phased approach will enable the county to immediately begin watershed planning using currently available data at minimal cost. It will also allow the county to enhance the quality and sophistication of its plans over time as additional resources become available. The watershed planning process will result in watershed plans for nine major watersheds within the county and support the watershed activities of neighboring counties where the natural borders of some of the nine watersheds end. When more resources become available to the county more data collection and analysis followed by the development of more sophisticated and detailed watershed plans will ensue. *(For more information on the two phased approach, see the DOC, Section III.)*

Collaborative Governance Approach: To provide technical oversight, policy and public involvement for the watershed management process a countywide Stakeholder Steering Committee will be formed to guide implementation of this Declaration of Cooperation, develop watershed plans and resolve other issues related to watershed management. The Stakeholder Steering Committee may designate subcommittees to specifically resolve issues such as data management and storage, funding and other technical matters, which in turn will work with subcommittees designated from BOS Advisory Committees (e.g. Water Resources Technical Advisory Committee, etc.). *(For more information see the committee organization chart in May Attachment II, p. 150.)*

BOS and Town Council Action Needed: The SWMS Team requests that the Board of Supervisors and town councils pass a Resolution of Support for this strategy, which has been developed through the hard work and dedication of a diverse and broadly representative group of stakeholders.

The following specific actions will result from this Resolution of Support:

- 1) Designation of a Watershed Coordinator or Manager:** The Watershed Coordinator or Manager will be responsible for coordinating the county's watershed planning and will report directly to the County Administrator's Office. The Manager's or Coordinator's responsibilities will include being the contact and liaison between the stakeholder Steering Committee, the staff, and County Administrator's Office.
- 2) Recognition of a Countywide Stakeholder Steering Committee:** The SWMS Team will empower the Stakeholder Steering Committee to begin to guide the watershed planning activities and to implement the Declaration of Cooperation. (*For more information on the Stakeholder Steering Committee, see the DOC Section V.C.*). The Steering Committee may create several key subcommittees that will guide key watershed planning activities, which may include: 1) funding; 2) data management; 3) education and outreach; and 4) technical coordination.

Participating Members of the SWMS Team

FEDERAL & STATE AGENCIES

Virginia Cooperative Extension - Loudoun Unit:

C. Corey Childs

Virginia Department of Conservation and Recreation

(DCR): Bob Slusser, Mark Aveni

Virginia Department of Environmental Quality: Robert

Swanson, Bryant Thomas

Virginia Department of Forestry: Kelley Wagner

Virginia Department of Transportation: Pawan Sarang

Loudoun Soil & Water Conservation District: Jim

Christian, Peter Holden, Pat McIlvaine, Chris Van Vlack

U.S. Department of Agriculture, NRCS, FSC, USDA:

Larry Wilkinson

U.S. Geological Survey: Mark R. Bennett, Nick Ratcliff (retired)

U.S. Army Corps of Engineer: Stacey Sloan Blersch

U.S. Environmental Protection Agency: Debra Gutenson, Office of Ground Water and Drinking Water; Otto Gutenson, Wetland and Waters Program

LOCAL GOVERNMENT

Fairfax County: Matt Meyers

Fairfax Water Authority: Gregory J. Prelewicz, P.E.

Lovettsville: Samuel Finz

Loudoun County Administration: Linda Neri

Loudoun County Board of Supervisors: Sally Kurtz, Stephen Snow

Loudoun County Building & Development:

Wm. Kelly Baty, Matt Brown, Alex Blackburn,

Dennis Cumbie, Laura Edmonds, Ed Erwin, Steve

Kayser, William Marsh, Glen Rubis, Todd Taylor

Loudoun County Environmental Health, Environmental

Engineering and Policy Development: Robert Lee, James Mackie

Loudoun County Office of Mapping and Geographic

Information: Trent Small

Loudoun County Parks and Recreation: Mark Novak

Loudoun County Planning Department: Bruce

McGranahan, Joe Gorney, Cindy Keegan

Loudoun County Public Works (General Services,

Stormwater): David Ward, Randy Williford

Loudoun County Public Schools: Randy Vlad

Water Resources Technical Advisory Committee (WRTAC): Charlie Faust

WATER SUPPLY

Loudoun County Sanitation Authority (LCSA): Todd Danielson

PUBLIC & AGRICULTURAL GROUPS

Loudoun County Farm Bureau: Chris Hatch, Donna

Rogers

Farmer: Chip Planck

CONSERVATION & ENVIRONMENTAL GROUPS

Audubon Naturalist Society: Cliff Fairweather, Stella Koch

Catoctin Scenic River Advisory Committee: Ann Larson

Goose Creek Association: Nancy West

Goose Creek Scenic River Advisory Committee: Helen Casey

Loudoun Watershed Watch: Darrell Schwalm, Fred Fox

Loudoun Wildlife Conservancy: Phil Daley

The Piedmont Environmental Council (PEC): Gem Bingol, Ed Gorski

DEVELOPMENT COMMUNITY

Greenvest L.C.: David Snellings

Northern Virginia Building Industry Association:

George McGregor

Heavy Construction Contractors Association: Jim Stepahin

Luck Stone Corporation: Mark Peterson

Toll Brothers: Bill Hatzler

Wetland Studies and Solutions, Inc. (WSSI): Mark Headly

VA Paving Company: Chris Monahan

REGIONAL GOVERNMENT

Metropolitan Washington Airports Authority:

Michael T. Hackett, Charles Baummer

Metropolitan Washington Council of Governments:

John Galli

Northern Virginia Regional Commission: Katherine K. Mull

FACILITATION

Institute for Environmental Negotiation, University of Virginia: Tanya Denckla Cobb, Christine Gyovai, Jason Espie

II. THE LOUDOUN COUNTY STRATEGIC WATERSHED MANAGEMENT SOLUTIONS (SWMS)

DECLARATION OF COOPERATION KEY AREAS OF AGREEMENT

DOC BACKGROUND

This Declaration of Cooperation (DOC) was created in spring 2006 to serve as a compendium of the recommendations developed by the Loudoun Strategic Watershed Management Solutions (SWMS) Team. The DOC represents significant thought and effort on the part of key stakeholders and it draws on the lessons learned from other Virginia counties that have already undertaken watershed planning. To reconcile conflicting viewpoints regarding the watershed planning process, Loudoun County staff envisioned the need to bring all key stakeholders together at the outset to create a shared consensus strategy and process for watershed planning that the county and stakeholders could both support. This DOC, as a result, provides consensus parameters and guidance for the watershed planning process. In addition to consensus support for the collaborative approach outlined, as indicated by the signature pages, some SWMS Team members have provided additional specific organizational commitments to the watershed planning process. *(Member signatures and commitments may be found in Appendix F.)*

GUIDING PRINCIPLES, VISION, VALUES, AND GOALS

The following guiding principles, vision, values, and goals are recommended for a watershed plan for Loudoun County.

- A. Principles:** The following are principles recommended to guide the watershed planning process:
 - 1. Create a realistic, achievable, implementable, balanced plan based on scientific data and models that are accepted by professional scientists in the field.
 - 2. Create a flexible, dynamic and simple plan.
 - 3. Address resources for implementation in the watershed planning process (monetary, in-kind and staff).
 - 4. Consider economic development, jobs, housing (current and future), agriculture and conservation land needs in the creation of the plan.
 - 5. Provide a plan based on consensus among the diverse views.
 - 6. Provide a collaborative approach that allows stakeholders to work together to provide support and not duplicate individual efforts or projects.
- B. Vision:** The following vision is recommended for Loudoun County's watershed plan:
Loudoun County is a place where natural and cultural resources offer beauty and function. Residents and visitors enjoy clean drinking water, recreate in swimmable and fishable waters, and have access to diverse natural habitats. Loudoun's residents remain informed, energized, and involved in maintaining and protecting healthy watersheds.
- C. Values:** The following values are recommended to drive Loudoun County's watershed planning effort and to meet the needs of future generations:
 - 1. Affordable and clean drinking water is always available for all Loudoun citizens.
 - 2. Economic development activities are sensitive to watershed functions and health.
 - 3. Nature and natural systems that are essential for stream health exist in all Loudoun watersheds.
 - 4. Stewardship is recognized as a community responsibility and encouraged.

5. Watershed planning and management is sensitive to the needs of agricultural production, including adequate water supplies, and the continued viability of the county's agricultural heritage as a means of food security and economic growth.
 6. All Loudoun citizens remain engaged, informed and active in watershed planning, expressing the holistic concept of community responsibility.
- D. Goals:** The following broad goals are recommended for Loudoun County's watershed planning effort:
1. Protect public health and the environment.
 2. Manage groundwater and surface water supply for current and future demands through private and public means.
 3. Manage stormwater runoff in accordance with best management practices to protect stream channel processes and to preserve and restore water quality, stream health and groundwater recharge.
 4. Protect, provide and restore diverse habitats and riparian buffers to provide healthy streams and public recreation opportunities.
 5. Preserve the economic value of healthy watersheds by providing the natural functions of watersheds including wetlands and floodplains.
 6. Engage citizens in watershed planning efforts, raise their awareness of Loudoun's watersheds and utilize citizen input in all watershed matters.
 7. Effect cooperation and coordination between government and non-government watershed management efforts, data collection and resources within the watersheds.

SCOPE AND OVERALL PROCESS FOR LOUDOUN WATERSHED PLANNING

The SWMS Team recommends a two phased approach to develop watershed plans. This phased approach will enable the County to immediately begin watershed planning using currently available data at a minimum cost. It will also allow the County to enhance the quality and sophistication of its plans over time as grants and other funding becomes available.

- A. Phase I:** Watershed management planning can proceed immediately using already acquired or existing data in a cost-effective manner. In this phase, three different types of plans are recommended in recognition of the different scope and scale of legal requirements and needs for watershed planning. All three should be developed concurrently using currently existing data beginning as soon as practicable.
1. **Tier I: Regional Plan:** Loudoun County watersheds extend into adjoining counties and are part of the larger Chesapeake Bay Watershed. It is recommended that a Regional Watershed Plan defined by the geographic boundaries of the watersheds be developed in cooperation with neighboring jurisdictions and regional authorities (e.g. Fairfax, Prince William, and Fauquier).
 2. **Tier II: Major Watershed Plans:** Individual Watershed Management Plans that are defined by both the political boundaries of the county and watershed boundaries are recommended to be developed for the nine major watersheds and areas that drain directly to the Potomac, (i.e., Direct Watershed to the Potomac). These plans will involve working with stakeholders within those watersheds and providing communication and coordination regarding those plans at the countywide level. Individual watershed management plans using existing data should be developed for: (1) Sugarland Run and Broad Run; (2) Bull Run; (3) Beaverdam Creek and Lower Goose Creek; (4) Upper Goose Creek; (5) Limestone Branch and Clarks Run; (6) Catoctin Creek; (7) Dutchman's Creek and Quarter Branch; (8) Piney Run; and (9) Cub Run.
 3. **Tier III: Subwatershed Implementation Plans:** Preliminary Subwatershed Implementation Plans should be developed as supplements to each of the major

watershed plans. The subwatershed plans should be defined by both subwatershed boundaries and characterization of the subwatershed. Each subwatershed plan will provide implementation strategies to protect and restore the water quality and stream health in specific portions of the watershed. The order in which these supplemental plans are developed should be based on a prioritization system that selects the “most vulnerable” watersheds first, with preference given to headwater subwatersheds, drinking water sources and vulnerability potential.

4. **Modeling:** In Phase I the county will begin its watershed planning with the least-cost predictive tools that do not require data beyond what is already available, that are simple and can be used in-house by Loudoun County staff. For predicting impacts of different management options on water quality and quantity, the county will consider basic spreadsheet models. For ground water quality and quantity, the models can offer predictive guidance for nonpoint source pollution and base flow. Questions regarding ground water availability are more difficult to quantify with ground water models and require a good conceptual understanding of the ground water flow system of the area being studied. In Phase I the county will focus on developing a conceptual understanding of the groundwater flow system. *(For further guidance on modeling, see May Attachment I, p. 148.)*
- B. **Phase II:** More sophisticated watershed management plans can be developed when county or other resources are available to collect and analyze additional data based on established priorities. The data collection could focus on: (1) filling identified data gaps; (2) developing sophisticated predictive models to assess degradation impacts under varying loading and growth conditions (see Section IV below); (3) developing detailed subwatershed implementation plans based on stream surveys; and (4) assessing progress in achieving planning goals based on water quality and stream health data collected under probability and trend monitoring approaches.
1. **Detailed Field Surveys:** Additional field surveys should be conducted in each subwatershed to provide updated and more detailed data. These detailed field surveys should be used to assess the pathways of runoff to streams, hydrological impacts of increased runoff, impacts on aquatic life, and impacts on habitat.
 2. **Updated Implementation Plans:** The field survey results can be used to revise the preliminary subwatershed implementation plans into more detailed, long-term implementation plans.
 3. **Modeling:** As the County progresses in its watershed management planning effort, it may need more sophisticated predictive capability. When more data are gathered and become available, the County should consider more complex modeling methodologies to predict the impact of proposed management strategies on water quality, quantity, and groundwater. More complex modeling may require additional funding and staffing capacity to accomplish. *(For further guidance on modeling, see May Attachment I, p. 148.)*
- C. **Collaborative Governance Approach:** A broadly representative and balanced countywide Stakeholder Steering Committee will be established to provide policy and technical recommendations to the Board of Supervisors. The Stakeholder Steering Committee will guide implementation of this Declaration of Cooperation and ensure that an “adaptive management” approach is used to make changes to the watershed planning process as experience is gained and lessons learned. Technical subcommittees will be established to provide input and guidance to the Stakeholder Steering Committee and county as needed. The SWMS Team also recommends establishing subwatershed committees, if needed, with liaisons from the subwatershed committees serving on the countywide Stakeholder Steering Committee. *(For the Stakeholder Steering Committee composition, organizational structure and communication structure see May Attachment II, p. 150.)*

MODELING

Decision Making Tool: Computer modeling can be a helpful decision-making tool for the watershed planning process. It can be used to forecast the impact of different management strategies and therefore help in the selection of preferred management practices. The principal use envisioned for modeling in the Loudoun watershed planning process is to provide better information for decisions regarding water quality and quantity (water supply planning) for both surface and ground water. (*For further guidance on modeling see May Attachment I, p. 148.*)

- A. **Surface Water Modeling:** For surface water quality and quantity, the models can offer predictive guidance for aquatic, drinking, and recreational values of streams, specifically addressing at least sediment, nutrients, and flow variation (“flashiness”).
- B. **Ground Water Modeling:** For ground water quality and quantity, the models can offer predictive guidance for nonpoint source pollution, base flow, and water supplies and will help develop a conceptual understanding of the groundwater system.
- C. **Modeling Choices:** The Team recognizes that there are a wide range of models available that can vary greatly in cost, complexity, ease of application and ability to use in-house. In light of this, the Team recommends that the county adopt a phased approach, as described above. In addition, the Team recommends that the modeling information be shared with the public in an accessible and understandable format, such as through the internet.

DATA MANAGEMENT AND PROTOCOLS

- A. **Current Data Availability:** Data are a major component of the watershed plan and there is a need for more attention and resources to be directed to data management and acquisition. The SWMS Team agrees that data and studies currently available are sufficient to provide the initial prioritization and snapshot assessment envisioned in Phase I of the proposed Scope of watershed planning. However, the SWMS Team recommends that the integrity of existing data be examined carefully before using it in any assessment as not all existing data are relevant to the assessment’s purpose, and some are old or perhaps faulty.
- B. **Central Database and Data Coordinator/Office:** A common database needs to be created to store water quality and quantity data from the many data collection entities working in the county. It is important that there be one data “coordinator” or management focal point that assembles data and establishes standard data collection and management protocols. The Team also recommends that the Steering Committee coordinate with the data coordinator or manager about the data needs identified by the Water Resources Technical Advisory Committee (WRTAC).
- C. **Monitoring:** A combination of monitoring approaches is needed. One approach, suggested for use during Phase I of the Scope, is to use probabilistic-based (statistical) monitoring, applied countywide to provide baseline, and snapshot data on watershed conditions for tracking progress. Another important approach, suggested for Phase II of the Scope, is to establish an on-going system of permanent monitoring stations to monitor progress over time. Lastly, the SWMS Team recommends analyzing and reporting monitoring data on a periodic basis to ensure relevant data are being collected.
- D. **Stream Survey Data:** Stream surveys will eventually be needed to develop data needed for detailed implementation plans to protect or restore priority stream segments identified in subwatershed plans.
- E. **Data Collection Needs:** It is important that a number of data and stream quality studies be incorporated into the assessment and watershed characterization effort. There is a need to decide how to quickly gather and assess these existing data for use in the countywide

assessment based on costs and the needs listed below. All new data collection should follow data collection protocols used by existing studies, or state endorsed monitoring guidelines.

1. The county should consider making a commitment to inventory, map and monitor all water resources within the county's watersheds.
2. There is a need to establish a network of on-going monitoring stations to supplement the countywide assessment and subwatershed characterization and to assist with the evaluation and updating of the watershed plans over the years.
3. A flow gauging network should be established to help monitor in-stream flow because maintaining ecologically healthy streams is a concern for the future of Loudoun's waterways.
4. GIS data needs to be incorporated into the Watershed Management Planning effort. Surface and ground water quality and quantity data, wetlands data and other data, as appropriate, needs to be incorporated into the county GIS system and the county base maps.
 - Protocols – The Steering Committee or its subcommittees may adopt standards and protocols for data collection, analysis, and reporting as the need arises.

CRITERIA FOR PRIORITIZING PROBLEMS AND THE DEVELOPMENT OF SUBWATERSHED PLANS

- A. **Need for Criteria:** The SWMS Team agreed that it is important to establish countywide prioritization criteria to guide the watershed planning effort. Specifically, prioritization criteria should help identify which subwatershed plans are developed first and where implementation should first be initiated. It is understood that any plan should be implemented incrementally so that identified priority areas can be addressed first.
- B. **Criteria Guidelines:** The team identified the following list of criteria for priority determination. They are not ordered and not given weight.
 - Rectify pre-existing and ineffective stormwater management controls.
 - Protect drinking source water.
 - Protect drinking water supply recharge areas.
 - Fulfill state and federal regulation requirements.
 - Protect waters in development-pressure areas, or areas on the cusp of change for future build-out.
 - Protect sensitive areas such as headwaters, groundwater recharge areas, and wetlands.
 - Protect human health, particularly situations arising from possible septic or groundwater contamination.
 - Take into account the different characterizations amongst subwatersheds such as size, urban, rural, east, west, soil type, farming, drinking water supply shed, etc.
 - Protect undeveloped or minimally developed subwatersheds.
 - Implement projects that are the most efficient and offer the greatest potential for efficient reduction of nutrients.

FUNDING

- A. **Funding Strategy:** Funding is a critical part of the watershed planning process and the team's recommendation for a funding strategy for the watershed planning process is below. In addition, the team developed a list of potential sources of funding and principles to consider

when seeking funding and other related information. This information may be found in the March 2006 SWMS meeting summary.

- B. **Dedicated Funding:** The team emphasizes the need for a dedicated source of funding for watershed planning from within the county. There are many potential benefits from watershed planning, such as being aware, proactive and prepared for new stormwater and nutrient cap regulations that are forthcoming. (See *Forward, "The Need for Watershed Management in Loudoun County."*) Creating a dedicated source of funding is important to ensure a successful watershed planning effort to help meet new state and federal regulatory compliance requirements.
- C. **Grant Funding:** Consider identifying sources of grant funding and corporate sponsorship for both a short-term and long-term source of funding for watershed planning, but especially in the short-term while a long-term funding strategy is being created. The SWMS Team recognizes that significant staff time is required to write and administer grants.
- D. **Targeted Funding:** Consider developing sources of funding for critical areas identified in the watershed plan. In addition, consider phases in watershed planning when looking for and dedicating sources of funding as fewer financial resources may be needed for Phase I than Phase II.
- E. **Existing Funding:** Evaluate, prioritize and possibly reallocate existing funding resources to determine if those resources could be applied to watershed planning.
- F. **Bay Act Funding:** Consider the possibility of Loudoun County adopting the Chesapeake Bay Preservation Act (CBPA) which may be a potential source of funding. However, there could be regulatory implications that could require careful consideration.
- G. **In-kind:** Consider significant financial contributions from in-kind sources such as citizen groups and the development community.

STAKEHOLDER/CITIZEN INVOLVEMENT IN THE WATERSHED PLANNING EFFORT

- A. **Valuing Outcomes:** The SWMS Team agreed that the success of watershed management planning in Loudoun County ultimately depends on people valuing the outcomes and contributing to the watershed plan implementation activities. The planning process should therefore involve people in the development of the Watershed Management Plans to enhance the plan's value to citizens.
- B. **Engaging Citizens:** Overall, the team agreed that it is essential for the planning process to create ways that make it easy for Loudoun citizens to be informed, engaged and involved. Ideas include having planning leaders attend meetings of different citizens' groups to reach citizens who might be difficult to reach otherwise, creating a website, conducting workshops, creating other forums to engage citizens, and providing educational resources to the public. It is important to "go beyond the choir" to engage citizens who might not otherwise be involved in the watershed planning process and plan implementation. Outreach strategies also need to ensure that actual implementation strategies are accessible to people of all socio-economic levels.
- C. **Methods to Involve Stakeholders:** To ensure stakeholder involvement throughout planning and implementation the team recommends that the county adopt the following approaches:
 - 1. Create an inventory of county organizations that are stakeholders in the watershed plan, i.e. organizations whose work or mission relates to the goals of the watershed plan, including conservation and environmental interests, historic preservation, parks and recreation, development, business, and agriculture. The SWMS participant list may be used as an initial document for this inventory.
 - 2. Convene or support a countywide Stakeholder Steering Committee with representation of diverse interests to help guide the countywide Watershed Management Planning process as previously outlined in Section V.D. This

- committee should include liaisons from watershed groups as well as resource people and Loudoun County staff.
3. Seek guidance from the countywide Stakeholder Steering Committee and remain flexible in determining, for each individual watershed planning effort, the form of citizen involvement that is most appropriate for that watershed (e.g. stakeholder committees, task forces, *ad hoc* groups, focus groups, workshops, forums, presentations to homeowner associations (HOAs), etc.).
 4. Consider using existing stakeholder groups (e.g. Loudoun Watershed Watch, Northern Virginia Building Industry Association, Soil and Water Conservation District, etc.) as forums to enlist citizen engagement in the Watershed Management Planning effort.
 5. Involve schools and students and use the schools as a forum to involve citizens in the planning process.
 6. Recognize that parks and streamside trails are valued community resources that can be used to engage citizens in watershed management.
 7. Consider using citizen volunteers to conduct some of the public education and outreach initiatives during the planning process to relieve the burden on county staff and to engage citizens in working with their neighbors.

EDUCATION

- A. **Informed Citizenry:** The watershed planning process should include a strong education component to create a more informed citizenry and to raise the awareness of citizens regarding watershed management needs. Further, the educational component should be designed not only for the plan but also for its implementation.
- B. **Strategies:** The SWMS Team provides the following recommendations and guidelines for the county's outreach and education efforts.
 - Use existing education/outreach programs to avoid "reinventing the wheel".
 - Education and outreach efforts should stay independent of the political arena.
 - Provide all on-site wastewater treatment system owners with knowledge about monitoring and maintaining septic systems.
 - Use stream valley parks as a venue for education and outreach.
 - Use education and outreach efforts to raise awareness of existing regulations and the need for compliance.
 - Involve the schools and students in the Watershed Management Planning process.

POLICY AND REGULATIONS

- A. **Guidelines Regarding Policies and Regulations:** The SWMS Team agreed on the following guidelines for addressing policies and regulations in the Plan.
 1. Measures to protect watershed health will be integrated into the county's planning and regulatory documents, including the Revised General Plan, Countywide Transportation Plan, Zoning Ordinance and the Facilities Standards Manual. County planning and regulatory documents should further the health and viability of county watersheds with particular attention to adequate water supplies, good water quality, healthy riparian corridors, erosion and sediment control and healthy stream flows.
 2. The Stormwater permitting program is still under development and other programs will need to be used in conjunction with the stormwater program for addressing watershed problems.

3. Watershed planning strategies should be mindful of Virginia's Dillon Rule legal framework. Legal or other expert opinions should be obtained when possible to resolve or clarify differing interpretations such as inconsistent interpretations of court rulings. For instance, it would be helpful to obtain clarification about alternative septic systems, as there are different approaches being taken in Clarke and Fauquier Counties.
 4. The Plan should incorporate and address the TMDL regulations and guidelines of the Virginia Department of Environmental Quality and Department of Conservation and Recreation.
- B. Guidelines for Handling Issues:** The SWMS Team agreed on the following guidelines for how to handle issues that arise during the watershed planning process that could impact policies and regulations. Some policy recommendations may apply to only one of the county's watersheds while others may apply to the entire county.
1. Those policy recommendations that are applicable to the entire county should be lifted out of the individual watershed planning efforts and placed on a separate and faster track for consideration by the Board of Supervisors (BOS) so that policy recommendations are not on hold while the remainder of that watershed plan is being finished.
 2. Recommendations for policy changes should be fed into the General Plan as proposed amendments and, where applicable, as amendments to the Zoning Ordinance and Facilities Standards Manual (FSM).

COORDINATION OF COUNTY AUTHORITIES

- A. Coordination Strategies:** Creating easy and efficient mechanisms for internal county coordination during the planning process and plan implementation will be essential for success. Watershed planning is complex involving multiple sources of data, multiple skill sets and multiple county departments. To accomplish this goal the SWMS Team recommends the following strategies.
- 1. Designate Watershed Manager/Coordinator:** The BOS should designate through County Administration where leadership for watershed management coordination will reside, a critical factor for effective coordination.
 - a. In the short-term, for the purposes of the watershed planning effort, the SWMS Team recommends that the BOS designate either an existing department or the Environmental Coordinator as the lead for the watershed planning effort.
 - b. For the long-term, if needed to fulfill the requirements of the Chesapeake Bay Agreement, the SWMS Team urges the BOS to consider the creation of an Environmental Services Department in its long-term planning for county staff.

INVOLVEMENT OF COUNTY DECISION-MAKERS

- A. BOS and Town Representation:** The SWMS Team recommends that the BOS and incorporated towns either (in order of preference) attends, has representation or be regularly informed during the watershed planning process. Additionally, the Planning Commission (PC) should be given the opportunity to participate and at a minimum should be kept informed throughout the process.
- B. Progress Reports:** The SWMS Team recommends that presentations should be made to the following decision-making bodies throughout the watershed management planning process in consultation with one or two supervisors as appropriate. Presentations should reflect

high-level County Administration support by having the presentations opened by the County Administrator with technical information provided by the Environmental Coordinator or Watershed Planning Program Manager, as appropriate.

1. The Board of Supervisors;
2. The Planning Commission; and
3. Incorporated towns (the Coalition of Loudoun Towns (COLT) may be an appropriate venue for these presentations and it may also be appropriate to provide presentations to joint meetings of town councils and planning commissions).

IMPLEMENTATION OF THE PLAN

- A. **Authority for Implementation:** The plan should specify and clarify who will implement each component of the plan, provide a projected completion date and designate who has authority for implementation.
- B. **Coordination with Towns:** The county will coordinate with the towns and enlist their participation in watershed management planning and implementation.
- C. **Public-Private Partners:** It is important for the county to work with and encourage its private sector partners to continue their ongoing activities in the watersheds throughout both the planning and implementation phases of the watershed management planning process.
- D. **Implementation Steering Committee:** The SWMS team recommends that the countywide Stakeholder Steering Committee be continued or transition its membership after completion of the plan to ensure continuing citizen involvement in monitoring and assisting with implementation.

IMPLEMENTATION OF THE DOC

The SWMS Team recommends that on conclusion of its work, this Declaration of Cooperation be presented to the BOS and incorporated towns for their review and approval. It should be presented to the Planning Commission and committees listed above (WRTAC, COLT) for their information.

Evaluation of the Watershed Plan

The SWMS Team agrees that the Watershed Plans should include a strategy for revisiting and updating the plans over time to ensure that they remain living documents. These plan reviews should be conducted by the county in collaboration with the countywide Stakeholder Steering Committee. An important component for assessing progress in achieving planning goals will be the water quality and stream health data collected under probability and trend monitoring approaches.

III. Loudoun County Strategy for Watershed Management Solutions Inventory of Watershed Activities

June 26, 2006

Prepared by the Institute for Environmental Negotiation,
University of Virginia

Overview

This inventory of watershed activities was compiled for the Strategy for Watershed Management Solutions (SWMS) process conducted for Loudoun County between January and June 2006. Its purpose was to begin an inventory of all current and future anticipated watershed-related activities in Loudoun County by local organizations, citizen groups, state and federal agencies and county and regional government. Primary sources for this information were SWMS participants, with collection beginning during a series of 17 stakeholder interviews conducted by the Institute for Environmental Negotiation (IEN). Additional information was obtained from website research, proposal and report studies, emails and discussions with numerous participants throughout the SWMS process.

Classification and Metadata

The 78 activities identified below vary greatly in scope, size and, in many cases, they are overlapping and are implemented by multiple parties. Building a definitive and clear classification for them is thus difficult. The following four general classifications of activity types were proposed and found acceptable to the SWMS team participants. The four generalized categories of this inventory are as follows.

1. Data, study or resource
2. Education, outreach or project
3. Land use planning, policy or program
4. Stream monitoring or stewardship

A hyperlinked (clickable) Table of Contents listing all activities is provided below for ease of navigation. Activities are grouped first by activity type and then sorted alphabetically by lead organization. Attempts were made to collect a standard set of information for each of the 78 activities identified as of June 26, 2006. If information was not obtainable a field was left blank. A brief description of the metadata collected for each activity follows.

Activity Type: Activities are grouped into one of the four activity types listed above.

Lead Organization: A lead organization is identified for each activity, understanding that more than one organization is often involved.

Description: The written description includes information obtained from websites and proposals or submitted in writing by SWMS participants. The level of descriptive detail varies.

Partners/Others: Many activities involve more than one organization or agency. They are listed in this category.

Timeframe: If possible a timeframe is given for an activity. There is great variation in timeframe between activities. Some are one time, period-specific grants while others are full time, on-going programs or projects of government departments or agencies.

Cost: Similar to timeframe, costs for each activity varied greatly. Where information was provided, estimated, or made available, it is listed. In some cases volunteer person-hours were given.

Contact: To allow further research to be done on specific activities a primary contact was identified and a telephone and or email address provided. If it was available, an organization's full mailing address and telephone number are listed in a directory in Table E, p. 55.

Website: If a specific website was available for an activity it may be found here. Otherwise the lead organization's homepage was provided as a fallback measure.

Metric/Result: This inventory also attempted to provide an analysis of watershed activities. The lead SWMS participants were each asked to attempt to quantify some metric or result for each activity. For example, if specific pollution reduction achievements of an activity were possible to document, such as acreage of wetlands under conservation easement, they were given. Metrics or quantifiable measurements for each activity are neither necessarily available nor feasible to assemble in the timeframe given for this first attempt at an inventory of activities.

This project is intended to be a first step towards helping inform the participants who are committed to the next phases of watershed planning and implementation in Loudoun County. This inventory was compiled by IEN for Loudoun County's Department of Building and Development (LCB&D). All the data below was exported from an excel file called: 'INVENTORY_2006Jun24_FINAL.xls'.

Questions, comments, corrections or any concerns regarding this report should be sent to: **Wm. Kelly Baty**, Loudoun County Building & Development, PO Box 7000, 1 Harrison St. 3rd Floor, Leesburg, VA, 20177-7000; Phone: 703-771-5390 Direct, H. 304 725-3748; C. 571- 265-2607; Fax: 703-771-5215, Email: wbaty@loudoun.gov

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1. Data, Study or Resource

1.01 A Citizen's Guide to Erosion and Sediment Control in Loudoun County

Activity Type: Data, study or resource

Lead Organization: Loudoun County Building & Development

Description: A brochure prepared by the Department of Building and Development.

Partners/others:

Timeframe:

Cost:

Contact: Steve Kayser, Loudoun County Department of Building and Development, 703-777-0397

Website: www.loudoun.gov/b&d/erosion.htm

Metric/Result:

1.02 Data management

Activity Type: Data, study or resource

Lead Organization: Loudoun County Building & Development

Description: Component of WRMP (see also 1.04 and 4.11): Data incorporated into relational database and geographic locations in County GIS. Initial records (presently ~ 30,000) mainly wells/groundwater and sewage disposal systems data. To be expanded to incorporate other WRMP data.

Partners/others: LCHD, USEPA

Timeframe: 1988 - present

Cost:

Contact: Glen Rubis, Dennis Cumbie, Loudoun County Department of Building and Development, 703-777-0397

Website: <http://www.loudoun.gov/b&d/water.htm>

Metric/Result: All of the WRMP activities are ongoing and have not been operated long enough to assess appropriate metrics or efficacy of the efforts.

1.03 Groundwater level and quality monitoring

Activity Type: Data, study or resource

Lead Organization: Loudoun County Building & Development

Description: Component of WRMP (see also 1.04 and 4.11): As part of the WRMP (see X.XX), a network of dedicated monitoring wells is being established to track groundwater levels and quality countywide. In addition to constructing new wells, donations of unused existing wells have been requested and accepted (see well donation program web page).

Partners/others: USEPA

Timeframe: 2003 - present

Cost:

Contact: Dennis Cumbie, Loudoun County Department of Building and Development, 703-777-0397

Website: <http://www.loudoun.gov/b&d/water.htm#water>

<http://www.loudoun.gov/b&d/well/index.htm>

Metric/Result: All of the WRMP activities are ongoing and have not been operated long enough to assess appropriate metrics or efficacy of the efforts.

1.04 Loudoun County Water Resource Monitoring Program (also see 4.11)

Activity Type: Data, study or resource

Lead Organization: Loudoun County Building & Development

Description: A long-term program to monitor, collect, and organize basic hydrologic data so that the County and other organizations are able to better understand the quantity and quality of the water resources in the county and to track potential changes to them over time. This will be accomplished by collaboration with various county departments, federal agencies, and local citizens groups. Part of the

infrastructure and initial data collection will be funded by a grant from EPA. Some of the major components of the program are described in more detail below.

Partners/others: USEPA

Timeframe: 2001 - present

Cost:

Contact: Dennis Cumbie, Kelly Baty, Glen Rubis: Loudoun County Department of Building and Development, 703-777-0397

Website: <http://www.loudoun.gov/b&d/water.htm#water>

Metric/Result: All of the WRMP activities are ongoing and have not been operated long enough to assess appropriate metrics or efficacy of the efforts.

1.05 Stream assessments

Activity Type: Data, study or resource

Lead Organization: Loudoun County Building & Development

Description: Component of WRMP (see also 1.04 and 4.11): This future task of the WRMP to include assessment of county streams probably via a rapid stream assessment technique. (Details are to be determined.)

Partners/others: USEPA

Timeframe: est. 2006 - 2007

Cost:

Contact: Dennis Cumbie, Kelly Baty, Loudoun County Department of Building and Development, 703-777-0397

Website: <http://www.loudoun.gov/b&d/water.htm#water>

Metric/Result: All of the WRMP activities are ongoing and have not been operated long enough to assess appropriate metrics or efficacy of the efforts.

1.06 Wetlands Mapping and Inventory

Activity Type: Data, study or resource

Lead Organization: Loudoun County Building & Development

Description: Starting in the eastern part of the county, east of the Bull Run Fault, which approximately parallels Highway 15, wetlands are being mapped and delineated where possible. A wetlands layer will be created in the county's Geographic Information System to house new and revised wetlands information. The wetlands will be investigated from the county hydric soil information (see Hydric Soil Map <http://www.loudoun.gov/images/maps/soils.jpg>)

Partners/others:

Timeframe: In progress

Cost:

Contact: Alex Blackburn or Kelly Baty, Loudoun County Department of Building and Development, 703-777-0397

Website: <http://www.loudoun.gov/b&d/enviro.htm#wetlands>

Metric/Result:

1.07 Catoctin Creek TMDL Implementation Plan - Homeowner Component

Activity Type: Data, study or resource

Lead Organization: Loudoun County Health Department/DCR

Description: Implementation of the residential component of the Catoctin Creek TMDL Implementation Plan is being funded annually with 319 Grant funds from DCR to LCHD to work specifically with homeowners in the Catoctin Creek watershed. Homeowners in this watershed are provided financial and technical assistance for the repair and/or replacement of failing on-site sewage disposal systems or straight pipes. The plan also provides education to homeowners on current on-site sewage disposal system regulations, identification of malfunctioning systems, as well as proper system operation and maintenance.

Partners/others: DCR

Timeframe: 1 - 2 year timeline

Cost:

Contact: James Mackie, LCHD, 703-737-8931, jmackie@loudoun.gov

Website: <http://www.co.loudoun.va.us/health/catoctin.htm>

Metric/Result:

1.08 Chemical Characteristics and Groundwater Level Data

Activity Type: Data, study or resource

Lead Organization: Loudoun County Sanitation Authority

Description: Chemical Characteristics and Groundwater Level Data available upon request from LCSA. Not currently in published format.

Partners/others:

Timeframe: ongoing

Cost:

Contact: Todd Danielson, Community Systems Manager, Loudoun County Sanitation Authority (LCSA), 703-771-1095, todd.danielson@lcsa.org

Website: <http://www.lcsa.org/>

Metric/Result:

1.09 Loudoun Soil and Water Conservation District Agricultural BMPs

Activity Type: Data, study or resource

Lead Organization: Loudoun Soil & Water Conservation District

Description: LSWCD works with landowners to install agricultural best management practices (BMP) to minimize non-point source pollution from agricultural sources in Loudoun County. Technical and financial assistance is available to landowners from the Virginia Agricultural BMP Cost-Share & Tax Credit Program and the USDA-Conservation Reserve Enhancement Program(CREP).

Partners/others: VDCR, NRCS

Timeframe: 20 years, ongoing

Cost:

Contact: LSWCD Staff, Loudoun Soil and Water Conservation District, 703 777-2075 ext. 104

Website: <http://loudoun.vaswcd.org>

Metric/Result: Measurements for nutrient reduction, soil loss, acres benefited , units installed, and others parameters are available for over 20 years of data for Ag BMPs like fencing, reforestation, livestock water systems and others. Please contact Pat McIlvaine for more info.

1.10 Catoctin Creek TMDL Implementation Plan - Agricultural Component

Activity Type: Data, study or resource

Lead Organization: Loudoun Soil & Water Conservation District/DCR

Description: Implementation of the agricultural component of the Catoctin Creek TMDL Implementation Plan is being funded annually with 319 Grant funds from DCR to LSWCD to work specifically with landowners in the Catoctin Creek watershed. Landowners in this watershed are provided financial and technical assistance for the installation of targeted agricultural bmps, and education programs that encourage landowners to exclude livestock access to Catoctin Creek and its tributaries.

Partners/others: DCR

Timeframe: 1.5 years into a 5 year Timeline for the Implementation Plan, with annual grant contract agreements

Cost:

Contact: LSWCD Staff, Loudoun Soil and Water Conservation District, 703 777-2075 ext. 104

Website: <http://loudoun.vaswcd.org>

Metric/Result:

1.11 Loudoun Wildlife Conservancy (LWC) Benthic Stream Monitoring -- Administrative Activities

Activity Type: Data, study or resource

Lead Organization: Loudoun Wildlife Conservancy

Description: Protocols and Guidelines -- LWC has collaborated with LWW and DEQ to develop protocols to help standardize benthic macro invertebrate and stream habitat monitoring activities in Loudoun County including the following:

- LWC Benthic Macro invertebrate Monitoring Operations Manual - 2005 Update
- LWC Stream Habitat Monitoring Operations Manual - 2005 Update
- LWC Quality Assurance Program Plan (QAPP) for benthic stream monitoring - 2005

Partners/others: LWA

Timeframe: 1997 - Ongoing

Cost: 200 person hours

Contact: Darrell Schwalm, Loudoun Watershed Watch, Schwalmie@aol.com

Website: <http://www.loudounwildlife.org/>

Metric/Result: Metric - None

1.12 Loudoun Watershed Watch (LWW) Bacteriological Stream Monitoring -- Administrative Activities

Activity Type: Data, study or resource

Lead Organization: Loudoun Watershed Watch

Description: Protocols and Guidelines -- LWW has developed in collaboration with LWC, DEQ and County authorities' guidelines and protocols to help standardize bacteriological and other stream monitoring activities in Loudoun County including the following:

- Loudoun County Comprehensive Stream Monitoring Strategy -- Plan Design and Guidelines - prepared in 2004
- Catoctin Watershed Project Bacterial Monitoring Manual of Operations -- prepared in 2004

Partners/others: LWC

Timeframe: 2004 - Ongoing

Cost: 300 person hours

Contact: Darrell Schwalm, Loudoun Watershed Watch, Schwalmie@aol.com

Website: <http://www.loudounwatershedwatch.org>

Metric/Result: Metric - None

1.13 Loudoun Watershed Watch (LWW) State and Regional Program Coordination

Activity Type: Data, study or resource

Lead Organization: Loudoun Watershed Watch

Description: *State Programs Coordination* - LWW provides reviews of state programs and activities that impact on Loudoun watersheds and provides citizen data, technical guidance and coordination that include the following:

- Water Quality Integrated Report - LWW provides citizen stream monitoring data to DEQ on an annual basis for inclusion in the semi-annual report on the water quality status of state streams;
- State Stream Monitoring Sites - LWW recommends additional stream monitoring sites for follow-up monitoring when citizen data suggests poor stream health conditions; and
- TMDL Assessment - LWW provides DCR with citizen water quality monitoring data to help assess progress in the implementation of the Catoctin Creek TMDL.

Regional Coordination

- LWW is one of the founding members of the Virginia Citizens for Water Quality, and works to enhance citizen participation in stream stewardship activities on a statewide basis; and
- LWW participates in regional conferences and workshops to enhance citizen watershed stewardship programs in the Chesapeake Bay watershed.

Partners/others:

Timeframe: 2003 - Ongoing

Cost: 50 person hours per year

Contact: Darrell Schwalm, Loudoun Watershed Watch, Schwalmie@aol.com

Website: <http://www.loudounwatershedwatch.org>

Metric/Result:

1.14 Precipitation monitoring

Activity Type: Data, study or resource

Lead Organization: National Oceanic and Atmospheric Administration/NWS

Description: Component of WRMP (see also 1.04 and 4.11): Several long-term sites monitoring precipitation on a daily basis. Complete period of record data sets available for purchase through NCDC. USGS monitors rainfall (non-frozen) at two sites (Lovettsville and Plains of Raspberry) with near real-time provisional data on USGS web site.

Partners/others: also USGS

Timeframe: 1930 - present

Cost:

Contact: National Climatic Data Center

Website: <http://www.ncdc.noaa.gov/oa/ncdc.html>

Metric/Result: All of the WRMP activities are ongoing and have not been operated long enough to assess appropriate metrics or efficacy of the efforts.

1.15 Goose Creek Vulnerability Analysis

Activity Type: Data, study or resource

Lead Organization: The Piedmont Environmental Council

Description: In 2002 & 2003 PEC and the Goose Creek Association in consultation with the Center for Watershed Protection, completed its study of the Goose Creek watershed, covering both Loudoun and Fauquier counties. The project assessed the current and future health of the watershed on a subwatershed basis, with a field-verified, in-depth analysis of three subwatersheds and recommendations to improve or maintain their health.

Partners/others: GCA, CWP

Timeframe: January - December 2003

Cost: At least \$150,000 including volunteer time, matching funds, and other contributions.

Contact: Gem Bingol, Piedmont Environmental Council, gbingol@pecva.org

Website: <http://www.pecva.org/conservation/funds/goosecreekfund.asp>

Metric/Result:

1.16 Protecting Human Health project—Phase 1 (currently in preparation)

Activity Type: Data, study or resource

Lead Organization: The Piedmont Environmental Council

Description: As a continuation of the work PEC initiated with the Goose Creek Vulnerability Analysis, PEC is now preparing to start a project for the Town of Leesburg's subwatersheds entitled "Protecting Human Health and Water Quality in the Town of Leesburg and its Watersheds." The project is due to begin and complete in calendar year 2006.

Partners/others: Leesburg

Timeframe: January - December 2006

Cost: \$60,000 For phase I of Project.

Contact: Gem Bingol, Piedmont Environmental Council, gbingol@pecva.org

Website: <http://www.pecva.org/conservation/funds/goosecreekfund.asp>

Metric/Result:

1.17 Groundwater level monitoring.

Activity Type: Data, study or resource

Lead Organization: U.S. Geological Survey

Description: Component of WRMP (see also 1.04 and 4.11): Groundwater level monitoring with near real-time provisional data posted to USGS web site. Two wells: one on top of Short Hill in north-west Loudoun and one in eastern Leesburg.

Partners/others: ICPRB

Timeframe: 1963 - present

Cost:

Contact: Mark R. Bennett, U.S. Geological Survey, 804-261-2643, mrbenet@usgs.gov

Website: <http://va.water.usgs.gov/Loudoun/data.htm>

Metric/Result: All of the WRMP activities are ongoing and have not been operated long enough to assess appropriate metrics or efficacy of the efforts.

1.18 Stream stage (water level) & discharge (flow) continuous monitoring.

Activity Type: Data, study or resource

Lead Organization: U.S. Geological Survey/LCB&D

Description: Component of WRMP (see also 1.04 and 4.11): Stream gages at 10 locations in major streams in Loudoun County measure stage and discharge. Two sites with long-term records and 8 new sites added in 2001. Near real-time provisional data posted to USGS web site. Nine sites operated by USGS and one by VADEQ and joint funding from Loudoun County.

Partners/others: LCB&D, USGS, VADEQ, USEPA

Timeframe: 1908-present

Cost:

Contact: Dennis Cumbie, Loudoun County Department of Building and Development, 703-777-0397

Website: <http://www.loudoun.gov/b&d/water.htm#water>

Metric/Result: All of the WRMP activities are ongoing and have not been operated long enough to assess appropriate metrics or efficacy of the efforts.

1.19 Bacteria TMDL Study - Goose Creek Watershed

Activity Type: Data, study or resource

Lead Organization: Virginia Department of Environmental Quality

Description: Goose Creek Watershed Bacteria TMDL Study

Partners/others: VDCR

Timeframe:

Cost:

Contact: Bryant Thomas, Virginia Department of Environmental Quality, 703-583-3843, bhthomas@deq.virginia.gov

Website: <http://www.deq.virginia.gov/tmdl/apptmdls/potrvr/goose.pdf>

Metric/Result:

1.20 Bacteria TMDL Study - Limestone Branch Watershed

Activity Type: Data, study or resource

Lead Organization: Virginia Department of Environmental Quality

Description: Limestone Branch Bacteria TMDL Study

Partners/others: VDCR

Timeframe:

Cost:

Contact: Bryant Thomas, Virginia Department of Environmental Quality, 703-583-3843, bhthomas@deq.virginia.gov

Website: <http://www.deq.virginia.gov/tmdl/apptmdls/potrvr/lstone.pdf>

Metric/Result:

1.21 Bacteria TMDL Study - Piney Run Watershed

Activity Type: Data, study or resource

Lead Organization: Virginia Department of Environmental Quality

Description: Piney Run Bacteria TMDL Study

Partners/others: VDCR

Timeframe:

Cost:

Contact: Bryant Thomas, Virginia Department of Environmental Quality,
703-583-3843, bhthomas@deq.virginia.gov

Website: <http://www.deq.virginia.gov/tmdl/apptmdls/potrvr/pineyrun.pdf>

Metric/Result:

1.22 Benthic TMDL Study - Goose Creek and Little River Watershed

Activity Type: Data, study or resource

Lead Organization: Virginia Department of Environmental Quality

Description: Goose Creek and Little River Benthic TMDL Studies

Partners/others: VDCR

Timeframe:

Cost:

Contact: Bryant Thomas, Virginia Department of Environmental Quality,
703-583-3843, bhthomas@deq.virginia.gov

Website: <http://www.deq.virginia.gov/tmdl/apptmdls/potrvr/catocffc.pdf>

<http://www.deq.virginia.gov/tmdl/apptmdls/fcadden.pdf>

Metric/Result:

1.23 Bacteria TMDL Study - Catoctin Creek Watershed

Activity Type: Data, study or resource

Lead Organization: Virginia Department of Environmental Quality/VDCR

Description: Catoctin Creek Watershed Bacteria TMDL Study and Implementation Plan

Partners/others: VDCR

Timeframe: August 2004 - August 2009

Cost: \$1,718,000 (Approx. \$344,000/year)

Contact: Bryant Thomas, Virginia Department of Environmental Quality,
703-583-3843, bhthomas@deq.virginia.gov

Website: <http://www.deq.virginia.gov/tmdl/apptmdls/potrvr/goosebc.pdf>

Metric/Result: At an estimated cost of \$344,000/year for a five year period, the Implementation Plan seeks to address agricultural and residential concerns in the Upper South Fork Catoctin Creek, Lower South Fork Catoctin Creek, North Fork Catoctin Creek, and Catoctin Creek Watersheds. The Implementation Plan seeks to execute 100% implementation by 8/1/09 and achieve 0% exceedances of the fecal coliform geometric mean water quality standard in all watersheds by 8/1/14, facilitating delisting from the 303(d) impaired waters list.

There are approximately 269 miles of perennial and intermittent stream in the four subwatersheds in the Catoctin Creek drainage. The length of fencing required on perennial streams in the Catoctin Creek watershed is approximately 32 miles of fence. Additionally, 126 full livestock exclusion systems (83 cattle and 43 equine) need to be implemented to insure full exclusion of livestock from the streams. The total costs also will establish 76 hardened crossings, correct 20 straight pipes, and provide technical assistance for these projects.

1.24 Forest Resources

Activity Type: Data, study or resource

Lead Organization: Virginia Department of Forestry

Description: The Virginia Department of Forestry provides forest resource evaluation including the following: forest management planning, forest stewardship planning, reforestation of timberland, forest insect and disease monitoring and assistance, monitoring of timber harvest operations

Partners/others:

Timeframe: Continuous

Cost:

Contact: Kelley Wagner, VDOF, 703.777.0457

Website: <http://www.dof.virginia.gov>

Metric/Result:

1.25 Loudoun County Basemapping

Activity Type: Data, Study, or resource

Lead Organization: Loudoun County Office of Mapping and Geographic Information

Description: The office produces and distributes maps and mapped data sets, assigns addresses, approves all street names. Maps and data about property, floodplains, soils, topography, zoning, streets, addresses and other topics are available. The office maintains a public information counter where anyone can use the GIS and the county's Land Management Information System (LMIS) to find current land information maintained by various county offices. Aerial mapping is performed annually. On-line mapping is available.

Partners/others:

Timeframe: Continuous

Cost: \$1.8m annual Staff: 23.8 FTE

(<http://inetdocs.loudoun.gov/pio/docs/budget/fy2006/fy06adoptedfisc/executivesummar/13ftefulltimeeq/13ftefulltimeeq.pdf>)

Contact: Office of Mapping and Geographic Information, 1 Harrison St., S.E., 2nd Floor, P.O. Box 7000, Leesburg, VA 20177. Phone: 703-771-5778, Fax: 703-771-5075; mapping@loudoun.gov

Website: <http://www.loudoun.gov/omagi/>

Metric/Result:

1.26 Fairfax Water

Activity Type: Data, study or resource (added to inventory 6/27/06)

Lead Organization: FW

Description: Fairfax Water (FW) – FW conducted a Source Water Assessment on portions of the Occoquan and Potomac watersheds, including a 107 square mile area upstream of the intake defined by the Broad Run and Sugarland Run tributaries to the Potomac River. The purpose of the Assessment was to collect available information on land use activities and potential sources of contamination, including land use, point source discharges, hazardous waste sites, and other types of facilities that may affect the quality of raw water at FW's water supply intakes.

Partners/others:

Timeframe: 2001-2002

Cost:

Contact: Traci Kammer Goldberg, Chief Source Water Planning and Protection, Fairfax Water, 703-289-6306

Website: <http://www.fairfaxwater.org>

Metric/Result:

2. Education, Outreach, or Project

2.01 Goose Creek Association Educational Workshops

Activity Type: Education, outreach or project

Lead Organization: Goose Creek Association

Description: Goose Creek Association organizes educational workshops for landowners on a number of land use issues concerning watershed protection and best management practices. Workshops have been organized for farmers as well as residential landowners.

Partners/others:

Timeframe: Periodic

Cost: \$1,500 per program

Contact: Nancy West, Goose Creek Association, noblewest@verizon.net

Website: <http://www.goosecreekassn.org/>

Metric/Result:

2.02 Community Educational Programs

Activity Type: Education, outreach or project

Lead Organization: Loudoun County Cooperative Extension

Description: The mission of Loudoun Cooperative Extension is to provide educational information and resources to Loudoun County citizens through an educational process which uses scientific, research-based knowledge, to address relevant issues and needs to help them improve their lives. It serves as the primary source of assistance for agriculture and horticulture production within the County. Loudoun Cooperative Extension is an educational partnership between the U. S. Department of Agriculture, Virginia Tech, Virginia State Universities (Land Grant Universities), and local government. Trained Extension personnel draw upon the knowledge and resources of specialists and research scientists from the universities. The department offers educational programs designed to meet the needs of the Loudoun community in Agriculture, Horticulture, Family & Community Sciences, and 4-H Youth Development. Local program delivery is also enhanced by hundreds of volunteers who receive training by Extension personnel.

Related programming goals:

- Provide farm management educational assistance, training, BMPs and crop diagnostic services to local landowners.
- Provide educational programming, BMPs and responsive consulting to commercial horticultural businesses.
- Provide environmental education programs and diagnostic services for homeowners. Coordinate the Master Gardener adult environmental education and outreach program.
- Provide character development, leadership and life skills educational programming to youth and adults through a variety of the 4-H program models(including water quality and environmental and natural resource protection).

Partners/others:

Timeframe: Continuous

Cost:

Contact: C.Corey Childs, Extension Agent, Virginia Cooperative Extension - Loudoun Unit, 703-777-0373, cchilds@vt.edu

Website: <http://www.co.loudoun.va.us/extension/home.htm>

Metric/Result: Virginia Cooperative Extension-Loudoun office will provide BMP and other applicable related information to land owners through individual on site consultations, group meetings, publications and media items as appropriate, and will serve as a liaison to cooperating organizations or agencies for property owners in the watershed area. Information will be included in a minimum of 2 sponsored educational seminars a year.

2.03 LCSA Water Forum

Activity Type: Education, outreach or project

Lead Organization: Loudoun County Sanitation Authority

Description: On December 12, 2005 more than 50 professionals in Loudoun County, who work in the field of water quality and supply management, came together to discuss the many new water resource

management requirements that Loudoun faces in the near future. A second LCSA Water Forum was held on February 13, 2006.

Partners/others:

Timeframe: December 2005 - February 2006

Cost:

Contact: Todd Danielson, Community Systems Manager, Loudoun County Sanitation Authority (LCSA), 703-771-1095, todd.danielson@lcsa.org

Website: <http://www.lcsa.org/WaterForum.cfm>

Metric/Result:

2.04 Loudoun County Environmental Indicators Project (LEIP)

Activity Type: Education, outreach or project

Lead Organization: Loudoun County

Description: GWU Loudoun County Environmental Indicators Project (LEIP) effort was spearheaded by Subijoy Dutta, visiting scholar with George Washington University, with support from U.S. EPA and local foundations. A water quality summit was held on May 22, 2002 at the GWU, Loudoun County Campus with the purpose and objective identified as: "To protect and improve the water quality of Loudoun County by providing a level and transparent platform for active interaction among all of the stakeholders in Loudoun watersheds".

Partners/others: EPA, Claude Moore Charitable Foundation

Timeframe: 2002 - Ongoing

Cost:

Contact: na

Website: <http://www.gwu.edu/~leip/>

<http://www.gwvirginia.gwu.edu/news/02claudemoore.html>

<http://www.gwvirginia.gwu.edu/news/02leipwater.html>

Metric/Result:

2.05 Storm drain marking

Activity Type: Education, outreach or project

Lead Organization: Loudoun Soil & Water Conservation District

Description: LSWCD assist localities with storm drain marking projects. Staff will assist with the project logistics and the locality must incur the cost of materials. LSWCD is currently assisting the Town of Leesburg with a storm drain marking project to meet mandates of its NPDES Plan.

Partners/others:

Timeframe: 2002 - Ongoing

Cost:

Contact: LSWCD Staff, Loudoun Soil and Water Conservation District, 703 777-2075 ext. 104

Website: <http://loudoun.vaswcd.org>

Metric/Result: For Information on coverage of storm drain stenciling efforts contact the Town of Leesburg, Nathaniel Ogedegbe

2.06 Watershed Education Program

Activity Type: Education, outreach or project

Lead Organization: Loudoun Soil & Water Conservation District

Description: Student Field Trips, Classroom programs, Riparian buffer planting projects, other activities

Partners/others:

Timeframe: 20 years, ongoing

Cost:

Contact: LSWCD Staff, Loudoun Soil and Water Conservation District,

703 777-2075 ext. 104

Website: <http://loudoun.vaswcd.org>

Metric/Result: LSWCD provides information related to soil & water conservation issues through education programs, newsletters, newspaper articles and radio to all Loudoun County residents/citizens/schools.

2.07 LWW Community Outreach and Educational Activities - Family Stream Day

Activity Type: Education, outreach or project

Lead Organization: Loudoun Watershed Watch

Description: Annual Loudoun Family Stream Day -- LWW organizes a collaborative annual event with other County agencies and organization called the Loudoun Family Stream Day to coincide with National Stream Monitoring Week in October. The event features a number of educational "stations" sponsored by different organizations that provide interactive educational materials on watershed stewardship themes. The event has been held at different sites around the county and is well attended especially by school children and their families.

Partners/others: LWC, Keep Loudoun Beautiful

Timeframe: 2003 - Ongoing

Cost: 200 person hours per year

Contact: Samantha Villegas, samantha.villegas@lcsa.org
or Darrell Schwalm, schwalmie@aol.com

Website: <http://www.loudounwatershedwatch.org/catocin/>

Metric/Result:

2.08 LWW Community Outreach and Educational Activities - Website

Activity Type: Education, outreach or project

Lead Organization: Loudoun Watershed Watch

Description: Loudoun Watershed Website -- LWW has created and maintains a website (www.loudounwatershedwatch.org) that provides a variety of educational materials for the public including:

- Introductory materials on Loudoun watersheds and stream health and stewardship needs;
- Reports on the quality and health of Loudoun County streams;
- Stream monitoring data for the Catocin Creek;
- Information regarding DEQ programs and activities that impact Loudoun County;
- Information regarding community stewardship and educational events such as Family Stream Day; and
- Fun and educational materials for youth.

Partners/others: LWC, PEC

Timeframe: 2003 - Ongoing

Cost: 200 person hours per year

Contact: David Ward, LWC Volunteer, dward@earthwardconsulting.com

Website: <http://www.loudounwatershedwatch.org/catocin/>

Metric/Result:

2.09 LWW Educational Materials

Activity Type: Education, outreach or project

Lead Organization: Loudoun Watershed Watch

Description: Educational Materials -- LWW has developed a number of educational reports, brochures, pamphlets, PowerPoint presentations, and other materials regarding the status of water resources in Loudoun County and watershed stewardship needs that are available to the public. These educational materials include:

- The "2002 State of Loudoun Streams Report" which used state and citizen stream monitoring

data to assess the water quality and stream health status of the major watersheds in Loudoun County;

- The "2005 State of Loudoun Streams Report" that updated the 2005 report including new information on non-point pollution sources impacting Loudoun Streams based on DEQ's TMDL studies in Loudoun County;
- A "Citizen's Guide to Starting a Local Watershed Group"
- A LWW Bookmark outlining LWW activities and how to participate in stewardship activities'
- A variety of educational materials on water quality and stewardship needs in the Catoctin Creek watershed including:
 - ❖ Catoctin Creek Brochure about Catoctin Creek as a community asset.
 - ❖ Catoctin Water Quality Report Card
 - ❖ Benefits of Clean Water
 - ❖ Fecal Bacteria in Stream Water: Public Health Considerations
 - ❖ Catoctin Watershed Project T-Shirts with the project logo for Girl Scouts, Boy Scouts and other participants to the Catoctin Stream stewardship events.

Partners/others:

Timeframe: 2003 - Ongoing

Cost:

Contact: Darrell Schwalm, Loudoun Watershed Watch, Schwalmie@aol.com

Website: <http://www.loudounwatershedwatch.org>

Metric/Result: No specific measurements applicable.

2.10 Loudoun Central Reserve

Activity Type: Education, outreach or project

Lead Organization: The Piedmont Environmental Council

Description: Loudoun Central Reserve. PEC has recognized the importance and value of Goose Creek and its reservoirs as a critical drinking water resource. To that end, PEC met and worked with community organizations and county agencies to educate the public and promote protection of the area. PEC also sponsored bus trips to acquaint the public with the area and the rich resource base (both natural and cultural) that it represents. PEC is interested in continuing to work with interested County agencies toward protection of the reservoir watersheds.

Partners/others:

Timeframe: January - September 2003

Cost: \$7,250 one time project

Contact: Gem Bingol, Piedmont Environmental Council, gbingol@pecva.org

Website:

<http://www.pecva.org/counties/loudoun/landuse/landuse/centralreserve/centralreserve.asp>

Metric/Result:

2.11 PEC BMPs and Land Conservation General Efforts

Activity Type: Education, outreach or project

Lead Organization: The Piedmont Environmental Council

Description: PEC actively promotes land conservation in Loudoun County, and land conservation is half of the programmatic focus of PEC's region-wide effort. In the Goose Creek Watershed PEC manages the James M. Rowley Goose Creek Land Conservation Fund to promote BMPs and conservation efforts. PEC's land conservation staff works with the committee members to identify opportunities for conservation and promote those potentials with technical and financial support. In 2003, the Rowley Fund sponsored its 2nd Farm Tour for local farm managers to highlight the value of BMPs for protecting water quality, and to show the concurrent benefits to the farmer. PEC is planning another farm tour in the Catoctin watershed to support the Catoctin TMDL.

Partners/others:

Timeframe: Ongoing

Cost: \$100,000 (A conservative, average estimate of annual program costs.)

Contact: Gem Bingol, Piedmont Environmental Council, gbingol@pecva.org

Website: <http://www.pecva.org/counties/loudoun/>

Metric/Result: - Approximately 1040 acres of wetlands in Loudoun County protected by Conservation easement. (PEC data, 2006) Approximately 166 stream miles are protected by conservation easements in Loudoun County. (PEC data, 2006)

2.12 PEC Reducing Nutrient Pollution Project

Activity Type: Education, outreach or project

Lead Organization: The Piedmont Environmental Council

Description: "Reducing Nutrient Pollution from Loudoun County's Urban Centers: A Collaborative Project to Educate Youth, their Families, and Community Leaders in Purcellville, Leesburg and Sterling." This project started in May of 2004 with Park View High School working on a project in Sterling at Claude Moore Park to improve drainage problems through raingarden plantings at the Farm Museum parking lot. Unable to work out a schedule with Leesburg schools to fit the grant timeframe, we completed the last two segments of the project in Purcellville with Loudoun Valley High School by doing riparian plantings along the South Fork of Catoctin Creek in the Purcellville Nature Park. In the last segment of the project, we also teamed up with the Town of Purcellville more directly to provide plantings that could also potentially qualify as wetland mitigation for their proposed new reservoir. This project has been an extremely successful collaboration which is ongoing in Purcellville. This project was funded with \$10,000 from DCR and \$6,000 from the Virginia Environmental Endowment (VEE). The balance of the match was made up of in-kind donations. We have requested additional funding from EPA to continue the work there, and to use our experience to develop a model for working in the field with other teachers and local governments and agencies on community water quality related issues.

Partners/others: Purcellville, Leesburg, and Sterling

Timeframe: October 2003 - December 2005

Cost: \$20,000 (Grant and match for project through December 2005)

Contact: Gem Bingol, Piedmont Environmental Council, gbingol@pecva.org

Website: <http://www.pecva.org/counties/loudoun/>

Metric/Result:

2.13 Educational Programs

Activity Type: Education, outreach or project

Lead Organization: Virginia Department of Forestry

Description: Education regarding riparian areas, forest health, wildland fire suppression and prevention, TreeCity USA using classroom programs, planting, evening lectures, and other events.

Partners/others:

Timeframe: Continuous

Cost:

Contact: Kelley Wagner, VDOF, 703.777.0457

Website: <http://www.dof.virginia.gov>

Metric/Result:

2.14 Fairfax Water

Activity Type: Education, outreach or project (*added to inventory 6/27/06*)

Lead Organization: FW

Description: Fairfax Water (FW) – The FW Water Supply Stakeholder Outreach Program makes grants available to qualified organizations that undertake water supply education or watershed protection projects. Grants may be in the form of funds, technical support, or equipment. As an area lying within Fairfax Water's service area and watershed (Potomac or Occoquan), projects or activities from all of

Loudoun County are eligible to participate. Grants of up to \$5,000 per year are available. For more information on the grant cycle, see FW's grant application guidelines and forms.

Partners/others:

Timeframe: 2000 - ongoing

Cost: Annually funded

Contact: Traci Kammer Goldberg, Chief Source Water Planning and Protection, Fairfax Water, 703-289-6306

Website: <http://www.fairfaxwater.org>

Metric/Result:

3. Land use planning, Policy or Program

3.01 EPA Tributary Strategies

Activity Type: Land use planning, policy or program

Lead Organization: U.S. Environmental Protection Agency

Description: As part of the Chesapeake 2000 Agreement, the Tributary Strategies are river-specific cleanup strategies that detail the "on-the-ground" actions needed to reduce the amount of nutrients and sediment flowing into the Chesapeake Bay. Tributary Strategies are not mandatory or regulatory but rather catalyze voluntary action and coordination, and help decision makers allocate funding at state level. In August 2004 the Tributary Strategies revised point source control levels in the Tributary Strategy Plans and now also have a direct relationship to the nutrient permit regulations presented to and adopted by the State Water Control Board.

The Strategies "provide a framework that will evolve over time to chart the most efficient and effective course to a clean Bay. As they mature, the strategies will detail what funding initiatives are needed, what policies must be implemented and what technologies need to be developed to expedite Bay restoration. As technology improves, new innovations will be incorporated into the existing plans, allowing Bay/Program partners to find new ways to reduce our collective impact on the Bay."

Loudoun County has participated in the Tributary Strategy Program meetings which began in December 2003. In April 2004, Secretary of Natural Resources, W. Taylor Murphy brought forward the Tributary Strategies in which Virginia would participate in the Chesapeake Bay Program and work towards reductions in waste loadings to the streams and lakes throughout Virginia. Reports from this effort are posted at www.naturalresources.virginia.gov.

One component of the program is the development of "input decks" for watershed and communities. These are tables of waste loadings listed by specific BMPs ranging from agricultural crop and animal management to urban stormwater ponds. The waste loads include nitrogen, phosphorous and sediments. The term "input" refers to legacy reference to punch card input file of waste loading values to the mass balance model for the Chesapeake Bay.

During the period 2004-2005, stakeholders from Northern Virginia met with DCR to refine the individual contributions in each of the BMPs. This resulted in the 85-page January 2005 "Chesapeake Bay Nutrient and Sediment Reduction Tributary Strategy" report http://www.naturalresources.virginia.gov/WaterQuality/FinalizedTribStrats/ts_statewide_All.pdf. Subsequently in March 2005, a 129-page report for Shenandoah and Potomac River Basins was published (<http://www.naturalresources.virginia.gov/WaterQuality/FinalizedTribStrats/shenandoah.pdf>).

Partners/others: LCB&D, LCGS, VDCR, VDEQ, VSWCD

Timeframe: April 2004 - present

Cost:

Contact: John Kennedy, Virginia Department of Environmental Quality, jmkennedy@deq.virginia.gov

Website: <http://www.naturalresources.virginia.gov>
<http://www.deq.state.va.us/bay>
<http://www.snr.state.va.us/WaterQuality/index.cfm>
<http://www.chesapeakebay.net/tribtools.htm>
<http://www.naturalresources.virginia.gov/WaterQuality/FinalizedTribStrats/shenandoah.pdf>
(March 2005 - Chesapeake Bay Nutrient and Sediment Reduction Tributary Strategy for the Shenandoah and Potomac River Basins)
Metric/Result: See Appendixes A and B for Loudoun County Input Tables.

3.02 Fairfax County Watershed Management Plan for Cub Run/Bull Run

Activity Type: Land use planning, policy or program

Lead Organization: Fairfax County DPWES

Description: Fairfax County has initiated a project to develop comprehensive watershed management plans for each of the 30 watersheds in the county. The management plan for Cub-Run and Bull Run, part of which are in Loudoun County, began in 2004 and is expected to go before the Fairfax Board of Supervisors in late 2006. The overall goal of watershed management planning is to protect and restore streams and their related natural resources. This planning process includes developing project goals and objectives with community input, evaluating current stream conditions, anticipating future conditions and needs, evaluating current plans and policies, implementing measures in a cost-effective manner, and continuous monitoring and assessment of the overall success of the plan. Community involvement is a vital component for developing and implementing a successful plan and will be key to galvanizing community support and buy-in for the implementation of the watershed plan.

Partners/others:

Timeframe: January 2004 - September 2006

Cost:

Contact: Matt Meyers, Fairfax County DPWES, Stormwater Planning Division,
703-324-5651, matthew.meyers@co.fairfax.va.us

Website: <http://www.fairfaxcounty-watersheds.net/htmls/public/watershed.aspx?indx=18>

Metric/Result:

3.03 Preserving Scenic Buffers on Goose Creek

Activity Type: Land use planning, policy or program

Lead Organization: Goose Creek Scenic River Advisory Committee

Description: The Goose Creek Scenic River Advisory Committee works to preserve scenic buffers on Goose Creek through voluntary donations of buffers. The permanent scenic easement typically permits no removal of flora (except for noxious weeds), no disturbance of earth, no new impervious surfaces (pavement, driveways, buildings, etc.). Enhancement of riparian buffers is allowed, with the advice of the forester, for native species only. "Native" Trails are permitted, but only under the supervision of County Parks and Recreation. No vehicles or domestic animals permitted on trails within the 300' buffer.

Partners/others:

Timeframe: Ongoing

Cost:

Contact: Helen Casey, Goose Creek Scenic River Advisory Committee,
GooseCreek2002@msn.com

Website: <http://www.co.loudoun.va.us/advisory/gcsrab.htm>

Metric/Result: Miles of 300' Scenic Buffer (Goose Creek and Beaver Dam Reservoir) - 25 linear miles estimated in permanent easement, either with the County or with an environmental group (VOF, etc.) as of May 2006.

3.04 Water Resources Technical Advisory Committee (WRTAC)

Activity Type: Land use planning, policy or program

Lead Organization: Loudoun County Water Resources Technical Advisory Committee

Description: The Water Resources Technical Advisory Committee was created by the Board of Supervisors in April 2001 to assist and advise the county in the development, implementation, and evaluation of water resources-related programs. The current committee of eleven members was appointed by the Board in November 2004. County departments of B&D, Planning, Health, and General Services, as well as from LCSA and LS&WCD provide staff support to the Committee.

Partners/others:

Timeframe: April 2001 - Ongoing

Cost:

Contact: Glen Rubis, Loudoun County Department of Building and Development, Engineering Department, 703-777-0397.

Website: <http://www.loudoun.gov/advisory/water.htm>

Metric/Result:

3.05 Forest Resources

Activity Type: Land use planning, policy or program

Lead Organization: Loudoun County Building & Development

Description: The county provides forest resource evaluation including the following: tree canopy evaluation and advice; riparian buffer technical support and guidance regarding specie selection, site preparation, establishment, protection and maintenance; tree conservation plan review; forest insect and disease monitoring and counsel; review of developmental impact on forest resources in conjunction with the county's Environmental Review Team (ERT); monitoring of all mountainside timber harvest operations; development of a countywide forest type map and forest inventory; development of a tree ordinance; determinations regarding all tree save concerns; and training regarding tree conservation in the development process.

Partners/others:

Timeframe: Ongoing

Cost:

Contact: Dana Malone, Loudoun County Arborist 703-777-0397

Website: <http://www.loudoun.gov/b&d/home.htm>

Metric/Result:

3.06 Future Environmental Initiatives

Activity Type: Land use planning, policy or program

Lead Organization: Loudoun County Building & Development

Description: Future efforts planned by the Department of Building and Development to monitor and protect the valuable natural resources of Loudoun County include: Stream Assessment to determine the level of impairment to main rivers or streams in the county and the future writing of a Comprehensive Watershed Management Plan to investigate the 15 major watersheds in the county in coordination with the work already being performed by the Environmental and Historic Resources Program and the Water Resource Technical Advisory Committee.

Partners/others:

Timeframe: Future

Cost:

Contact: Kelly Baty, Loudoun County Department of Building and Development, 703-777-0397.

Website: <http://www.loudoun.gov/b&d/future.htm>

Metric/Result: Future metrics to be determined.

3.07 Loudoun County Erosion and Sediment Control Program

Activity Type: Land use planning, policy or program

Lead Organization: Loudoun County Building & Development

Description: The primary mission of the county's Erosion and Sediment Control Program is to minimize the degradation of properties, stream channels, water and other natural resources by establishing requirements for the control of soil erosion, sediment deposits and stormwater runoff.

Partners/others:

Timeframe: Ongoing

Cost: FY 2006 is approx \$1,523, 073 Note: The County's State DCR approved Alternative Inspection Program saves the County over \$750,000 per year in operating costs.

Contact: Stephen Kayser, Loudoun County Building & Development, Erosion & Sediment Control, 703-777-0397

Website: <http://www.loudoun.gov/b&d/home.htm>

Metric/Result: The Erosion and Sediment Control Program quantifies the following on a yearly basis: the total number of "Active" permitted projects, total grading permits issued, yearly E/S inspections, total County disturbed acreage and disturbed acreage within individual watersheds, number of violations including Notices to Comply and Stop Work Orders, number of Grading Permit applications and Land Development applications received and number of "Agreement In Lieu of Plans" for Single Family House construction received. In addition, the number of pre-construction meetings, citizen complaints and E/S bond release inspections are recorded. The E/S Program measures the Inspection component of the program by using an "Efficiency Ratio" which compares the total number of active projects to required number of inspections. Example: In year 2005, there were 11, 388 E/S site inspections, 3,188 total acres disturbed, average of 863 active weekly projects, 233 Notice to Comply violations, 12 Stop Work Orders and average weekly efficiency ratio of 90%. It should be noted that the County has a State DCR approved Alternative Inspection Program which allows construction projects to be "ranked" according to a set of environmental parameters. This separates "High" priority projects from "Low" priority projects and alters the required frequency of inspections saving the County over \$750,000 per year in operating costs alone.

3.08 Soil Survey

Activity Type: Land use planning, policy or program

Lead Organization: Loudoun County Building & Development

Description: The Department of Building and Development staff updates and maintains the soil survey for Loudoun County in accordance with national standards to remain valid with the United States Department of Agriculture. This includes field mapping to identify, classify and delineate soils units within the county in agreement of the federally approved legend, updating the National Soil Information System database and developing interpretations based on soil and landscape units. Updates and field verifications are then entered into the county's Geographic Information System and are available to the public through the county's Office of Mapping and Geographic Information. Specific mapping projects, such as Preliminary Soils Reviews, may be requested, for a fee, for parcels of land to better identify problems and make better land-use decisions.

Partners/others:

Timeframe: Ongoing

Cost:

Contact: Alex Blackburn or Ryan Reed, Loudoun County Department of Building and Development, Engineering Department, 703-777-0397.

Website: <http://www.loudoun.gov/b&d/enviro.htm#soil>

Metric/Result: All of these activities are ongoing and have not been operated long enough to assess appropriate metrics or efficacy of the efforts.

3.09 Strategy for Watershed Management Solutions

Activity Type: Land use planning, policy or program

Lead Organization: Loudoun County Building & Development

Description: The Loudoun Strategic Watershed Management Solutions (SWMS) was a collaborative initiative, undertaken from January to June 2006, to coordinate existing watershed efforts and define a

shared vision for managing Loudoun County's watersheds. A stakeholder group was convened by Loudoun County's Department of Building and Development and facilitated by the University of Virginia's Institute for Environmental Negotiation (IEN). Funding for the project was provided by the National Fish and Wildlife Foundation, U.S. Environmental Protection Agency, and Loudoun County.

The first step in the SWMS initiative was the formation of a broadly representative stakeholder group called the "SWMS Team." Drawing on recommendations from County staff and stakeholders interviewed, over 125 people were invited to participate in the collaborative SWMS Team. Invitees represented interests of federal, state, regional, local government (County and Towns), water supply, environmental and conservation groups, farming, business, development, and homeowner associations. Of those invited, approximately 68 people participated in the four SWMS Team meetings between February and June 2004, in which decisions were made by consensus.

The SWMS Team developed a detailed set of consensus recommendations for Loudoun County's watershed planning effort that are embodied in the SWMS Declaration of Cooperation (DOC). The Team made several key recommendations through the SWMS effort. First, the SWMS Team recommended that a balanced and broadly representative Steering Committee be established to provide a mechanism for collaborative decision-making that would allow for flexibility and change during the County's watershed planning process. In addition, the Team developed a vision and goals for the watershed planning process, suggested a two-phased approach to develop watershed plans, placed a strong emphasis on education and outreach, and made recommendations regarding potential funding mechanisms and the designation of a Watershed Coordinator as part of the effort. Lastly, SWMS Team members indicated their continuing support for the watershed planning process through signatures and individual commitments specifying how they will contribute or participate in the process, which may be found at the end of the DOC.

Partners/others: See SWMS Team Declaration of Cooperation for participating individuals, organizations and agencies.

Timeframe: January - June 2006

Cost:

Contact: Kelly Baty, Loudoun County, Department of Building and Development, 703-771-5390, wbaty@loudoun.gov

Website: <http://www.loudoun.gov/b&d/watershed.htm>

Metric/Result: An evaluation survey of the SWMS team participants was distributed. The results of this process evaluation have not been compiled as of the publishing of this inventory. Contact Tanya Denckla, tanyadc@virginia.edu, at IEN for more information on feedback received from SWMS participants.

3.10 Watershed Management Planning

Activity Type: Land use planning, policy or program

Lead Organization: Loudoun County Building & Development

Description: After finalizing a strategy for watershed management planning in Loudoun county (the SWMS project), the Comprehensive Watershed Management Plan (CWMP) will begin developing more detailed watershed management plans for the county. This effort will be managed by the Department of Building & Development and funded, in part, by a grant from EPA. The Watershed Planning Stakeholder Steering Committee (an outgrowth of the SWMS project) will help provide guidance in this effort.

Partners/others:

Timeframe: June 2006 - 2007

Cost:

Contact: Kelly Baty, Loudoun County Department of Building and Development, 703-777-0397.

Website: <http://www.loudoun.gov/b&d/water.htm>

Metric/Result: Future metrics to be determined.

3.11 Loudoun County Environmental Initiatives

Activity Type: Land use planning, policy or program

Lead Organization: LCB&D, LCPD, LCGSD, LCHD, LCSA,

Description: The primary purpose of the Environmental Initiatives undertaken by the various departments in the County is to implement the Green Infrastructure environmental actions as described in Chapter Five of the 2003 County General Plan.

Partners/others:

Timeframe: Ongoing

Cost: 2000 to present- 100's of 1,000's to millions of dollars have been spent over the last seven fiscal years on these and other efforts.

Contact: Bruce McGranahan, Environmental Coordinator, Loudoun County Department of Planning, 703-737-8511.

Website: <http://www.loudoun.gov/b&d/water.htm>

Metric/Result: Water Resources Monitoring Program, Wetlands Inventory and Mapping Project, Strategic Watershed Management Solutions, Water Forum, Comprehensive Watershed Management Plan, Water Supply Planning, Goose Creek Source Water Protection Plan, Broad Run Water Reclamation Facility, Inter-County Partnerships to collaborate on Water Resources Management issues, etc. Each of these programs, projects, and efforts will have a specific metric to evaluate the effectiveness of each. For example, the WRMP consists of 8 County/USGS and two USGS/ DEQ(of 10 in County total) Stream Real- Time Gages and two County/USGS Rain Real-Time Gages to measure quantitative stream flow and discharge, and rain flow, respectively. Other efforts, like tree plantings, sponsored by the County have not all been counted. There are a few remote probe groundwater wells, and two real-time groundwater wells (operated by the USGS) that are measuring static and dynamic water levels. More of these wells will be installed to help complete the hydraulic flow of water in critical watershed areas. The hydrodynamics of the water cycle in Loudoun County watersheds are a complex process. And considerable effort is underway to measure and assess that process, as the aforementioned description tries to summarize. All of these activities are ongoing and have not been operated long enough to assess appropriate metrics or efficacy of the efforts.

3.12 Loudoun County Stormwater Management Program

Activity Type: Land use planning, policy or program

Lead Organization: Loudoun County General Services

Description: The purpose of the Stormwater Management Program is to establish and maintain a countywide program to address the design, development, improvement, operation, inspection, maintenance and oversight of the stormwater management system. The program is administered through the Public Works Division of the Department of General Services. As the population of the county grows, certain federal and state criteria concerning the quality and quantity of storm water runoff must be met. The eastern, urbanized area of Loudoun County has been included by the Environmental Protection Agency and the Commonwealth of Virginia in those areas requiring stormwater discharge permits under the National Pollutant Discharge Elimination System (NPDES) Phase II requirements. Control of the quality and quantity of the runoff is essential to the overall health of our people and our natural resources. The Stormwater Management Plan (SWP) is designed to comply with the six minimum control measures outlined in Virginia state regulations. The SMP is available here:

http://inetdocs.loudoun.gov/genserv/docs/stormwater/_Permitsandrepor_/index.htm

Partners/others: VDEQ

Timeframe: June 2002 - Ongoing

Cost: Annually funded; approximately \$2 million/year

Contact: Randall Williford, Loudoun County Department of General Services, 703-771-5666

Website: <http://www.loudoun.gov/genserv/stormwater/index.htm>

Metric/Result: 41,300 structures, 500 BMPs, 600 miles of pipe, 700 miles of open channel

3.13 Linear Stream Valley Parks/Trail

Activity Type: Land use planning, policy or program

Lead Organization: Loudoun County Parks and Recreation

Description: Loudoun County Department of Parks Recreation and Community Services is developing a series on linear parks/trails along the County's stream and river corridors. It offers a great opportunity to preserve the environmental integrity of stream and river corridor and provide public open space and access. A system of linear parks/trails offer interesting educational and recreational opportunities in promoting awareness of the stream and river ecosystem, wildlife habitat, culture heritage studies and interpretations. Stream and river corridors have regional importance with respect to protecting water quality; unique plant, bird and animal habitat; and their contributions to scenic views within their corridors.

Partners/others:

Timeframe: In progress.

Cost:

Contact: Mark Novak, Chief Park Planner, Loudoun County Department of Parks Recreation and Community Services PRCS) 703-737-8992, mnovak@loudoun.gov

Website: In development.

Metric/Result:

3.14 Goose Creek Sourcewater Protection Plan

Activity Type: Land use planning, policy or program

Lead Organization: Loudoun County Sanitation Authority

Description: LCSA and the City of Fairfax jointly evaluated potential issues and potential protection measures in the Goose Creek watershed. The resulting Goose Creek Source Water Protection Program report includes descriptions of planning and implementation issues, including recommendations for implementation. LCSA and Loudoun County departments are currently considering the recommendations.

Partners/others:

Timeframe: Report Published in December 2003

Cost:

Contact: Todd Danielson, Community Systems Manager, Loudoun County Sanitation Authority (LCSA), 703-771-1095, todd.danielson@lcsa.org

Website: <http://www.lcsa.org/water/path/protecting.cfm?pl1=1&pl2=3>

Metric/Result:

3.15 Occoquan Basin Non-point Pollution Management Program

Activity Type: Land use planning, policy or program

Lead Organization: Northern Virginia Regional Commission

Description: The Occoquan Watershed covers 590 square miles and includes the Occoquan Reservoir, which serves as the boundary between Fairfax and Prince William counties. The reservoir is one of two major water sources for the Fairfax County Water Authority, which supplies water to over 1 million people in Northern Virginia. Loudoun County's southernmost portion resides in the Occoquan basin. The purpose of Northern Virginia Regional Commission's (NVRC) Occoquan Basin Non-point Pollution Management Program is to help localities maintain acceptable water quality in the reservoir through control of non-point source pollutant loadings. NVRC maintains the Occoquan Basin Computer Model, which during the early 1980s served as the basis for down-zoning the Fairfax County portion of the watershed to protect drinking water from pollution caused by urban development. Every five years, NVRC performs an assessment of changes in land uses in the watershed to update the model and to help localities determine whether additional land management efforts need to be undertaken.

Partners/others: local governments

Timeframe:

Cost:

Contact: Norman Goulet, ngoulet@novaregion.org

Website: <http://www.novaregion.org/occoquan.htm>

Metric/Result:

3.16 Potomac Watershed Roundtable

Activity Type: Land use planning, policy or program

Lead Organization: NVSWCD coordinates roundtable.

Description: The Potomac Watershed Roundtable is a regional inter-government citizen forum whose purpose is to promote collaboration and cooperation on environmental concerns, especially water quality issues, among the various local governments and stakeholder interest groups residing within the Virginia side of the middle and lower Potomac River watershed. Topics on which the Roundtable has shared information and collaborated on responses and solutions have included the Potomac Tributary Strategies, nonpoint source pollution, water quantity and quality, nutrients, and stormwater management. Committees from this roundtable present recommendations to the General Assembly.

Partners/others: many

Timeframe: Fall 2000 - Ongoing

Cost:

Contact: The Northern Virginia Soil and Water Conservation District, 703-324-1460

Website: <http://www.potomacroundtable.org/>

Metric/Result:

3.17 The Virginia Conservation Lands Needs Assessment

Activity Type: Land use planning, policy or program

Lead Organization: Virginia Department of Conservation and Recreation

Description: The Virginia Conservation Lands Needs Assessment (VCLNA) is a flexible, widely applicable tool for integrating and coordinating the needs and strategies of different conservation interests, using GIS to model and map land conservation priorities and actions in Virginia. The VCLNA allows the manipulation of issue-specific data sets that can be weighted and overlaid to reflect the needs and concerns of a variety of conservation partners - issues like: unfragmented natural habitats, natural heritage resources, outdoor recreation, prime agricultural lands, cultural and historic resources, sustainable forestry, water quality improvement, drinking water protection. The Natural Landscape Assessment (NLA) is one component of the more comprehensive VCLNA. Based on land cover data derived from satellite imagery, the focus is identifying and prioritizing natural lands and the habitat corridors necessary to support and enhance them. This data layer is a fundamental complement to other conservation interests and needs. The Natural Landscape Assessment is not intended, however, to serve as a tool for fine-scale analyses and prioritizations or for identifying small patches of important habitat. The next step needed to make the VCLNA a comprehensive tool is to assemble or create additional geospatial datasets for the varied needs of additional conservation partners. The Chesapeake Bay Program has identified some available datasets and created useful models as part of their Resource Lands Assessment.

Partners/others: VDEQ

Timeframe:

Cost:

Contact: Joseph T. Weber, GIS Projects Manager/Conservation Biologist,
804-371-2545, joseph.weber@dcr.virginia.gov

Website: <http://www.state.va.us/dcr/dnh/vclna.htm>

Metric/Result:

3.18 Forestry Best Management Practices and Water Quality Laws

Activity Type: Land use planning, policy or program

Lead Organization: Virginia Department of Forestry

Description: The mission of the Virginia Department of Forestry is to protect and develop healthy, sustainable forest resources for Virginians. DOF works toward this goal by working with landowners and loggers to use forestry best management practices to minimize erosion and enforcing water quality laws. Technical and financial assistance is available to landowners through management plans, cost-share programs and riparian area tax credits.

Partners/others:

Timeframe: Continuous

Cost:

Contact: Kelley Wagner, VDOF, 703.777.0457

Website: <http://www.dof.virginia.gov>

Metric/Result:

4. Stream Monitoring or Stewardship

4.01 Audubon Naturalist Society

Activity Type: Stream monitoring or stewardship

Lead Organization: Audubon Naturalist Society

Description: Audubon Naturalist Society (ANS) – ANS is a regional environmental education and stewardship organization that operates the Rust Sanctuary in Leesburg. It has an active stream monitoring program in Maryland and Fairfax County in Virginia using a modified EPA Rapid Bioassessment II methodology. ANS provides training, environmental stewardship education, and program support for the stream monitoring activities of the Loudoun Wildlife Conservancy in Loudoun County.

Partners/others:

Timeframe:

Cost:

Contact: Cliff Fairweather, Audubon Naturalist Society, 703-737-0021, cliff@audubonnaturalist.org

Website: <http://www.audubonnaturalist.org/>

Metric/Result:

4.02 LSWCD TMDL (Total Maximum Daily Load) Stream Monitoring Program

Activity Type: Stream monitoring or stewardship

Lead Organization: Loudoun Soil & Water Conservation District

Description: LSWCD monitors streams at a variety of sites throughout Loudoun County for physical and nutrient parameters, fecal bacteria, and aquatic insects. Bacteria sampling is conducted by District Staff and analyzed by Fairfax County Health Laboratory. LSWCD uses Hach and Lamotte field test kits for water chemistry testing and the Save Our Streams (SOS) protocol for their aquatic insect monitoring. For details see web site - www.loudoun.vaswcd.org

Partners/others:

Timeframe: 2001 - Ongoing

Cost:

Contact: LSWCD Staff, Loudoun Soil and Water Conservation District,
703 777-2075 ext. 104

Website: <http://loudoun.vaswcd.org>

Metric/Result:

4.03 Loudoun Wildlife Conservancy

Activity Type: Stream monitoring or stewardship

Lead Organization: Loudoun Wildlife Conservancy

Description: Loudoun Wildlife Conservancy (LWC) – LWC is a 501(c)(3) membership organization whose mission is to preserve wildlife habitat. LWC is the largest unaffiliated conservation group in Loudoun

County. LWC members and volunteers supply most of the manpower to the organization's citizen stream monitoring program, the Loudoun Stream Quality Project. In 2004 there were 49 LWC volunteers who monitored 26 different sites on 42 occasions. LWC monitors bottom-dwelling aquatic insects (benthic macro invertebrates) and stream habitat using the EPA Rapid Bioassessment II methodology.

Partners/others:

Timeframe:

Cost:

Contact: Phil Daley, Loudoun Wildlife Conservancy, 540-338-6528, PEDaley@verizon.net

Website: <http://www.loudounwildlife.org/>

Metric/Result: LWC has been doing Stream quality assessment/monitoring since 1996. Monitoring is done at selected sites by LWC members, trained by ANS and LWC personnel, primarily using a modified EPA monitoring protocol. Some sites use a modified SOS protocol, but all sites are now sampling upwards of 200 macro-invertebrates per monitoring session. Currently 15 sites are being monitored twice (spring and fall) a year. In addition to Biological collection, volunteers also measure/access PH, Temperature, turbidity and sedimentation. Macro samples are identified to the Order/Family level for insects and the Class/Order level for non-insects. Monitors also access land use and human impact ¼ mile above and below the monitor site. All data is provided to LWW for inclusion in their State of the Streams report and also provided to Virginia's DEQ. DEQ estimates that 38 miles of streams are being monitored

4.04 Sugarland Run Phase I. Rapid Stream Assessment Technique (RSAT) (~3mi)

Activity Type: Stream monitoring or stewardship

Lead Organization: Metropolitan Washington Council of Governments

Description: Sugarland Run Phase RSAT I.

The Metropolitan Washington Council of Governments (MWCOC), the Loudoun Soil and Water Conservation District (LSWCD), the Natural Resource Conservation Service (NRCS), the Virginia Department of Forestry (VDOF), Virginia Department of Environmental Quality (VDEQ) are partnering efforts to expand Loudoun County's water resources database. Specifically, through the employment of MWCOC's Rapid Stream Assessment Technique (RSAT) Level III, the partnership seeks to comprehensively evaluate existing tributary stream quality conditions at 20 new and strategically located sites. RSAT was developed by John Galli at to allow watershed managers to perform a simple, rapid reconnaissance-level assessment of stream quality conditions.

Partners/others:

Timeframe: 1997

Cost: \$50,000 Note: most MWCOC grants typically have a 1:1 match or slightly better, and some in-kind from the LSWCD. Since 1997 MWCOC has brought over \$277,000 to the Loudoun County stream surveying efforts. See other RSAT studies listed in this inventory.

Contact: John Galli, Metropolitan Washington Council of Governments, 202-962-3348,

jgalli@mwccog.org

Website: <http://www.mwccog.org>

Metric/Result: Since 1997 a total of 27 stream miles have been surveyed in Loudoun County using the RSAT system.

4.05 Sugarland Run Phase II. RSAT (11mi)

Activity Type: Stream monitoring or stewardship

Lead Organization: Metropolitan Washington Council of Governments

Description: Sugarland Run Phase RSAT II. See Sugarland Phase I for RSAT description.

Partners/others:

Timeframe: 1999

Cost: \$60,345 Plus matching and in-kind.

Contact: John Galli, Metropolitan Washington Council of Governments, 202-962-3348,

jgalli@mwccog.org

Website: <http://www.mwccog.org>

Metric/Result: Since 1997 a total of 27 stream miles have been surveyed in Loudoun County using the RSAT system.

4.06 Talbot Farm Tributary Rapid Stream Assessment Technique (RSAT) (1mi)

Activity Type: Stream monitoring or stewardship

Lead Organization: Metropolitan Washington Council of Governments

Description: Talbot Farm Tributary RSAT

Partners/others:

Timeframe: 1998

Cost: \$5,000 Plus matching and in-kind

Contact: John Galli, Metropolitan Washington Council of Governments,

202-962-3348, jgalli@mwkog.org

Website: <http://www.mwkog.org>

Metric/Result: Since 1997 a total of 27 stream miles have been surveyed in Loudoun County using the RSAT system.

4.07 Loudoun County Baseline Biological Monitoring Survey, Phase II: Catoctin Creek, Dutchman Creek, Piney Run, Clarks Run and Quarter Branch Tributary Conditions (~ 8mi)

Activity Type: Stream monitoring or stewardship

Lead Organization: Metropolitan Washington Council of Governments

Description: The LSWCD, the Natural Resource Conservation Service (NRCS), the Virginia Department of Forestry (VDOF), VDEQ and COG are continuing their partnering efforts to expand the County's water resources database. One major goal of the partnership is to continue building upon the success of the recently completed COG Loudoun County Baseline Biological Monitoring Survey (2000-2002) Phase I: Broad Run, Goose Creek, Limestone Branch, Catoctin Creek, Dutchman Creek and Piney Run Mainstream Conditions study. Specifically, through the employment of COG's Rapid Stream Assessment Technique (RSAT) Level III, the partnership seeks to comprehensively evaluate existing tributary stream quality conditions at 20 new and strategically located sites located within the Catoctin Creek, Piney Run, Dutchman Creek, Clarks Run and Quarter Branch watersheds (Figure 1). The total stream survey length associated with the proposed RSAT work is approximately 8-10 miles.

Partners/others: LSWCD, NRCS, VDOF, VDEQ

Timeframe: 2004

Cost: 86000

Contact: John Galli, Metropolitan Washington Council of Governments, 202-962-3348,

jgalli@mwkog.org

Website: <http://www.potomacroundtable.org/>

Metric/Result: ditto

4.08 Virginia Department of Environmental Quality

Activity Type: Stream monitoring or stewardship

Lead Organization: Virginia Department of Environmental Quality

Description: Virginia Department of Environmental Quality (DEQ) collects stream quality data at several stations in Loudoun as part of Virginia's ambient water quality monitoring network. The data consist primarily of physical, chemical, and bacteriological measurements. DEQ also collects stream habitat and macro invertebrate data.

Partners/others:

Timeframe: January 2000 - December 2004

Cost: \$16,000/year (approximately)

Contact: Bryant Thomas, Virginia Department of Environmental Quality,

703-583-3843, bhthomas@deq.virginia.gov

Website: <http://www.deq.virginia.gov>

Metric/Result: Although stream monitoring in Loudoun has been ongoing since the late 1960s, the costs are derived from the annual average of laboratory analysis fees incurred from stream monitoring in Loudoun County between the calendar years 2000 and 2004. During this time, 163 river miles of stream in Loudoun County were assessed using DEQ provided data, including bacterial monitoring. Staff salaries, field equipment, vehicles, gasoline, and other miscellaneous expenses were not included in this total.

4.09 Youth and Educator Stewardship and Stream Monitoring Programs.

Activity Type: Stream monitoring or stewardship

Lead Organization: Earthforce

Description: Earthforce supported a group of teachers with stream monitoring kits. In October 2005, eight teachers throughout Loudoun County collected raw water samples from waterways. All of the samples were delivered to Fairfax Water's lab. The results from the tests were then provided to Jeff Talbott of the Virginia Department of Environmental Quality, who provided an analysis of the data at a teacher meeting on http://www.earthforce.org/files/1189_file_VA_DEQ_Loudoun_Data.pdf Earthforce also publishes guides and handbooks, such as "The Healthy Streams Handbook"

Partners/others: School teachers

Timeframe: October - December 2005

Cost:

Contact: Jen McDonnell, 703-868-6042, jmcdonnell@earthforce.org

Website: <http://www.earthforce.org/section/offices/capitalregion/>

http://www.earthforce.org/files/1189_file_VA_DEQ_Loudoun_Data.pdf

Metric/Result:

4.10 Citizen Stream Monitoring - Goose Creek

Activity Type: Stream monitoring or stewardship

Lead Organization: Goose Creek Association

Description: Goose Creek Association conducts stream monitoring and has data for parts of Goose Creek that are in Fauquier County that are separate from the data collected by LWW.

Partners/others:

Timeframe: ongoing

Cost: \$7,500 per year grant

Contact: Nancy West, Goose Creek Association, noblewest@verizon.net

Website: <http://www.goosecreekassn.org/>

Metric/Result: There are 15-18 monitoring sites primarily in Fauquier County.

For the Goose Creek Watershed, the following measurements were collected for the *Conservation Reserve Enhancement Program (CREP)* provided by the Marshall Soil and Water Districts and DHR. Contact Tom Turner for more information: tom.turner@va.nacdnet.net

Linear feet of Riparian Buffer: 46,201 Loudoun; 156,395 Fauquier.

Acres of Riparian land under conservation easement - For the Goose Creek Watershed - there are 72,000 acres under conservation easement in the Goose Creek Watershed, or approximately 30% of total land (PEC statistic). Of this total 72,000 acres, approximately 27,850 acres are in conservation easement in the Goose Creek watershed portions of Loudoun County.

E&S miles of fenced riparian corridors / Other E&S controls - For the Goose Creek Watershed: WP-2/E&S miles of fenced riparian corridor: Loudoun 10.75 miles; Fauquier 10.21 Miles.

Other E&S Control Measures (tree plantings, upland tree planting, crops and grasses planted, etc): Loudoun - 1965.2 acres; Fauquier - 1120.3 acres.

4.11 Loudoun County Water Resource Monitoring Program (see also 1.04)

Activity Type: Stream monitoring or stewardship

Lead Organization: Loudoun County Building & Development

Description: The goal of the Water Resource Monitoring Program (WRMP), which began in October 2002, is to coordinate and work with various county departments, federal agencies and local citizens groups to assess and protect Loudoun County's valuable water resources. Since this work is a long-term project and will take significant monetary commitments, funding resources are being sought through a variety of means and organizations. The following projects are a summary of the WRMP. There is also a link to a map showing selected ground and surface water sites being monitored as part of the WRMP.

Partners/others: USGS

Timeframe: October 2002 -

Cost:

Contact: Dennis Cumbie, Kelly Baty or Glen Rubis: Loudoun County Department of Building and Development, 703-777-0397

Website: <http://www.loudoun.gov/b&d/water.htm#water>

Metric/Result: All of these activities are ongoing and have not been operated long enough to assess appropriate metrics or efficacy of the efforts.

4.12 Broad Run Water Quality Monitoring Program

Activity Type: Stream monitoring or stewardship

Lead Organization: Loudoun County Sanitation Authority

Description: LCSA established the Broad Run Water Quality Monitoring Program in 1990 to support the Broad Run Water Reclamation Facility (WRF). This is a long-term comprehensive study of stream hydrology and pollutant transport in Broad Run prior to and after construction of the WRF facility. The monitoring program consists of biweekly or monthly grab sampling at a site on Broad Run just upstream of LCSA's O&M building in Ashburn. Testing is done for suspended sediment, nutrients, dissolved oxygen, coliforms and trace metals. This work is being performed by the Virginia Tech's Occoquan Watershed Monitoring Laboratory located in Manassas, Virginia.

Partners/others:

Timeframe: 1990 - present

Cost:

Contact: Tom Broderick, Broad Run Project Manager, 571-223-3855, ext. 237

Website: <http://www.lcsa.org/water/path/monitoring.cfm?pl1=1&pl2=2>

Metric/Result:

4.13 Loudoun County Sanitation Authority

Activity Type: Stream monitoring or stewardship

Lead Organization: Loudoun County Sanitation Authority

Description: Loudoun County Sanitation Authority (LCSA) - LCSA monitors wastewater and drinking water treatment discharges throughout the county. It does not routinely monitor stream waters, but has conducted a special study on Broad Run for a new wastewater treatment facility. LCSA also conducted a special Source Water Protection Program study of the Goose Creek and Beaverdam Reservoir.

Partners/others:

Timeframe:

Cost:

Contact: Todd Danielson, Community Systems Manager, Loudoun County Sanitation Authority (LCSA), 703-771-1095, todd.danielson@lcsa.org

Website: <http://www.lcsa.org/>

Metric/Result:

4.14 Loudoun Watershed Watch (LWW)

Activity Type: Stream monitoring or stewardship

Lead Organization: Loudoun Watershed Watch

Description: Loudoun Watershed Watch (LWW) was formed in 2000 by citizen and county authorities concerned about protecting the water resources of Loudoun County. LWW recruits citizen volunteers and uses grant funds to collaborate with government officials to organize stream stewardship activities on a countywide basis and to provide materials to educate citizens and county decision makers. Examples of watershed stewardship and educational activities that can be provided by LWW include:

- Development of stream monitoring, habitat assessment, stream survey, and QAPP protocols and guidelines;
- Stream monitoring and TMDL assessment data collection;
- Compilation and analysis of state and citizen stream monitoring data;
- Organization of watershed stewardship activities such as riparian buffer restoration;
- Development of citizen educational materials; and
- Access to stewardship materials and information about events in Loudoun County on a website.

Partners/others:

Timeframe: 2002 - ongoing

Cost:

Contact: Darrell Schwalm, Loudoun Watershed Watch, Schwalmie@aol.com

Website: <http://www.loudounwatershedwatch.org>

Metric/Result: No metric

4.15 Loudoun Watershed Watch (LWW) – TMDL Related Catoctin Watershed Project

Activity Type: Stream monitoring or stewardship

Lead Organization: Loudoun Watershed Watch

Description: Catoctin Watershed Project (CWP) - In 2004 LWW collaborated with LWC and ANS to establish the Catoctin Watershed Project (CWP) in order to obtain grant funds to initiate several stream stewardship activities in the Catoctin Watershed. Grant funds of approximately \$4,000 in 2004, \$6,000 in 2005, and \$3,000 in 2006 were obtained to support the Virginia Department of Conservation and Recreation (DCR) TMDL Implementation Plan to reduce fecal pollution in the watershed so water quality can meet state standards for recreational use. Examples of activities that CWP grant funds can support include:

- Water quality monitoring to assess TMDL Implementation progress;
- Organization of local Friends of Catoctin Watershed group;
- Organization of stream stewardship events such as riparian buffer restoration projects;
- Support of stream clean-up projects;
- Mentoring and support for students engaged in water related science projects; and
- Conducting stream surveys and stream walks to help identify priority stream protection and restoration needs.

Partners/others: ANS

Timeframe: 2005 - ongoing

Cost: 300 person hours per year

Contact: Darrell Schwalm, Loudoun Watershed Watch, Schwalmie@aol.com

Website: <http://www.loudounwatershedwatch.org>

Metric/Result: No metric

4.16 Loudoun Watershed Watch (LWW) Bacteriological Stream Monitoring Activities

Activity Type: Stream monitoring or stewardship

Lead Organization: Loudoun Watershed Watch

Description:

- Stream Monitoring -- LWW monitors 14 stream sites in the Catoctin Watershed twice monthly for bacteriological quality. This project involves approximately 40 person hours per month.
- Data Records -- LWW maintains and updates a data spreadsheet and data analyses on a bi-monthly basis of the Catoctin Watershed bacteriological data involving approximately 30 records per month and approximately 3 person hours per month.
- Data Provided to Public -- LWW records the Catoctin watershed bacteriological monitoring data online at the LWW website on a bi-monthly basis involving approximately 2 person hours per month.
- Special Studies -- LWW conducts special bacteriological sampling studies two or three times yearly in the Catoctin Watershed involving approximately 60 person hours per year.
- Annual Reports -- LWW compiles and provides a written analysis of the DEQ and LWW bacteriological data for the Catoctin Watershed on a yearly basis to track progress on the TMDL implementation; and reports their findings to DEQ, DCR, the Loudoun Health Department, and the Loudoun Soil and Water Conservation District involving approximately 20 person hours per year.

Partners/others: LWC

Timeframe: June 2004 - Ongoing

Cost: 620 volunteer person hours per month

Contact: David Ward, LWC Volunteer, dward@earthwardconsulting.com

Website: <http://www.loudounwatershedwatch.org>

Metric/Result: Metric -- "Stream miles assessed for nonpoint fecal pollution" (based on 2 miles per sampling site) -- 28 miles

4.17 Rapid Stream Assessment Technique (RSAT) Level III (~7mi)

Activity Type: Stream monitoring or stewardship

Lead Organization: Metropolitan Washington Council of Governments

Description: The Loudoun County Board of Supervisors, the Loudoun Soil and Water Conservation District (LSWCD), the Natural Resource Conservation Service (NRCS), the Virginia Department of Forestry (VDOF) and Metropolitan Washington Council of Governments (COG) proposed a partnership with the goal to comprehensively evaluate existing stream quality conditions at 20 strategically located sites within the county. The baseline condition data generated by this effort is intended to provide needed guidance for possible future watershed protection, restoration, monitoring and resource management initiatives and actions. The major watersheds for the Phase I study include Broad Run, Goose Creek, Limestone Branch, Dutchman Creek, and Piney Run. The project is in coordination with Loudoun County government, LSWCD, NRCS and VDOF. Coordination will also be maintained with other organizations that are interested or involved in stream protection and monitoring; these include the Friends of Sugarland Run, the Audubon Naturalist Society, Izaak Walton League, Save Our Streams, North Fork Goose Creek Watershed Committee, Piedmont Environmental Council, Goose Creek Scenic River Advisory Board and Goose Creek Association. (Status of the project is not yet known.)

Partners/others: LC, LSWCD, NRCS, VDOF

Timeframe: 2001 - ?

Cost: \$75,695

Contact: John Galli, Metropolitan Washington Council of Governments, 202-962-3348,

jgalli@mwkog.org

Website: <http://www.mwkog.org>

Metric/Result: General stream quality-channel stability, channel scouring/deposition, physical aquatic habitat, water quality, riparian buffer and biological community health (Macroinvertebrates)

4.18 Metropolitan Washington Council of Governments

Activity Type: Stream monitoring or stewardship

Lead Organization: Metropolitan Washington Council of Governments

Description: Metropolitan Washington Council of Governments (COG) – COG is a regional organization that conducts baseline studies of stream quality conditions at the invitation of local officials. In the past 10 years, COG has conducted studies of Sugarland Run, Broad Run, Goose Creek, Limestone Branch, Piney Run, and Dutchman's Creek.

Partners/others:

Timeframe:

Cost:

Contact: John Galli, Metropolitan Washington Council of Governments, 202-962-3348, jgalli@mwkog.org

Website: <http://www.novaregion.org/occoquan.htm>

Metric/Result:

4.19 US Geological Survey

Activity Type: Stream monitoring or stewardship

Lead Organization: U.S. Geological Survey

Description: US Geological Survey (USGS) – USGS collects chemical, sediment, and stream flow data at stations in Goose and Catoctin Creeks. Seven stations were added in 2002 in other streams.

Partners/others:

Timeframe: Ongoing

Cost:

Contact: Mark R. Bennett, U.S. Geological Survey, 804-261-2643, mrbenet@usgs.gov

Website: <http://www.usgs.gov>

Metric/Result:

4.20 Potomac River Basin Drinking Water Source Protection Partnership

Activity Type: Stream monitoring or stewardship

Lead Organization: (DWSP Partnership)

Description: The DWSP Partnership is a voluntary organization of drinking water suppliers and government agencies working to protect drinking water sources, thereby safeguarding both public health and the environment. Through work groups and active discussion at partnership meetings, the DWSP Partnership is identifying a strategy for carrying forward source water protection as recommended by source water assessments that were prepared throughout the Potomac basin. Nineteen government agencies and drinking water utilities from throughout the Potomac basin have formally joined the DWSP Partnership.

Partners/others:

Timeframe: 2004 - ongoing

Cost:

Contact: Cherie Schultz, ICPRB, 301-984-1908/ext 120

Website: http://www.potomacriver.org/water_quality/safewater.htm

Metric/Result:

Table A: Tributary Strategies Input Table for Loudoun County-BMP

The Loudoun County data below was produced for the Strategy for the Shenandoah and Potomac River

Basins March 2005 - Chesapeake Bay Nutrient and Sediment Reduction Tributary

<http://www.naturalresources.virginia.gov/WaterQuality/FinalizedTribStrats/shenandoah.pdf>

Disclaimer: This may not be the final data submitted, nor complete, and may duplicate other metrics. Contact LC B&D

Tributary Name: VA Potomac

County/City: Loudoun

Date: September 3, 2005

Cost Share			2010 Target	Progress	Remaining
BMP	BMP Code	Land Use	BMPs	Reported	BMPs needed
Forestry BMPs					
Forest Harvesting Practices	FR-4	Forest	691	163	528
Agricultural BMPs					
Animal Waste Mgmt System/Barnyard Runoff Cont.	WP-4, WP-4B	Manure	4	3	1
Conservation Plans	NA	Agricultural^	98,405	5,865	92,540
Cover Crops1	SL-8, SL-8B	Cropland*	86	936	0
Continuous No-till	SL-15A	Cropland*	0	0	0
Forested Buffers	FR-3, CRFR-3	Agricultural^	13,664	346	13,319
Grass Buffers	WQ-1, WQ-1W	Cropland*	18	446	0
Grazing Land Protection	SL-6	Pasture	6,732	5,762	970
Non-Urban Stream Restoration (linear feet)	SE-1, WP-2A, WP- 2C	Pasture	12,745	0	12,745
Nutrient Management Plan Implementation	NM-1	Cropland & Hay	34,460	13,618	20,842
Off Stream Watering w/Fencing	WP-2,	Pasture	33,656	167	33,489
Off Stream Watering w/out Fencing	SL-6B	Pasture	13,462	10	13,452
Retirement Erodable Land	SL-1, SL-11	Cropland*	524	11,340	0
Tree Planting	FR-1	Agricultural^	13,659	1,682	11,977
Wetland Restoration	WQ-6B	Agricultural^	5,244	0	5,244
Urban/Suburban BMPs**				Other Progress	
Dry Detention Ponds	NA	Urban/Suburban	0	0	0
Dry Extended Detention Ponds	NA	Urban/Suburban	0	0	0
Erosion Sediment Control (ESC)	NA	Urban/Suburban	9,217	3,419	5,798
Forested Buffers	NA	Urban/Suburban	2,863	0	2,863
Non-Structural Shoreline ESC (linear feet)	NA	Urban/Suburban	599	0	599
Nutrient Management Plan Implementation	NA	Urban/Suburban	30,219	3,945	26,274
Structural Shoreline ESC (linear feet)	NA	Urban/Suburban	60	0	60
Tree Planting	NA	Urban/Suburban	2,863	0	2,863
Urban Filtering Practices	NA	Urban/Suburban	7,475	0	7,475
Urban Infiltration Practices	NA	Urban/Suburban	7,475	0	7,475
Urban Stream Restroation (linear feet)	NA	Urban/Suburban	8,108	0	8,108
Wet Ponds & Wetlands	NA	Urban/Suburban	7,475	0	7,475
Wetland Restoration	NA	Urban/Suburban	1,613	0	1,613
Septic BMPs					
Septic Connections (system)	RB-2	Septic	835	0	835
Septic Pumping (system)	RB-1	Septic	3,205	0	3,205

BMPs in bold letters are conversion practices (e.g. pasture to forest). Once converted, no additional BMPs can be applied.

All implementation units are acres unless otherwise noted.

BMPs not in bold letters are non-conversion practices and can have multiple BMPs applied per acre.

*Acres available for high-till and low-till are combined in this table providing one figure for total acres of cropland available.

**Acres of Pervious Urban, Impervious Urban and Mixed Open are combined in this table, providing one figure for total Urban/Suburban.

^ Equals the combination of all agricultural land uses (cropland + hay + pasture).

Cover Crops1 - Progress Reported is for acres installed in 2003 only.

Table B: Tributary Strategies Input Table for Loudoun County-Stormwater

The Loudoun County data below was produced for the Strategy for the Shenandoah and Potomac River Basins March 2005 - Chesapeake Bay Nutrient and Sediment Reduction Tributary

<http://www.naturalresources.virginia.gov/WaterQuality/FinalizedTribStrats/shenandoah.pdf>

This may not be the final data submitted, nor complete, and may duplicate other metrics. Contact LC General Services-Stormwater.

Tributary Name: VA Potomac

County/City: Loudoun

Date: January 2004

BMP Name	VA Code	BMP Implementation 1985-2001 (units)	Proposed BMP 2002-2010 (units)
(CBP Only)	(Practice #)		
Urban BMPs			
Erosion and Sediment Control	acres	3500	5000
Forest Conservation			
Nutrient Management			
Riparian Forest Buffer			
Riparian Grass Buffers			
Stormwater Management Reported by the Following Categories:			
1. Wet Ponds and Wetlands	acres	10000	5000
2. Dry Detention Ponds and Hydrodynamic Structures	acres	20000	10000
3. Dry Extended Detention Ponds	acres	4000	1000
4. Infiltration Practices	acres		
5. Filtering Practices	acres	10000	10000
6. Roadway Systems	acres		
7. Impervious Surface Reduction /Nonstructural Practices	acres		100
8. Street Sweeping and Catch Basin Inserts	acres		
9. Stream Restoration	linear feet	2000	3000
Septic Connections/Hookups	Communal hook up	225	550
Septic Denitrification	Altern.D.F.	128	700
Septic Pumping	Gallons	4,550,000	4,900,000

Table C: Acronym Table: Organizations

ANS	Audubon Naturalist Society
CSRAC	Catoctin Scenic River Advisory Committee
Earthforce	Earthforce
FCDPWES	Fairfax County, Stormwater Planning Division
FWA	Fairfax Water Authority
GCA	Goose Creek Association
GCF	Great Country Farms
GCSRAC	Goose Creek Scenic River Advisory Committee
Greenvest	Greenvest
GWU	George Washington University
HCCA	Heavy Construction Contractors Association
Herndon	Herndon
ICPRB	Interstate Commission on the Potomac River Basin
IEN	Institute for Environmental Negotiation, UVA
LCA	Loudoun County Administration
LCB&D	Loudoun County Building & Development
LCBOS	Loudoun County Board of Supervisors
LCCE	Loudoun County Cooperative Extension
LCDED	Loudoun County Department of Economic Development
LCE&S	Loudoun County Building & Development, Erosion & Sediment Control
LCFB	Loudoun County Farm Bureau
LCGS	Loudoun County General Services
LCHD	Loudoun County Health Department
LCOMGI	Loudoun County Office of Mapping and Geographic Information
LCP&D	Loudoun County Planning Department
LCP&R	Loudoun County Parks and Recreation
LCSA	Loudoun County Sanitation Authority
LCWRTAC	Loudoun County Water Resources Technical Advisory Committee
LEAC	Leesburg - Environmental Advisory Commission
Leesburg	Leesburg
LHA	Loudoun Horse Association
Lovettsville	Lovettsville
LSC	Luck Stone Corporation
LSWCD	Loudoun Soil & Water Conservation District
LVSPD	Loudoun Valley Sheep Producers Association
LWC	Loudoun Wildlife Conservancy
LWW	Loudoun Watershed Watch
Middleburg	Middleburg
MWAA	Metropolitan Washington Airport Authority
MWCOG	Metropolitan Washington Council of Governments
NAIOP	National Organization of Industrial and Office Properties
NFGC	North Fork Goose Creek
NOAA	National Oceanic and Atmospheric Administration
NVBIA	Northern Virginia Building Industry Association
NVRC	Northern Virginia Regional Commission

PEC	The Piedmont Environmental Council
Purcellville	Purcellville
Round Hill	Round Hill
SRP	South Riding Proprietary
TB	Toll Brothers
USCOE	U.S. Army Corps of Engineers
USDOA	U.S. Department of Agriculture, NRCS, FSC, USDA
USEPA	U.S. Environmental Protection Agency
USGS	U.S. Geological Survey
VAPC	VA Paving Company
VCU	Virginia Commonwealth University
VDCR	Virginia Department of Conservation and Recreation
VDEQ	Virginia Department of Environmental Quality
VDOF	Virginia Department of Forestry
VDOT	Virginia Department of Transportation - NoVa Location and Design
VSSWCD	Virginia State Soil and Water Conservation Districts
WC	Walsh, Colucci
WHGA	William H. Gordon and Associates
WSSI	Wetland Studies and Solutions, Inc.

Table D: Index of Organizations by Activity Type

Lead Organization	1. Data, study or resource	2. Education, outreach or project	3. Land use planning, policy or program	4. Stream monitoring or stewardship
ANS				4.01, 4.15
Earthforce				4.09
FCDPWES			3.02	
GCA	1.15	2.01		4.1
GCSRAC			3.03	
LC		2.04		
LCB&D	1.02, 1.03, 1.04, 1.05, 1.06, 1.18		3.01, 3.05, 3.06, 3.07, 3.08, 3.09, 3.10, 3.11	4.11
LCCE		2.02		
LCGS			3.01, 3.11, 3.12	
LCHD	1.02, 1.07		3.11	
LCOMGI	1.25			
LCP&R			3.13	
LCSA	1.01, 1.08	2.03	3.11, 3.14	4.12, 4.13
LSWCD	1.09, 1.10,	2.05, 2.06	3.01	4.02, 4.07, 4.17
LCWRTAC			3.04	
LWC	1.11, 1.12	2.07, 2.08		4.03, 4.16
LWW	1.11, 1.12, 1.13	2.07, 2.08, 2.09		4.14, 4.15, 4.16
MWCOG				4.04, 4.05, 4.06, 4.07, 4.17, 4.18
NOAA	1.14			
NVRA			3.15	
NVSWCD			3.16	
PEC	1.15, 1.16	2.08, 2.10, 2.11, 2.12		
USEPA	1.02, 1.03, 1.04, 1.05, 1.18	2.04	3.01	
USGS	1.14, 1.17, 1.18			4.11, 4.19
VDCCR	1.07, 1.09, 1.10, 1.18, 1.19, 1.20, 1.21, 1.22, 1.23		3.01, 3.17	
VDEQ	1.19, 1.20, 1.21, 1.22, 1.23		3.01, 3.12	4.08
VDOF	1.24	2.13	3.18	4.07, 4.17

Table E: Organizational Directory

This list of organizations was compiled from the full contact list for the SWMS process. Full contact information was not available for every single organization or person.

Organization	Address	Phone
Audubon Naturalist Society		301-652-9188
Broadlands Community HOA	21907 Claiborne Parkway, Ashburn, VA, 20148	
Cascades HOA	47620 Saulty Drive, Sterling, VA, 20165-4792	
Catoctin Scenic River Advisory Committee		540-822-5249
Clarke County Planning Department	Berryville, VA,	
Fairfax County, Stormwater Planning Division	12000 Government Center Parkway, Suite 449, Fairfax, VA, 22035	703-324-5651
Fairfax Water Authority	8560 Arlington Boulevard, Fairfax, VA, 22031	703-289-6318
Goose Creek Association	23559 Parsons Rd., Middleburg, VA, 20117	540-687-3357
Goose Creek Scenic River Advisory Committee	46753 Winchester Drive, Sterling, VA, 20164	703-430-3668
Great Country Farms	18780 Foggy Bottom Road, Bluemont, VA,	
Greenvest L.C.	307 E. Market Street, Suite 100, Leesburg, VA, 20176	703-777-6373
Heavy Construction Contractors Association	10756-B Ambassador Drive, Manassas, VA, 20109	703-392-7410
Herndon	PO Box 427, Herndon, VA, 20172-0427	703-435-6800
Hillsboro	36956 Charles Town Pike, Hillsboro, VA, 20132-2782	703-779-8328
Institute for Environmental Negotiation, UVA	104 Emmet Street, Charlottesville, VA, 22903	434-924-1855
Leesburg	Baltimore, MD, 21237	
Leesburg - Environmental Advisory Commission	Woodbridge, VA, 22193	703-777-2420
Loudoun County Administration	1 Harrison St. 3rd Floor, Leesburg, VA, 20177	703-771-5712
Loudoun County Board of Supervisors	P.O. Box 7000, Leesburg, VA, 20177-7000	703-777-0204
Loudoun County Building & Development	PO Box 7000, 1 Harrison St. 3rd Floor, Leesburg, VA, 20177	703-777-0397
Loudoun County Health Department	P.O.Box 7000, 1 Harrison St. 3rd Floor, Leesburg, VA, 20177	703-737-8931
Loudoun County Farm Bureau	18055 Harmony Church Rd, Hamilton, VA, 20158	703-431-9555
Loudoun County Office of Mapping and Geographic Information	1 Harrison St. 2nd Floor, Leesburg, VA, 20177	703.737.8803
Loudoun County Parks and Recreation	PO Box 7000, 1 Harrison St. 3rd Floor, Leesburg, VA, 20177	703-737-8992
Loudoun County Planning Department	PO Box 7000, 1 Harrison St. 3rd Floor, Leesburg, VA, 20177	703-737-8511
Loudoun County Public Schools	21000 Education Court, Ste 210, Ashburn, VA, 20148	571-252-1298
Loudoun County Public Works	211 Gibson, Leesburg, VA, 20175	703-737-8686
Loudoun County Sanitation Authority (LCSA)	PO Box 4000, Leesburg, VA, 20177	703-478-8016
Loudoun Horse Association	Georges Mill Farm, 11605 Millers Ridge La., Lovettsville, VA, 20180	
Loudoun Soil & Water Conservation District	30 H Catoctin Circle SE, Leesburg, VA, 20175	
Loudoun Soil & Water Conservation District (LSWCD)	30 H Catoctin Circle SE, Leesburg, VA, 20175	703-777-2075
Loudoun Valley Sheep Producers Association	Redgate Farm, 17883 Dry Mill Road, Leesburg, VA, 20175	
Loudoun Watershed Watch	PO Box 2088, Purcellville, VA, 20134	703-430-4180
Loudoun Wildlife Conservancy	PO Box 2088, Purcellville, VA, 20134	540-338-6528
Lovettsville	PO Box 238, Philomont, VA, 20131	540-822-5788

Organization	Address	Phone
Luck Stone Corporation	751 Miller Drive, Suite C-2 , Leesburg, VA, 20175	703-554-6162
Metropolitan Washington Airport Authority	West Building, Room 155 , Ronald Reagan Washington National Airport, Washington, DC, 20001	703-417-8168
Metropolitan Washington Council of Governments	777 North Capitol Street, Suite 300, Washington, DC, 20002	202-962-3348
Middleburg	PO Box 187, Middleburg, VA, 20118-0187	540-687-5152
National Park Service	410 Severn Avenue, Suite 109, Annapolis, MD, 21403	
Northern Virginia Building Industry Association (NVBIA)	44084 Riverside Parkway , Suite 300 , Leesburg, VA, 20176-5102	703-777-6373
Northern Virginia Regional Commission	3060 Williams Drive, Suite 510 , Fairfax, VA, 22031	703-642-4625
Purcellville	130 East Main Street, Purcellville, VA, 20132-3162	540-338-5024
Round Hill	PO Box 36, Round Hill, VA, 20142-0036	540-338-7878
South Riding Proprietary	43055 Center Street, South Riding, VA 20152, VA, 20152	
The Piedmont Environmental Council (PEC)	802 Children's Center Rd., Leesburg, VA, 20175	540-955-9000
Toll Brothers	21630 Ridgetop Circle, Suite 130, Dulles, VA, 20166	704 327-5497
Town of Leesburg	PO Box 88, Leesburg, VA, 20178-0088	703-771-2775
U.S. Army Corps of Engineers		410-962-5196
U.S. Department of Agriculture, NRCS, FSC, USDA		703-777-2075
U.S. Environmental Protection Agency - Wetland and Waters Program	c/o Otto Gutenson, 13121 Orrison Rd., Lovettsville, VA, 20180	202-566-1183
U.S. Geological Survey - Director of Water Resource	1730 East Parham Rd, Richmond, VA, 23228	804-261-2643
VA Paving Company		703-751-7100
Virginia Cooperative Extension - Loudoun Unit	30-B Catoctin Circle, S.E, Leesburg, VA, 20175	703-777-0373
Virginia Department of Conservation and Recreation (DCR)	98 Alexandria Pike, Suite 33, Warrenton, VA, 20186	540-351-1590
Virginia Department of Environmental Quality (DEQ)	98 Alexandria Pike, Suite 33, Warrenton, VA, 20186	703-583-3803
Virginia Department of Forestry – Stream Resources		703-777-0457
Virginia Department of Transportation - NoVa Location and Design	14685 Avion Parkway, VA , Chantilly, VA, 20151	703-383-2182
Wetland Studies and Solutions, Inc. (WSSI)	5300 Wellington Branch Drive, Suite 100, Gainesville, VA, 20155	703-679-5600

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DOC Reference	Action Item/Task	Time Frame	Responsible Parties/ Coordinator	Partners	Resources Needed
	technical committees (WRTAC, LUTC) for their information. • Present the DOC to the incorporated towns for their review and approval.		Department of Building and Development and Environmental Program Manager		
	3. Coordination with Towns - The county should consider adding a provision to the MOU currently under development between it and incorporated towns to enable and assist implementation of the watershed plan.		Environmental Program Manager	Steering Committee	
	4. Public-Private Partners - Support county efforts to work with and encourage its private sector partners to continue their ongoing activities in the watersheds throughout both the planning and implementation phases of the watershed management planning process.		Environmental Program Manager		
	5. Designate Watershed Manager/Coordinator - Request that the BOS create easy and efficient mechanisms for internal county coordination during the planning and implementation process by designating where leadership for watershed management coordination will reside, a critical factor for effective coordination. • For the short-term, request the BOS to designate either an existing department or the Environmental Program Manager as the lead for the Watershed Planning effort. • For the long-term, given the likely increasing importance of watershed management in future years, request the BOS to create an Environmental Services Department in its long-term planning for county staff.		Environmental Program Manager and County Administrator	Steering Committee	.

DOC Reference	Action Item/Task	Time Frame	Responsible Parties/ Coordinator	Partners	Resources Needed
	6. BOS Representation – Develop a protocol for the BOS and incorporated towns to either (in order of preference) attend, have representation or be regularly informed during the Watershed Planning process. • Planning Commission -- The Planning Commission (PC) should be given the opportunity to participate and at a minimum should be kept informed throughout the process.		Environmental Program Manager, County Administrator and Steering Committee		
	7. Policies and Regulations – Work with the county to recommend changes to county regulations that do not support watershed protection. • Work with the county to place any policy recommendations that are applicable to the entire county on a separate and faster track for consideration by the BOS so that the policy recommendations are not on hold while the watershed plan is being finished. • Work with the county to place policy changes into the General Plan as proposed amendments and, where applicable, as amendments to the Zoning Ordinance and Facilities Standards Manual (FSM).		Environmental Program Manager, County Administrator, Department of Building and Development	Steering Committee	
	8. Stormwater Permitting – Work with the County to utilize additional County programs in conjunction with the Stormwater program to address watershed problems while the Stormwater permitting program is under development.		Environmental Program Manager	Steering Committee	
	9. Dillon's Rule – Work with the county to obtain clarification about alternative septic system under Dillon's Rule in light of the different approaches being taken in Clarke and Fauquier Counties.		County Administrator, Environmental Program Manager and County Attorney	Steering Committee	

DOC Reference	Action Item/Task	Time Frame	Responsible Parties/ Coordinator	Partners	Resources Needed
	10. Watershed Plan Progress Reports – Make progress reports to the decision making bodies throughout the watershed management planning process in consultation with one or two Supervisors as appropriate. Presentations to be made to: • The Board of Supervisors • The Planning Commission • Incorporated towns (the Coalition of Loudoun Towns (COLT) may be an appropriate venue for these presentations and it may also be appropriate to provide presentations to joint meetings of town councils and planning commissions).		County Administrator, Environmental Program Manager and Steering Committee		
	10. Plan Evaluation – Develop a strategy for the county in collaboration with the Steering Committee to periodically revisit and update the Watershed Management Plans to ensure that they remain living documents.		Environmental Coordinator and Steering Committee		
	1. Inventory Stakeholders -- Create an inventory of county organizations that are stakeholders in the watershed plan, i.e. organizations whose work or mission relates to the goals of the watershed plan, including conservation and environmental interests, historic preservation, development, business and agriculture.		Environmental Coordinator, Steering Committee and Education Subcommittee	Department of Building and Development	
	2. Inform and Engage Citizens – Create ways that make it easy for Loudoun citizens to be informed, engaged and involved in protecting and restoring water resources in order to enhance the value of the watershed management plans to citizens. • Form a cadre of speakers who are available to attend meetings of different stakeholder groups to reach citizens who might be difficult to reach		Education Subcommittee		

DOC Reference	Action Item/Task	Time Frame	Responsible Parties/ Coordinator	Partners	Resources Needed
	otherwise to engage them in the planning process. • Conduct workshops and create other forums to inform citizens about watershed management needs and to engage citizens in watershed stewardship activities.				
	3. Educational and Outreach Materials -- Develop education and outreach materials to create a more informed citizenry and to raise awareness regarding watershed management needs including materials that address: • Existing water quality and water protection regulations and the need for compliance; and • Requirements for monitoring and maintaining septic systems for new septic owners to develop concrete skills and knowledge.		Education Subcommittee	LCSWCD Health Department	
	4. Website - Maintain a website that informs the public of the watershed management planning initiative and ways that they can become involved and engaged in the planning and implementation process.		Education Subcommittee		
	5. Citizens as Resources - Create methods of using citizen volunteers to conduct some of the public education and outreach initiatives during the planning process to relieve the burden on county staff and to engage citizens in working with their neighbors.		Education Subcommittee		
	6. Teach Environmental Stewardship - Partner with organizations to develop curriculum materials to involve all schools and students and use the schools as a forum to involve citizen in the planning process, watershed education and stewardship		Education Subcommittee	Loudoun School System	

DOC Reference	Action Item/Task	Time Frame	Responsible Parties/ Coordinator	Partners	Resources Needed
	activities.				
	7. County Parks and Trails – Develop additional programs that use parks and streamside trails as venues for education and outreach to engage citizens in the planning and implementation process.		Education Subcommittee	Loudoun Parks and Recreation	
	1. Data Management: - Encourage the County to designate a new position or office with the task of providing central surface and ground water data coordination and management and to assemble data and establish standard data collection and management protocols. - Create a common database to store surface and ground water quality and quantity data from the many data collection entities working in the county.		Steering Committee, Data Subcommittee Department of Building and Development and Data Subcommittee		
	2. Watershed Mapping -- Inventory and map all water resources within the county's watersheds including wetlands.		OMAGI		
	3. GIS Data: Incorporate surface and ground water quality and quantity data and other data as needed into the county GIS system and the county base maps. - Update watershed maps based on a predictive wetlands model. - Make GIS data available to the public in an understandable format.		Data Subcommittee and Department of Building and Development	County GIS and Mapping	
	4. Data Collection Protocols: Adopt data collection protocols that have been used in existing studies or from state endorsed		Data Subcommittee, Department of Environmental Quality and Environmental Protection		

DOC Reference	Action Item/Task	Time Frame	Responsible Parties/ Coordinator	Partners	Resources Needed
	monitoring guidelines for all new data collection. Examine the integrity of existing data carefully before using it in any assessment as not all existing data is relevant to the assessment's purpose and some is old or perhaps faulty.		Agency		
	5. Existing Data: - Establish a means to quickly gather and assess existing data and analyses including agencies such as the USGS and DEQ to avoid duplication of effort, and to incorporate the data into assessments and watershed characterization efforts. - Compile and analyze existing groundwater data to help predict impacts of		Department of Building and Development and Data Subcommittee		

WATER RESOURCE MONITORING PROGRAM (WRMP)					
A. Water Resource Monitoring – Phase I					
	1. Probabilistic Monitoring --- Work with the county to establish probabilistic-based (statistical) monitoring, applied countywide, in order to provide baseline and snapshot data on watershed conditions for tracking progress.		Technical Subcommittee		
	2. Stream Monitoring Reports -- Analyze and prepare monitoring data reports on a periodic basis to ensure relevant data are being collected and to inform stakeholders and the public of progress being made to accomplish the goals of the watershed management planning initiative.		Technical Subcommittee	LWW, LWC, LCSWCD, LCSA	
	3. Stream Flow Gauging – Work with the county to establish a flow gauge network to help monitor in-stream flow and the hydrological health of county streams and waterways.		Data Subcommittee	Department of Building and Development	
1	4. Rain Gauging – Work with the county to install additional rain gauges to adequately document precipitation in the county.		Data Subcommittee	Department of Building and Development	
B. Water Resource Monitoring – Phase II					

WATER RESOURCE MONITORING PROGRAM (WRMP)					
	1. Trend Monitoring – Establish a network of trend monitoring stations to supplement the DEQ stations and support countywide assessment and subwatershed characterization and to evaluate and update the Watershed Management Plans over the years.		Technical Subcommittee	Department of Building and Development	
	2. Detailed Field Surveys/Stream Assessment – Conduct additional field surveys in each subwatershed to develop updated and more detailed data needed to update the implementation plans designed to protect or restore priority stream segments identified in subwatershed plans. Select a field survey protocol that will assess the pathways of runoff to streams, hydrological impacts of increased runoff, impact on aquatic life, impacts on habitat, and geomorphologic impacts, giving preference to the Center for Watershed Protection's RSAT protocol.		Technical Subcommittee	Department of Building and Development	
2	3. Ground Water: Establish 15 to 20 additional long-term monitoring wells and gauges to provide data needed for more sophisticated predictions of impacts of different management options on ground water. Install remote data collection probes or real-time telemetry equipment on additional monitoring wells.		Technical Subcommittee	Department of Building and Development	
C. Water Resource Modeling – Phase I					
	1. Surface Water Modeling – Work with the county to select a model that offers predictive guidance for aquatic, drinking and recreational values of streams, specifically addressing at least sediment, nutrient and flow variations (“flashiness”) in order to provide better information for decisions regarding water quality and quantity. - Select a least-cost predictive tool that does not require data beyond what is already available, that is simple, and can be used by county staff, with preference given to STEPL and GWLF models for water quality. - Select a spreadsheet model to do “water balance accounting” in order to predict impacts of different management options on water quantity based on existing data.		Technical Subcommittee	Department of Building and Development	
	2. Ground Water Modeling – Work with the County to select a ground water model that offers predictive guidance for fecal non-point pollution and base flow, as well as		Technical Subcommittee	Department of Building and	

WATER RESOURCE MONITORING PROGRAM (WRMP)					
	answer questions regarding ground water availability in western portions of the County.			Development	
	Develop a cooperative agreement with USGS to provide input and assistance in the County's groundwater modeling and data synchronization efforts.				
	3. Floodplains -- Obtaining existing floodplain modeling from FEMA to use to predict impacts of different management options on floodplains.		Department of Building and Development	Technical Subcommittee	

1 Taken from Loudoun Building and Development, Water Resource Monitoring Work Plan, Task 2, paragraph 4.2

2 Taken from Loudoun Building and Development, Water Resource Monitoring Work Plan, Task 3.1, paragraph 4.3.1

WATER RESOURCE MONITORING PROGRAM (WRMP)					
D. Water Resource Modeling - Phase II					
	1. Water Quality and Quantity – Work with the county to inventory data available to decide which of the more sophisticated models would be most feasible to use giving preference to SWMM or HSPF. Work with the county on using a flexible, selective approach to select models in which more sophisticated models would be used for more complex, difficult watersheds.		Technical Subcommittee	Department of Building and Development	
	2. Ground Water – Work with the county to develop tools for decision making in the near term with preference given to MOD-FLOW or SUTRA 3-D models. - Work with the county when more data becomes available, including geological data, to select a more refined model to make more refined calculations including conceptualizing the county's ground water system. - Work with the county to establish a later Phase III modeling effort in which the county would eventually develop and use a ground water model that can predict availability of groundwater.		Technical Subcommittee	Department of Building and Development	
E. Watershed Management Plan Development					

WATER RESOURCE MONITORING PROGRAM (WRMP)					
	1. Watershed Planning – Work with the county to immediately begin watershed planning using currently available data at a minimum cost. • Design the plans to integrate land use policies and tools such as Zoning Ordinance, the Facilities Standards Manual, transportation planning, etc. • Design the plans to support compliance and enforcement of existing regulations. • Develop watershed planning strategies being mindful of Virginia’s Dillon Rule legal framework obtaining legal or expert opinion to resolve or clarify differing interpretations, such as inconsistent interpretations of court rulings. • Incorporate into the plans any TMDL regulations and guidelines.		Technical Subcommittee	Department of Building and Development	
	2. Regional Plan - Prepare a Regional Watershed Plan using existing data that is defined by the geographic boundaries of the watersheds in cooperation with neighboring jurisdictions and regional authorities. • Begin the regional planning process with Fairfax County who has begun developing watershed plans. • Continue the planning process with other authorities as the opportunity arises.		Technical Subcommittee	Department of Building and Development	
	3. Major Watershed Plans - Prepare Watershed Management Plans using existing data that are defined by both the political boundaries of the county and watershed boundaries for the twelve major watersheds in Loudoun County. • Provide communications and coordination regarding watershed plan development at the countywide level. • Prepare plans for: (1) Broad Run, (2) Goose Creek, (3) Limestone Branch, (4) Catoctin Creek, (5) Dutchman’s Creek and Piney Run, (6) Upper Bull Run, and (7) Cub Run.		Technical Subcommittee	Department of Building and Development	
	4. Subwatershed Implementation Plans: • Develop a prioritization system for the development of subwatershed implementation plans based on criteria guidelines provided in the DOC that selects the “most vulnerable” watersheds based on projected future impacts, with preference given to headwater subwatersheds, drinking water sources and vulnerability potential. Prepare preliminary Subwatershed Implementation Plans that are defined by both subwatershed boundaries and characterization of the subwatershed that provide implementation strategies to protect and restore water quality and stream health in		Technical Subcommittee	Department of Building and Development	

WATER RESOURCE MONITORING PROGRAM (WRMP)					
	specific portions of the subwatershed.				
	5. Authority for Implementation – Work with the county to specify and clarify who will implement each component of the Plan, by when and who has designated authority for implementation.		Environmental Coordinator	Technical Subcommittee	
	6. Concurrent Planning Approach – Work with the county to ensure that the regional, the 12 major watershed, and the subwatershed plans are developed in parallel using currently existing data, beginning as soon as possible.		Technical Subcommittee	Department of Building and Development	
	7. Updated Implementation Plans – Periodically revise the preliminary subwatershed implementation plans into more detailed, long-term implementation plans based on the detailed field survey results as they become available.		Environmental Coordinator and Technical Subcommittee		
	8. Incremental Implementation -- Work with the county to implement the subwatershed plans incrementally so that identified priority areas can be addressed first.		Environ Coordinator, Technical Subcommittee	Department of Building and Development	
G. Funding					
	1. Existing Funding – Work with the county to evaluate, prioritize and possibly reallocate existing funding resources as necessary to support an efficient watershed planning process.		Funding Subcommittee and Environmental Coordinator	Department of Building and Development	
	2. Dedicated Funding – Work with the county to create a dedicated source of funding to ensure a successful Watershed Management Planning effort and to help meet new regulatory compliance requirements. - Earmark a portion of the “rollback” tax (the tax assessed when property land use change is designated). - Consider slowing the rate at which personal property taxes are assessed to lessen the reduction that is used to offset the increase in assessed value (“equalize less”) and consider earmarking a portion of that for watershed planning.		Funding Subcommittee, Environ. Coordinator and County Administrator		
	3. Grant Funding -- Identify sources of grant funding and corporate sponsorship for both a short-term and long-term source of funding for watershed planning, but especially in the short-term while a long-term funding strategy is being created.		Funding Subcommittee		
	4. Targeted Funding -- Develop sources of funding for critical areas identified in the		Funding		

WATER RESOURCE MONITORING PROGRAM (WRMP)					
	different phases of the watershed plans.		Subcommittee		
	5. Bay Act Funding —Develop a White Paper regarding the possibility of Loudoun County adopting the Chesapeake Bay Preservation Act (CBPA), which may be a potential source of funding; giving careful consideration to any regulatory implications.		Funding Subcommittee, Environmental Coordinator and County Administrator		
	6. In-kind —Identify sources of significant financial contributions from in-kind sources such as citizen groups and the development community.		Funding Subcommittee		

V. EVALUATION OF SWMS STRATEGY

In the opinion of the survey participants the SWMS process improved communication among the stakeholders, improved trust, improved understanding about the issues, produced a more effective lasting outcome and would be recommended again for another issue.

The survey intimates but does not detail that there were concerns that important decisions by the SWMS effort due to the obvious time constraints and limitations of the four stakeholder work sessions.

Among the critical issues not decided for obvious expediency were controversial land planning, zoning and ordinance ones that will involve the Loudoun County Planning Commission, the entire Board of Supervisors and the Office of the County Attorney.

Possible outcomes from the SWMS outputs also needing greater resolution will be resource commitments and logistics by all SWMS stakeholders. The raw data in Appendix D demonstrates these concerns in that the lower than expected percentage exhibits downward pressure in the raw score.

APPENDIX A

LOUDOUN COUNTY STRATEGY FOR WATERSHED MANAGEMENT SOLUTIONS (SWMS)

Meeting Summary

February 22-23, 2006

Best Western Hotel, Leesburg, Virginia

The Strategy for Watersheds Management Solutions is designed to develop a strategic plan to manage, on a countywide basis, Loudoun's watersheds through a collaborative, consensus-building effort between various groups including government agencies (county, state and federal), active community and citizen groups, development and commercial groups, agricultural interests and non-governmental organizations. This strategic plan will be used to guide a subsequent, comprehensive watershed management plan.

Summary, Wednesday February 22nd

Approximately 50 people gathered for the first meeting of the Loudoun Strategic Watershed Planning Solutions (SWMS) Stakeholders Team. Board of Supervisors members Sally Kurtz and Stephen Snow welcomed participants to the meeting and then the project manager, Kelly Baty of Loudoun County's Department of Building and Development, provided an overview of the SWMS process. Both Supervisors indicated their support for the SWMS effort and the need for a plan that will protect the County's water quality and quantity for future generations. Supervisor Snow conveyed that he supported resource protection and expressed hope that this effort for protecting the County's resources would not be overtaken by other agendas. Supervisor Kurtz described her history growing up in the County and swimming in streams and lamented the fact that people can no longer drink the water from the County waterways. It was her expressed hope to see the County's water resources restored to a quality healthy enough to drink.

Following this opening facilitators Tanya Denckla Cobb and Christine Gyovai from the University of Virginia's Institute for Environmental Negotiation (IEN) provided an overview of the day.

SWMS Team members discussed protocols for meeting participation including the Team's specific purpose, defining how the group would make decisions by consensus, guidelines for discussion and how the media might be involved in the watershed planning effort. A summary of the meeting protocols and guidelines, including how decisions will be made, may be found at the end of the meeting summary.

The facilitators reviewed the IEN's summary of findings from interviews it conducted prior to the SWMS Team meeting. The IEN conducted 17 interviews of Team members representing diverse perspectives to build understanding about issues, opportunities and data needs and to help shape the agenda for the first SWMS meeting. Key issues and concerns identified during this interview process included: growth and development concerns; ideas for watershed plan implementation; citizen participation during the watershed planning process; creating clarity and shared understanding; identifying specific watershed issues or problems; garnering political leadership and support for the watershed plan; issues around policies, regulations, services; education and outreach; knowledge management; and developing clear watershed goals.

Key opportunities for the watershed planning process included: increased awareness, education and commitment; resource mobilization and organization; building broad-based support; harnessing the potential of Loudoun's citizens; developing long-term Loudoun County staffing capacity and

commitment; learning and implementing new ideas and technologies; and protecting the many good existing qualities of Loudoun's watershed.

The Team was invited to discuss IEN's summary of findings and to add any additional ideas, concerns or opportunities that were not yet identified. The following additional ideas, concerns and opportunities were offered by SWMS team members:

- Funding
 - ♦ Funding needs to be addressed and incorporated into all phases of watershed planning.
- Watershed Planning Process
 - ♦ It is important to establish at the outset of the planning process the goals, objectives and evaluation criteria as well as building in a strategy for revisiting and updating the plan over time so it is a living document.
 - ♦ The planning strategy should also identify what approaches to watershed planning do not work and/or are not applicable to Loudoun.
- Key issues to be addressed in the watershed planning process
 - ♦ The plan should define desired outcomes for the watershed plan and its implementation.
 - ♦ The plan should be designed to integrate land use policies and tools such as zoning ordinance, the Facilities Standards Manual, transportation planning, etc.
 - ♦ Water quantity and habitat are also important issues to address.
 - ♦ Recognize that the selection of different data collection methods may be driven by cost and the question of data needs to be explored further.
 - ♦ A cautionary approach is needed when considering watershed planning solutions, for example Low Impact Development (LID) is not a panacea for complex issues and problems.
 - ♦ Each watershed is unique and has its own carrying capacity that should determine whether it should have a preservation or restoration plan.
- Citizen involvement
 - ♦ Success of the plan will ultimately depend on people valuing the outcomes and contributing to watershed activities.
 - ♦ The plan should consider social justice issues to ensure that strategies are accessible to people of all socio-economic levels.
- Education
 - ♦ Avoid 'reinventing the wheel' by using existing education/outreach programs.
 - ♦ It is important that education and outreach effort stay independent of the political arena.
 - ♦ Education and training is an essential part of the plan, for example, educating and providing new septic owners with concrete skills and knowledge about monitoring and maintaining septic systems.
 - ♦ There is an opportunity for stream valley parks to serve as a venue for education and outreach.
- Regulations, ordinances, permitting:
 - ♦ Existing regulations need to be enforced.
 - ♦ The stormwater permitting program is still developing and other programs will need to be used in conjunction with the program for addressing watershed problems
 - ♦ Clarification is needed from the state to clarify issues where there are inconsistent interpretations of court rulings. For instance, with regards to alternative septic systems there are different alternative septic system approaches in Clarke and Fauquier Counties.
 - ♦ Watershed planning strategies should be made while being mindful of Virginia's Dillon Rule legal framework.
- Implementation:
 - ♦ There is the need to specify and clarify who will implement what, and who has authority for implementation.

- Reality and limitations:
 - ♦ It was mentioned several times and in a number of ways that the SWMS Team may not have all of the tools and expertise to conduct this endeavor and that the SWMS Team should be willing to seek out the necessary expertise to assist with the elements of the watershed management strategy, e.g. legal issues dealing with the state's Dillon Rule, hydrologic-technical information for models and independent analysis of data, etc.

Following the morning discussion of ideas and concerns for the strategy for watershed planning three presentations were given in the afternoon. Copies of all the presentations are available by contacting Jason Espie at IEN at jespie@virginia.edu or 434-924-0285.

The first presentation on "The State of Loudoun's Streams" was given by Darrell Schwalm of Loudoun Watershed Watch. Comments and questions after the presentation included:

- Some of the livestock and agricultural data used in the presentation are outdated. Loudoun County staff said that any data they have is available to citizens and more up-to-date agricultural data could be available.
- State standards are needed for turbidity (a measure of the cloudiness of water) and dissolved oxygen and standards need to be developed for local laboratories to gather this data.
- There was general discussion regarding the suggestion in the presentation for a Loudoun Water Management Authority.

The second presentation on "Defining Our Watershed Through Mapping Capacity" was given by Ed Erwin and Trent Small from Loudoun County Office of Mapping. Comments and questions after the presentation included:

- The speakers asked for guidance from the SWMS Team in identifying the data needed and what questions to ask in order to create maps that will answer those questions.
- There was a question about whether the County's data is compatible with other organizations and agencies (such as an overlay of the Catocin TMDL). This issue will be addressed at the next SWMS Team meeting.

The third presentation, "Water Forum Overview", was given by Todd Danielson of Loudoun County Sanitation Authority. Comments and questions after the presentation included:

- It is important to integrate and connect the efforts of the Water Forum to the Loudoun SWMS process as they are dealing with similar issues. The question is *how* to integrate the two efforts.
- An education center in Ashburn that LCSA is planning could be an excellent resource for the SWMS process.

Summary, Thursday February 23rd

The second day of the meeting began with a welcome of new participants, a brief recap of the previous day's progress and an overview of how the SWMS process fits into the larger watershed planning process. The following graphic outlines the conceptual framework of the SWMS process:

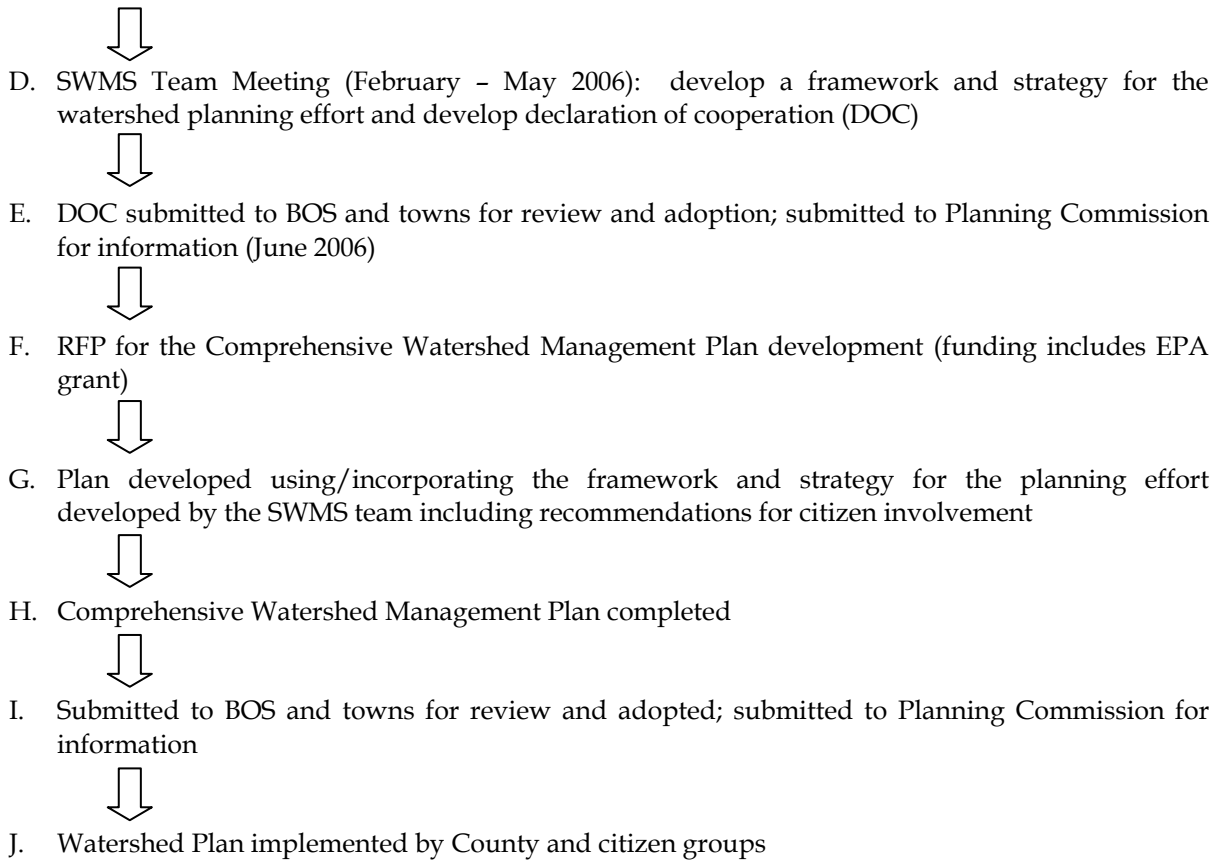
A. Vision and Need for Watershed Planning



B. Loudoun County Grant for Strategic Planning (2003)



C. IEN contracted to Facilitate Strategic Planning; IEN Interview with Stakeholders (January - February 2006)



The facilitators noted that commitments by SWMS Team members could cover such things as:

- A commitment to continue to participate in E, G, H and I
- A commitment to obtain and /or share data in G and I
- A commitment to partner on grant for F, G and I
- A commitment to partner or conduct outreach and education during E through I

Following this overview, Team members expressed a number of concerns. A major concern among Team members is that the SWMS effort and recommendations not be wasted, ignored or marginalized.

In response to the facilitator's comment that the development of a watershed plan for all of Loudoun County (Phase F) could take a number of years based on the experience of Fairfax County a preference was expressed that Loudoun County *not* take years to produce or implement it watershed plan. Additionally, some members noted that certain aspects of watershed protection will need to move forward regardless of the pace of the watershed planning process.

Some members expressed particular support for the fact that the SWMS process will result in a document that will highlight areas of agreement as well as long term stakeholder commitments and engagement.

For the remaining two SWMS meeting some participants suggested that more participants should be invited from the development and building industry as well as more landowners, farmers and agricultural community representatives. One technique would be to identify the largest landowners along river corridors, perhaps using GIS, who could then be invited to participate. The facilitators noted that 125 people had been invited, including many people from these sectors, who either had not

responded or been able to attend. They assured the Team that further efforts would be made to include representatives of these interests.

The facilitators also reviewed the updated process for consensus decision-making reflecting the Team's comments (see the meeting protocols at the end of the summary for details). The Team agreed by consensus to use the revised consensus decision-making definition and process.

The Watershed Today: Current Activities and Knowledge

A presentation on "Impaired Streams (TMDLs – Total Maximum Daily Loads)" was given by Bryant Thomas from the Department of Environmental Quality. The discussion points following this presentation include:

- Two TMDLs have been completed in Loudoun County and only one implementation plan has been completed (Catoctin Creek).
- Mr. Thomas clarified the difference between a TMDL study and establishing an implementation plan for a TMDL. The TMDL study identifies the types of pollutants and the amount of pollutants that need to be reduced in order for the stream to reach its water quality goal, e.g. swimmable, fishable, etc. The implementation plan takes this information and identifies what various contributors and stakeholders will do to help achieve the targets for pollution reduction. An implementation plan is essential to put "teeth" into the TMDL study.
- In response to a question about what specific actions might be included in an implementation plan, Mr. Thomas explained that methods to reduce bacteria in streams include keeping cows out of the streams, planting riparian buffers, establishing no-graze zones near streams and other agricultural Best Management Practices (BMP) and wildlife BMP. An EPA demonstration grant was suggested as one method for farmers to put BMPs in place. In addition, updating aged septic systems is an important action that can be taken, as well as repairing or removing direct pipe discharges into the stream.
- One participant asked what percentage of Loudoun County's water is monitored by DEQ. The answer is complex and depends on the type of monitoring in question as there are several different types of monitoring. There is no easy, simple answer to this question.

Next, Gem Bingol from the Piedmont Environmental Council gave a presentation on "Watershed Protection and Land Conservation." Following her presentation Team members asked numerous questions. One participant asked why someone would be interested in conservation easement. Ms. Bingol summarized the benefits of conservation easements, including a direct tax benefit for estate planning or the potential to sell tax credits for those that don't need or qualify for tax breaks. Another participant asked where one should take a report like the Goose Creek Vulnerability Analysis, who would look at it, evaluate its findings and act on its recommendations? The response was that this strategic watershed planning process aims to answer those questions including what analysis or information currently exists, who is responsible for addressing the issues and problems, etc.

A concern was raised that local governments are usually over-committed. There is usually a finite number of people and infinite projects and thus it will be necessary to get guidance from the Board of Supervisors and County Administration on what tasks have priority. Other team members explained that the Fairfax County watershed planning effort received Board of Supervisors approval very early on, when it approved the initial grant in 2003, and resources and staff were allocated for planning as a result of this support. Staff members at the Fairfax County Department of Public Works and Environmental Services (DPWES) were charged with coordinating the watershed strategic planning effort. It was noted that the Northern Virginia Soil and Water Conservation District also plays a role in Fairfax County helping with citizen outreach and education and monitoring activities.

A presentation on the “Goose Creek Source Water Protection Plan” was given by Tony Dawood of Loudoun County Sanitation Authority. Following this presentation some Team members applauded the LSCA Goose Creek source water study as very helpful and asked how it has been used by the County. Mr. Dawood and other Team members explained that some study recommendations are being implemented, such as environmental review of permits and land use requiring a 300 foot buffer as well as the recommendation that dry ponds not be used in new development in the County Facilities Standards Manual. However, some members suggested that the study has not received leadership at the Board level to direct County attention to protecting source water in a clear, focused manner.

Concern was expressed that studies are now showing that streams and reservoirs are contaminated with pharmaceuticals and other human-related contaminants at low levels and that water treatment plants do not yet treat for these chemicals. When they do the cost of drinking water will rise dramatically and then citizens will understand and rally behind the importance of efforts to protect water quality. Also, another member noted that we do not have to wait for this to happen as studies show that citizens do and will support raised taxes or bonds to protect drinking water and that holds true throughout the nation.

Another participant noted that developers need to know what is predictable and that the “rules of development” need to be communicated clearly and not changed midstream. The need for more BMPs throughout the County needs to be communicated clearly and consistently.

Next, Jason Espie from IEN presented a draft “Inventory of Watershed Activities in Loudoun County” which IEN was contracted by Loudoun County to develop. The inventory is an effort to survey and compile all relevant activities, organizations, studies and sources of data relating to watersheds in Loudoun County. The inventory was presented as a work-in-progress and Mr. Espie noted that IEN needs input from all Team members to complete this inventory. Information was obtained from stakeholder interviews, web searches and documents, studies and proposals forwarded to or obtained by IEN staff. It was acknowledged that much work is needed and an appeal was made to participants for input, additions and corrections feedback to improve and complete this inventory. **The SWMS Team was asked to send input on the inventory to Jason Espie at jespie@virginia.edu.** Some initial comments from SWMS Team members include:

- The Loudoun County Park Authority has already assembled acreage for stream valley trails and this should be included in the inventory.
- It is important to include ground water information in this inventory as well and/or be clearer about where it is already covered in the inventory.
- Think about also creating appendices that can sort information in different ways such as all those projects related to each organization.

Reviewing Watershed Planning

The SWMS Team next moved to a discussion of watershed planning. Christine Gyovai presented an “Overview of Watershed Planning.” One Team member asked how watershed plans address the Not In My Back Yard (NIMBY) factor. The facilitators acknowledge that NIMBY stance by people are challenges and noted that the motivations that drive NIMBY can be transformed into NIMBI, or Now I Must Become Involved. Another Team member suggested that Loudoun’s watershed planning process should look closely at possible impediments for watershed planning and reach agreement on how to be successful. Another Team member suggested that it will be necessary to determine who is taking the lead for watershed planning in Loudoun.

Tanya Denckla Cobb presented “Two Models for Watershed Planning,” a handout that compares and contrasts two watershed planning efforts in Virginia, one that is for highly developed Fairfax County and

one for very rural Page County. Team members discussed the applications and relevancy of these models for Loudoun's watershed planning effort.

- The Team discussed the very different growth rates between Loudoun and Fairfax Counties. There is less developed land in Loudoun and Fairfax is far more built-out. Not as much modeling may be necessary in Loudoun and significant data already exists, which was not the case for Fairfax. Historically, Fairfax initiated its first watershed plan in response to development pressures and Loudoun may be at the same point not. A question was raised about the accuracy of the handout's growth rate of 41% for Loudoun. The facilitators clarified that the growth rate is for the time period of 2000-2004. (Note: information on growth rates obtained from: <http://quickfacts.census.gov/qfd/state/51/51107.html>).
- Team members asked about how funds are raised for the watershed planning in Fairfax. Fairfax allocated \$0.01 from every real estate property tax dollar for stormwater planning and infrastructure. \$18 million was raised in 2005 and this continues to remain a dedicated revenue stream. In addition, the pro-rata share contributions from private developers complement the Capital Improvement allocations so the funding is both public and private.
- One Team member suggested that the Declaration of Cooperation should address how to meet state TMDL regulations.
- Another Team member suggested that Loudoun has a lot of area to protect and preserve and that it would be beneficial to look at Montgomery County as a model for watershed planning. Specifically, it would be helpful to look at its county wide stream assessment strategy and tools such as protection are design, overly zones, etc.
- A Team member suggested that SWMS address how Loudoun should prioritize its diverse watersheds. There are critical areas, restoration areas and sensitive areas and the SWMS can outline how priorities should be ranked.

The discussion on the Fairfax and Page County models segued into an overview of Fairfax County Watershed Plan given by Matt Meyers, Fairfax County Department of Public Works and Environmental Services, Stormwater Division. The questions, comments and discussion on Fairfax's experience continued. The main discussion points were as follows:

- What were Fairfax County's motivations for its current watershed planning effort? Fairfax's first Watershed Plan, developed in the 1970s, primarily focused on quantity and flooding issues; this plan was outdated and had a number of unimplemented elements. It was widely recognized that it was time to update the Watershed Plan. Fairfax's current watershed planning effort began about 5 years ago at a kickoff meeting in 2001.
- It can be beneficial to take time to do the watershed planning process in stages and not all at once. The Rapid Stream Assessment Technique (RSAT) was used by Fairfax and may prove useful for Loudoun. About 30% of Fairfax's planning cost is for modeling, though this level may not be necessary or possible in other counties.
- In Fairfax the starting watershed analysis and public outreach were done in tandem and delays in modeling ended up causing delays in the public involvement process. Ideally the watershed analysis would precede the formation of a Citizen Advisory Committee.
- Unlike Loudoun, Fairfax is dealing with a lot of older infrastructure and legacy development with no, or poor, stormwater management controls. Fairfax is now addressing more restoration of damaged streams or retrofitting of outdated or failing stormwater management infrastructure. Loudoun has more to protect and the SWMS should address this.
- EPA resource: "Handbook for Developing Watershed Plans." http://www.epa.gov/owow/nps/watershed_handbook/
- EPA resource: Rapid Bioassessment Protocol (EPA). <http://www.epa.gov/owow/monitoring/rbp/>

- Did the Chesapeake Bay Preservation Act (CBPA) or other regulatory drivers push the Fairfax planning efforts? Yes, the CBPA requirements were a motivation for the recent Fairfax watershed plans. The National Pollutant Discharge Elimination System (NPDES) requirements and TMDLs are taken into account in the Fairfax plan.

Creating a Common Vision for Loudoun's Watershed Plan

The facilitators introduced a draft outline of a Declaration of Cooperation (DOC). The facilitators proposed that the outcome of the SWMS Team work could be a DOC that outlines the SWMS Team's consensus recommendations for a strategy for Loudoun's watershed planning effort. The draft outline was developed by IEN's stakeholder interviews and identifies the major topics that could be important for Loudoun's watershed planning strategy. As the SWMS Team continues its work the topics for the DOC may expand or shrink as needed. The Team would begin by discussing in three small groups the following major topics:

- o Small Group #1: Goals and values for watershed planning and mechanisms for citizen involvement during the watershed planning process.
- o Small Group #2: Watershed planning elements, flow of activities and criteria for prioritization.
- o Small Group #3: County coordination and involvement of decision makers.

Each group of SWMS Team members rotated through each topic, providing everyone an opportunity to contribute to each topic. Summaries of each of the three working groups follow.

Report of Group 1: Overall Goals, Values and Mechanisms for Citizen Involvement

The SWMS Team was asked to develop guiding principles and values that should drive Loudoun's watershed planning process. It was also asked to articulate principles and ideas for citizen involvement in the planning process. In three successive small groups the SWMS Team engaged in a lively discussion during which a wide array of ideas was developed. Below is an initial draft summary of the comments from the SWMS Team members who were encouraged to brainstorm ideas, but not yet evaluate them.

Guiding Principles for Loudoun's Watershed Planning Process

- Create a realistic, achievable, implementable and balanced plan that is science-based.
- Create a flexible, dynamic and simple plan.
- Address resources for implementation in the watershed planning process (both monetary, in-kind and staff).
- Consider economic development, jobs and housing needs (current and future) in the creation of the plan.
- Build consensus among the diverse views.

Values That Should Drive Loudoun's Watershed Planning Process

- Provide clean drinking water for all of Loudoun's citizens.
- Plan for the needs of future generations.
- Create mechanisms to enable all of Loudoun's citizens to be engaged, informed and active in watershed planning.
- Preserve economic development opportunities in the watershed.
- Recognize and foster appreciation for the intrinsic value of nature through stewardship activities and other means.

Goals for Loudoun's Watershed Plan

- Protect and restore water quality so that Loudoun streams are fishable and swimmable and to meet the goals of the Chesapeake Bay Preservation Act.
- Protect water supply for current and future demands for both ground water and surface water through private and public means.
- Preserve the high quality of life that Loudoun offers including recreational opportunities, viewshed, etc.
- Protect public and environmental health.
- Protect habitat especially for threatened, rare or endangered species.
- Preserve functions and benefits of natural resources. Recognize the economic value of a healthy watershed.
- Preserve farming as well as opportunities for economic development in Loudoun County.
- Use a “smart growth” approach to planning.
- Raise awareness of citizens and engage citizens in planning efforts.
- Coordinate efforts, data and resources within the watershed.
- Ensure that the watershed plan is in compliance with existing regulations/ordinances and enforce/support those regulations and ordinances.

Citizen Involvement in the Watershed Planning Process

- Consider using 5 to 12 citizen sub-watershed committees, one for each sub-watershed plan. The selection process for the citizen committees needs to be addressed.
- Consider establishing a countywide committee or task force that would help guide the larger watershed planning process; this committee could include liaisons from the sub-watershed committees and could also include resource people and Loudoun County staff.
- Consider using Loudoun Watershed Watch (LWW) as a forum for citizen engagement in the County. If this were to occur the LWW would need to expand its involvement of the development and agricultural community. Another possibility would be to have representatives from the sub-watershed committees serve on LWW.
- Consider using Fairfax County’s model for citizen involvement (a presentation about this model will be provided at the March SWMS meeting).
- Create effective ways to inform, educate and engage the broader public in the watershed planning process (i.e. through website, environmental indicators, workshops, forums and resources). Engage the public in ways that make it easy for people to participate.
- Involve schools and use the schools and students as part of the citizen involvement in the planning process.
- Engage other existing sub-watershed groups (e.g. Catoclin).

Objectives or Actions for the Watershed Plan

In addition to the guiding principles, values and goals SWMS team members also began to suggest ideas for specific objectives and actions for the watershed plan. While such detail is better suited for the actual watershed planning effort, in the interest of capturing and saving all ideas for future watershed planning, these suggestions are included below.

- Economic Development and Smart Growth
 - o Ensure that development is site-appropriate and minimize the impacts of growth on natural resources.
 - o Preserve property values.
 - o Balance the watershed planning process; understand impacts of the watershed planning process with economic development, jobs and housing needs with the expected increase in the growth rate in Loudoun County.
 - o Establish a policy of “no net loss” of pervious surface in the sub-watershed.
 - o Integrate the watershed planning process with the land development process, such as through special protection or overlay districts.

- o Prioritize agricultural activities within the County and support farming monetarily.
- Quality of Life
 - o Create and preserve public access to streams, waterways and corridors.
 - o Create a linear stream valley park system that provides for buffer protection, recreational access and educational opportunities.
 - o Promote greener lifestyles – e.g. green building, transportation and niche farming.
 - o Promote healthy lifestyles.
 - o Create mechanisms to support economically disadvantaged citizens so the needs of the watershed can be met (e.g. develop resources for LID to be applied at the individual home scale).
- Regulations
 - o Ensure regulation awareness and compliance.
 - o Make sure regulations and ordinances support the watershed plan.
- Public Involvement
 - o Create ways that make it easy for citizens to be involved in the planning process, such as through attending a meeting of a citizen’s group that might be difficult to reach otherwise.
 - o Develop an educational component of the plan to raise awareness of citizens.
 - o Engage citizens in the watershed planning process and implementation and “go beyond the choir” in outreach efforts within the watershed to include people that might not otherwise be involved in the effort.
 - o Have a strong education component in the watershed planning process to create a more informed citizenry (such as with septic system educational effort).
- Water Quality
 - o Protect existing well water supply during the permitting and construction of new water wells.
 - o Prioritize areas of focus within watersheds specifically in regard to source water protection.
 - o Protect, restore and maintain healthy aquatic ecosystems (determine health of streams by macroinvertebrate studies and other means).
 - o Maintain and restore riparian corridors.
 - o Preserve wetlands.
 - o Mitigate stream and wetland impacts within Loudoun County.
 - o Develop enhanced stormwater design criteria.
- Data Management
 - o Focus on or give priority to rectifying pre-existing conditions in the watershed planning effort (retrofits).
 - o Inventory, map and monitor all water resources within the watershed.
- Plan Management
 - o Loudoun County Government (BOS) create staff and a natural resources department empowered to do environmental reviewing and design (with that capacity).
 - o Evaluate current and future planning and funding options to realize plan.

Report of Group 2: Watershed Planning Elements, Flow and Criteria for Prioritization

Before examining the process elements and criteria of a watershed plan the Team felt it was necessary to briefly explore the overall purpose of making a watershed plan. The plan they envisioned would maintain what is good, protect what is sensitive such as headwaters or trout habitat, and restore what is degraded or damaged. Ensuring clean drinking water quality and supply was important. Planning for recreation and habitat along rivers could also improve water quality. After this brief exploration or purpose the groups deliberated on the overall process elements and criteria for prioritization.

Process: A Countywide Assessment

There was much support for a countywide assessment to quickly identify threats to the watershed and opportunities for action. This “snapshot” assessment could be conducted based on assembly of existing data and resources and it should be done quickly in a triage approach. The results of this countywide assessment would characterize the many diverse sub-watersheds of Loudoun County and identify areas for priority attention. There was the sense that this should be a quick assessment, as the first part of a larger, on-going planning, implementation and monitoring process that comprises the entire watershed plan.

Protocols

A number of possible protocols for the countywide assessment were suggested. A countywide assessment should consider each of these methods, or possible combinations thereof, for Loudoun County.

- The Center for Watershed Protection’s (CWP) Rapid Stream Assessment Technique (RSAT) methodology is a good model to adapt for Loudoun. This RSAT Phase II study is already underway and should be completed by June 2006. The RSAT studies have been used for a number of other watershed or water supply planning efforts including Linganore (Maryland) and Fairfax Counties.
- A Probabilistic Design methodology was also suggested for the countywide assessment. Probabilistic Design is a methodology used by the EPA that carefully selects statistically defensible monitoring spots across a watershed. It was used by VA DEQ for a statewide rapid watershed assessment and could be adapted for a county-level assessment.
- The CWP also has a Vulnerability Assessment methodology that was used for the Goose Creek Vulnerability Assessment that includes such things as analysis of impervious surfaces, forest coverage and riparian buffers. See http://www.cwp.org/Vulnerability_Analysis.pdf. It was debated whether the time, money or detail of the vulnerability assessment method is feasible for a countywide snapshot assessment or is more applicable to further sub-watershed analysis.

Data Assembly and Analysis

- There is a need to quickly gather and assess existing data for use in the countywide assessment.
- Data collection protocols used by existing studies or state endorsed monitoring guidelines should be followed.
- A number of data and studies were identified for an assessment and characterization effort. These include, but should not be limited to, the following:
 - o Nutrient loads and source determination (development, agriculture, etc.)
 - o Fish
 - o Groundwater levels
 - o RSAT II studies, TMDL reports, Goose Creek Vulnerability Study
 - o Biological and visual
 - o Sediments. There are some gaps in sediment data.

Other Assessment Considerations

The countywide assessment should include or consider the following:

- Evaluate land use impacts such as solid waste siting, waste treatment and future roads.
- Determine the location of surface water sources.
- Assess potential areas of future development. One possible indicator is zoning densities for potential build-out capacity.
- Carefully consider the integrity of existing data before using it in any assessment. Not all existing data is relevant to the assessment’s purpose and some is old or perhaps faulty.
- It was cautioned that bacteria are not necessarily the best measure of watershed health.
- RSAT would benefit from consistency across assessment teams as was learned from the Fairfax County RSAT and planning experience.

- Biological and visual assessments are perhaps the most feasible in terms of timing and cost effectiveness.
- Groundwater modeling is needed especially for western Loudoun. USGS has data and the County has well, soils and other testing data that can be used in modeling. Modeling usually takes more time and costs more money and thus may not be feasible for the “snapshot” assessment but should be considered for the plan itself.
- Surface water modeling would help determine the level of impact from projected build-out and increases that result with imperviousness.

Criteria for Prioritization

The countywide assessment should identify priority actions and areas based on the following suggested criteria and considerations.

- Meeting state and federal regulation requirements is a top priority.
- Priority should go to protecting undeveloped or minimally developed watersheds.
- Development pressure areas or areas on the cusp of change for future build-out are high priority.
- Efficiency is a priority when choosing where to start. This is the “bang-for-the-buck” argument for prioritization where watersheds with the greatest potential for efficient reduction of nutrients (MS4 offsets, nutrient trading) should receive implementation priority.
- Sensitive areas need priority such as headwaters, groundwater recharge areas and wetlands.
- Drinking water supply recharge areas are a priority.
- Areas where human health concerns exist from possible septic or groundwater contamination are a priority.
- Any prioritization should take into account the different characterization amongst sub-watersheds such as size, urban, rural, east, west, soil type, farming, drinking water supply shed, etc.
- VDOT corridors are a concern from traffic impacts or stream crossings.
- Any plan should be incremental so that identified priority areas can be treated first.

Other Monitoring Suggestions

- Beyond the countywide assessment and sub-watershed characterization there is a need for a set network for on-going monitoring stations to assist with the plan’s evaluation and updating.
- Maintaining ecological flows is a concern for the future of Loudoun’s rivers. A gauging network would help monitor this.

Report of Group 3: County Coordination and Involvement of Decision Makers

The SWMS Team was asked to develop ideas and options for management of the complex task of watershed planning. Based on IEN’s interviews a common concern among County staff and stakeholders alike is how data will be shared, how communication at the staff and leadership levels will be managed, how decision makers could or should participate and where leadership for the watershed planning will reside. Currently there is no clear “home” or designated authority for watershed planning. While the current phase of the project is being stewarded by the Department of Building and Development concern expressed by numerous Team members is that accountability for follow through and implementation will be lost without clear and formal designation of responsibility and authority.

Team members identified the following options and discussed their relative advantages and disadvantages.

- A. Create a new Environmental Services Department that would coordinate watershed planning. Advantages to this option are that i) as the county grows the need for this department will only increase, and ii) watershed planning would be placed in an appropriate home that makes sense. The disadvantages are that i) this would need funding and would therefore not likely be

supported by the BOS, and ii) asking for something that is not likely to happen is not going to result in the needed outcome, i.e. designation of formal authority and responsibility for watershed planning.

- B. Formally designate the Environmental Coordinator (Bruce McGranahan) as the formal coordinator for watershed planning. Advantages of this option are that i) the Environmental Coordinator currently is in the process of defining his role and therefore would be able to take on this responsibility fairly easily, ii) is able to work with all of the various departments as needed, iii) reports directly to the Deputy County Administrator, iv) by virtue of the above, recognizes the cross-department scope of watershed planning, avoids turf battles and offers the flexibility and authority needed for watershed planning. The disadvantage of this option is that the technical support for watershed planning will need to be drawn from different departments.
- C. Formally designate an existing department as the coordinator for watershed planning. Advantages of this option are that i) a new department would not need to be created, and ii) watershed planning would not be dependent on a specific position. Disadvantages of this option are that i) no existing department is perfectly suited to take on the task of watershed planning, and ii) could result in "turf battles" between departments and compromise the collaboration needed for watershed planning.

Overall, considering these various options, the Team members agreed that Option A was not truly viable at this time although it would be everyone's ideal solution over the long-term. Of Options B and C, Team members seemed to gravitate toward Option B as more preferable.

With regard to involvement of decision makers in the watershed planning process the SWMS Team strongly agreed that it is vital for the Board of Supervisors (BOS) to be aware and engaged throughout the process. In addition, the Team suggested that the towns be treated in the same manner as the BOS, provided the same opportunities for involvement and the same presentations. Other decision making bodies were identified as important to keep involved through the process: the Planning Commission, the Water Resources Technical Advisory Committee (WRTAC) and the Transportation and Land Use Committee (TLUC) as well as County Administration. Specifically the SWMS Team recommended that presentations be made to the following decision making bodies during the remainder of the SWMS process as well as throughout the comprehensive watershed management planning process: the BOS, the Planning Commission, incorporated towns (possibly via the Coalition of Loudoun Towns (COLT)), the Water Resources Technical Advisory Committee (WRTAC) and the Transportation and Land Use Committee (TLUC). Presentations should be made in April 2006 prior to the SWMS Team final meeting in May 2006 and again in late June 2006 to present the SWMS Team final Declaration of Cooperation. At this presentation the SWMS Team suggested that the BOS be asked to indicate via straw poll its ongoing commitment and support for the next phase of the watershed management planning process. Further, the SWMS Team recommended that presentations be opened by the County Administrator with technical parts of the presentation given by Bruce McGranahan or Kelly Baty. Lastly, SWMS Team members and stakeholders in the watershed planning process should also be included in the presentations to give voice to the wide representation involved during the planning process.

Review Progress, Agenda for Next Meeting

The conclusion of the meeting was spent reviewing the progress made, homework assignments and agenda and presentations or information needed for the next meeting.

Three committees were identified to develop language suggestions or proposals for consideration by the full SWMS Team for three specific areas:

1. **Scoping Committee** to determine a draft scope for the watershed planning effort (the number of watersheds to include, how divided/combined). *Otto Gutenson, Mark Peterson, Darrel Schwalm and David Ward.*
2. **Funding Committee** to develop a funding strategy. *Kelly Baty, Charles Faust and Ed Gorski.*
3. **Goals Committee** to review IEN's draft goals/values/citizen involvement language for the strategy for watershed planning. *Gem Bingol, Jim Christian, Todd Danielson and Dave Snellings.*

Committees need to provide their draft language to the facilitation team by **Friday March 17.**

Team members offered the following ideas for presentations at the next meeting:

- Overview of Montgomery County, Maryland's watershed planning process
- Information on prioritization and a low cost approach for watershed assessment
- Loudoun Parks – plans for public uses for stream valley trails
- Mandates/regulations for statutory requirements for water supply planning and nutrient controls
- Success stories of environmentally sensitive development that protects water quality
- Status of groundwater, how it plays into watershed planning (hydrologic monitoring and stream flow)
- Fairfax public involvement model
- Modeling – how technical/ups-downs of using different models

Further discussion about the SWMS meeting process included the following comments:

- A participant raised the caution that this is a strategic planning process; the Team is not actually making a plan at this stage and this is important to remember for the remainder of this effort.
- The next meeting should examine further how to establish priorities based on a countywide basis or by sub-watershed basis.
- Team members were asked to begin talking within their respective organizations about organizational commitments that could be included in the final "Declaration of Cooperation" and to bring beginning drafts of these commitments to the March meeting.
- All members of the Board of Supervisors will be informed of the next meeting and invited to attend.
- SWMS presentations are needed for the Water Resources Technical Advisory Committee (WRTAC) and the Land Use and Transportation (LUTC) before the final May meeting. These presentations should ideally be scheduled for April. Charlie Faust volunteered to get SWMS on the WRTAC agenda for the 4th Monday in April. Bruce McGranahan will be asked to schedule presentations for all groups.
- If participants cannot attend the next meeting please identify and alternate and inform the facilitators.

Participant Commitments and "Homework" for March

1. What level of technical modeling is needed and appropriate? For background consult the following two resources:
 - EPA's "Handbook for Developing Watershed Plans" to review ideas for model selection.
 - Center for Watershed Protection's material entitled "Methods for Developing Watersheds."

2. What is the best scope for Loudoun's watershed planning: one countywide watershed plan, five different watershed plans or 15 different watershed plans?
3. Using the prioritization criteria developed by the SWMS Team should specific watershed problems be prioritized first on a countywide basis or should sub-watersheds overall be prioritized based on the number of problems in those sub-watersheds?
4. SWMS Committees to draft language; draft language due by Friday March 17. Please e-mail draft language to Christine Gyovai at christineg@virginia.edu.
5. Review and provide additions to the Inventory of Activities by Friday March 10 to Jason Espie at jespie@virginia.edu.

The next meeting of the SWMS team is March 23rd and 24th at the Best Western Hotel in Leesburg, Virginia.

LOUDOUN COUNTY

Strategic Watershed Management Solutions (SWMS) Protocols and Ground Rules for the SWMS Team

Purpose and Scope of Process	The SWMS Team purpose and scope is to: • Develop a framework and shared vision for the Loudoun County watershed planning process as well as shared goals and vision for the Loudoun watershed. • Represent the views and concerns of Loudoun’s citizens and stakeholder organizations and to inform these respective organizations of the progress and decisions made by the SWMS team. • Develop or address the development during the watershed planning process of indicators for water quality and quantity. • Develop criteria for prioritizing watershed planning activities. • Identify ways that Loudoun organizations and citizens can work together through the watershed planning process. • Define the scope of data that needs to be analyzed during the watershed planning process, identify sources of these data as well as data gaps (needs) and identify types of data that might be useful in the future. Develop a strategy for data compilation and analysis. Develop strategies to make data available to stakeholders. Define the nature of the watershed planning process – politically or watershed based. • Identify sources of funding for the watershed planning process and implementation activities. • Identify areas of agreement as well as issues that require further discussion to identify resources that can be shared and to develop commitments that can be made for participation and contributions to the watershed planning process.
Participation	SWMS Team Membership: See attached list of members. Alternates: Alternates may be appointed by representatives of civic groups and organizations. Alternates may participate in discussion and consensus decisions only in the absence of the official SWMS Team member. Resource Members: Loudoun County staff members who are not official Team members will serve as resource members. They may participate fully in the discussions and will share information about issues, constraints and possible impediments to implementation. They are expected to be candid in their views. Observers, Other Interested Parties: Meetings are open to observers. Comments by observers may be offered in writing or orally (provided time permits) at the end of each session. Observer comments may also be invited during the session. Media: Meetings will be open to the media. Participants may speak about their own views to the media but should not represent the views of the SWMS team. Information may be provided by Loudoun County for media coverage before and/or after meetings.

	Public Access: Information about the SWMS effort should be made available to the public such as on the Building and Design departmental website.
Roles and Responsibilities	All Team members shall have equal voice and status. Other participants in the SWMS work can serve in an advisory and advocacy position. Participant Responsibilities to Constituents: Members agree to obtain guidance from their constituents and communities so that they can accurately represent the views and interests of their constituents and communities. They will communicate information learned at meetings and will present SWMS Team decisions to their constituents for endorsement. Media Contact: SWMS Team members who speak outside of the meetings will speak for themselves and express their own views. They will not represent an official SWMS point of view. The SWMS program manager and facilitators may describe the group process and share materials with the media as directed by the group.
Sharing Information During and After Meetings	Members are encouraged to discuss issues raised during the meetings with their constituents without attributing positions and attitudes to specific people. Members will be open and candid in their views. Members will speak with focus and brevity so that everyone may have an opportunity to speak. Cell phones will either be turned off or calls taken outside the meeting room. One person speaks at a time.
Decision Making	Consensus: All decisions of the SWMS Team are understood to be recommendations for Loudoun County's eventual comprehensive watershed planning effort to be submitted to the Board of Supervisors and other decision making entities for their consideration and action. The SWMS Team will make key decisions by consensus and at any time Team members may request time to consult their organizations prior to polling. Consensus means that all members can live with and support the decision. If one member cannot live with the decision consensus is not achieved and the group will continue working on the issue or it will be tabled.
Implementation	The shared vision and framework for Loudoun County's watershed planning effort will be incorporated into a document that will guide the watershed planning (a Declaration of Cooperation or Memorandum of Understanding will be considered and discussed by the SWMS Team).
Timetable	The SWMS Team will meet three times: February 22-23, March 23-24 and will conclude it work on May 11.

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LOUDOUN COUNTY STRATEGY FOR WATERSHED MANAGEMENT SOLUTIONS (SWMS)

Meeting Summary

March 23-24, 2006

Best Western Hotel, Leesburg, Virginia

Project Overview

The Strategy for Watersheds Management Solutions (SWMS) is designed to develop a strategic plan to manage, on a countywide basis, Loudoun's watersheds through a collaborative, consensus-building effort between various groups including government agencies (county, state and federal), active community and citizen groups, development and commercial groups, agricultural interests and non-governmental organizations. This strategic plan will be used to guide a subsequent, comprehensive watershed management plan.

Summary, Thursday March 23rd (full day)

Opening Session

Over 50 people gathered for the second meeting of the Loudoun Strategic Watershed Planning Solutions (SWMS) Stakeholders Team. Christine Gyovai and Tanya Denckla Cobb, meeting facilitators from the Institute for Environmental Negotiation (IEN) at the University of Virginia, welcomed participants and provided an overview of the process. The group reviewed the February meeting summary and group meeting protocols. The latest draft of the Declaration of Cooperation (DOC) was introduced. The DOC was emphasized as the key, final product of the SWMS process. Elements agreed upon by the SWMS Team from the February meeting were incorporated into the draft DOC and input from this meeting will be used to further craft language, shape agreements and identify stakeholder commitments for the final DOC. Discussion points regarding the DOC follow.

- *Participation:* The group agreed that it is important to ensure diverse stakeholder representation. The facilitators informed the team that they had worked to identify and invite more people from the business, development and farming community per requests from the February meeting. A suggestion was made to invite someone from the school system, perhaps Evan Mohler, the Assistant Superintendent of Construction. It was noted that there needs to be more representation from towns. A presentation about the SWMS effort will be made to the Coalition of Loudoun Towns (COLT).
- *Monitoring:* It was reiterated that monitoring of streams countywide should be a vital part of any future watershed planning effort and perhaps a separate section devoted to monitoring and coordination between towns, citizens, the Soil and Water Conservation Districts and the County needs further discussion.
- *Barriers:* A suggestion was made to identify and focus on potential barriers or challenges to overcome for watershed planning.

Christine Gyovai presented an overview of the watershed planning process and the role of the DOC in this process.

SWMS Website and List Serve

Loudoun County has established a website for the Strategic Watershed Management Solutions effort where information, links and resources will be posted. The link is <http://www.co.loudoun.va.us/b&d/watershed.htm>.

To facilitate dissemination of information, a SWMS email list serve was established by IEN. The list address is loudounswms@virginia.edu and it is moderated by the facilitation team. If you have any questions or concerns, or wish to be added or removed from the list contact Jason Espie at jespie@virginia.edu.

Values, Goals and Objectives/Actions Subcommittee Work

A subcommittee comprised of Todd Danielson, Gem Bingol, Dave Snellings and Jim Christian present revised language for watershed planning Values, Goals and Objectives/Actions as well as the rationale behind their changes. There was discussion around specific changes including terminology suggestions for determining whether to use the phrase “science based” or “technically based.” A small work group refined the language for this principle which was supported by the SWMS Team and is now reflected in the draft DOC which may be found at the end of the meeting summary as Attachment I. The entire set of refined Values and Goals may be found in Attachment I in the draft Declaration of Cooperation (DOC). In addition, the subcommittee revisions to the objectives/actions may be found at the end of this document as Attachment II, and it was agreed that these would be further refined and discussed during the actual watershed planning phase but not during this effort.

Presentation: Integrating Watershed Management with Land Use Planning in Montgomery County

Next, Mary Dolan, an Environmental Planner with the Department of Parks and Recreation, Montgomery County, Maryland, gave a presentation on “Integrating Watershed Management with Land Use Planning in Montgomery County.” A copy of any of the presentations can be obtained by requesting one from Jason Espie at IEN at jespie@virginia.edu. The discussion points, questions and answers following this presentation include:

- One participant asked how Montgomery County defines parkland. Parkland is land owned by Maryland National Capital Park and Planning Commission and partially by the county. It is dedicated land that includes stream valleys, forests and such public facilities as ball fields and playgrounds.
- Montgomery County’s rural neighborhood cluster zone requires 65-75% of dedicated open space and it relieves developers of having to manage land by dedicating it to the park system for long term management.
- A Team members asked how often park master plans are developed and how Rock Creek specifically was selected. The response was that every 15 to 20 years Montgomery County updates its master plans on a rotating basis. In the case of Rock Creek it was simply time to do it, however, there was some added political pressure.
- It was asked how Montgomery County determines the effectiveness of their water quality measures and how this is conveyed to the public. Montgomery County has a continuous water quality monitoring system with special protection areas which are reported on every year. Their comprehensive stream strategy is updated every five years.
- One participant asked how Montgomery County develops action plans and factors in timelines to the plans. Montgomery County prepares watershed restoration action plans that are designed to address problem areas such as stream bank stabilization and these projects are incorporated into the county’s capital improvement program.

Watershed Planning Scope

Darrell Schwalm presented the findings of a subcommittee comprised of Darrell, Otto Gutenson, Mark Peterson, David Ward and Cliff Fairweather that had drafted a detailed outline for the scope of watershed planning. They proposed a two phased, three tiered approach. The two phased approach utilizes existing data in phase one and new data for phase two. The three tiered approach has three watershed planning scales – regional, countywide major watersheds and sub-watersheds. Sub-watersheds could be grouped into four classifications and implementation plans for each of these four categories could be created thus avoiding having to create one for every individual sub-watershed. The

three tiers could all be moved forward concurrently. The summary for the scope for watershed planning may be found in Attachment I. The comments and discussion points following this presentation include:

- Team members expressed support for a multi-stakeholder steering committee to oversee watershed planning effort. Participants suggested that this committee could have subcommittees but it would continue the consensus based process with diverse stakeholders and community involvement. Stakeholders felt this was necessary because the County does not have any dedicated staff or a department charged with this responsibility and stakeholders would like to have a continuing role in the effort.
- A concern was raised about how this watershed steering committee related to the Water Resources Technical Advisory Committee (WRTAC) and who would be responsible for oversight of the steering committee? These issues would need to be clarified.
- For organizations to give and fulfill commitments to the process it is important they have a continuing role, such as a seat on a steering committee.
- There was general agreement and support for the proposed two phased, three tiered approach.
- Tiers 1 and 2 are most adaptable to move forward concurrently. Tier 3 may take more time to classify the four sub-watersheds categories. Implementation can move forward once the main plan is done, though work on the implementation plans can commence at the same time as Tiers 1 and 2.
- There was some discussion around regional watershed planning suggested by Tier 1. It was acknowledged that watershed boundaries do not match political boundaries and that Loudoun County's watersheds are linked to their upstream and down stream neighbors. Regional neighbors include Fauquier County, Fairfax County, Prince William County, the City of Fairfax, Manassas Park and Maryland. The larger context is also driven by relationships with regional and state regulations and agencies. The final group agreement was that regional watershed planning is important and that each plan should actively include neighbors in plan development. However, this group is not suggesting that Loudoun lead the way in a regional process but rather Loudoun should participate actively in regional initiatives such as the Potomac Watershed Roundtable, the Metropolitan Washington Council of Governments Chesapeake Bay and Water Resources Policy Committee and EPA Tributary Strategies. In all aspects of watershed planning the Team suggested that Loudoun should engage with neighbors in planning.

Presentation: Public Involvement Process in Fairfax County Watershed Planning

Matt Meyers from Fairfax County's Stormwater Planning Division presented Fairfax County's model of public involvement for watershed planning. Mr. Meyers recommended that one does not need to wait for the planning effort to conclude before beginning to involve the public. Harnessing energy for watershed planning is important, as is obtaining the assistance of professional public involvement experts. A major lesson learned for Fairfax is that if you cannot get people to come to you, go to them with focused meeting groups such as getting on the agenda of the Farm Bureau or a targeted Homeowners Association. Education is also a critical component of success, and word-of-mouth, grassroots communication networks is important in building and maintaining effective communication efforts. The discussion points, questions and answers following this presentation include:

- A participant inquired about the staffing size of the Stormwater Division group in Fairfax: Fairfax County has one communications specialist, four main project managers, some ecologists and engineers on staff, and the county also hires a variety of consultants who help facilitate coordinate and engineer components of specific watershed plans.
- Participants discussed the importance of Fairfax County's decision to create a dedicated source of funding for stormwater management including watershed planning, maintenance and inspection of facilities, and construction of new capital projects, in particular the dedication of .01 cent of the real estate transfer tax rate.
- An observation was made that in Loudoun County the citizen volunteers are very active but in Fairfax it sounds like the county is leading the way. Is there a way to use citizens to lighten the staff role? The reply was yes, committee members have been used very effectively and are encouraged to

get out and help with outreach. However, their efforts still take overall watershed coordination efforts at the county level. The Northern Virginia Soil and Water Conservation Districts and organizations like the Audubon Naturalist Society have worked well with the county. Many county staff members have been engaged in watershed activities such as leading nature walks and stream clean up events.

- Partnerships have been important in Fairfax's experience, such as partnerships with the Park Master Plans that get people to participate and be engaged.
- Fairfax County recommended hiring effective facilitators to coordinate the process.
- It was noted that any public involvement outreach should take great care to use plain language and to clearly spell out acronyms, terms, jargon, etc.

Declaration of Cooperation: Overview

Tanya Denckla Cobb presented the draft Declaration of Cooperation (DOC) which can be found in Attachment I. The DOC has been developed with the input of participants during the February meeting and through subcommittee work. The DOC will continue to be updated and refined with recommendations and input from the SWMS Team and it will serve as the agreement document at the conclusion of the SWMS meeting effort in June. Following Tanya's overview, discussion points, comments or concerns that were raised included:

- Optimal group size for a steering committee is generally smaller than the SWMS Team, roughly 20-30 members, but there must be key representation from all interest groups.
- Participants suggested that a steering committee should be a countywide steering group, not just for a sub-watershed. Eventually if there is need and interest there could be steering committees for sub-watersheds, but not everyone will need or want one. There needs to be flexibility for organizing these committees. There is a strong need to form a countywide committee first.
- It was observed that Loudoun's parks and stream valleys are a potential resource for watershed planning, similar to schools. Parks are a means for citizens to utilize, access and connect with water resources. Parks are important in this respect and represent an opportunity to be an integral part of watershed planning implementation and outreach.
- Participants recommended that people serving on the steering or advisory committees seek or have official organizational representation or approval to participate on a committee. Not everyone can afford to volunteer time to participate at the necessary level unless they have organizational support that allows them to allocate time. Some individuals are capable of donating the time, others less so.
- It would be useful to have an inventory of organizations that have some relationship to watersheds in Loudoun County. It was suggested that the Inventory of Watershed Activities could include such an appendix.
- The term "Stakeholder Involvement" was recommended rather than "citizen involvement."
- A participant asked if any historic preservation groups had been invited to participate. The facilitation team had contacted several groups but had not received any response. The facilitators requested that if any of the Team members knows a specific contact at a historic preservation group to let them know as soon as possible.

Presentation: Technical Methodologies: Assessment Methods and Modeling

Next, Leslie Shoemaker of Tetra Tech gave a presentation "Technical Methodologies: Assessment Methods and Modeling." The discussion points, questions and answers following this presentation include:

- A participant asked how customized do models need to be. The reply was that there needs to be points of testing for any model set up and a big discussion point is to determine where to have long

term stream water monitoring gauging. One can set up monitoring points to extrapolate simulation points which are representative of other points or places across the watershed.

- It was asked how one accounts for geological differences. Models can be set up with test sites in different geologic zones which do not need to be separately addressed.
- One participant noted that Chesapeake Bay models have not been successful and wondered why this is. The answer is very complex and part of the reason is the scale involved and great variation across the Chesapeake Bay region. There are many factors at play with the failing Chesapeake Bay models. The Best Management Practice (BMP) performances are varied, size of watershed and degree of lag time can be large, input data can be incorrect, etc.
- It was asked how much data are needed before one can do effective modeling? The reply was that lots of data goes into modeling, some we can measure very well, i.e. acreage of land use, acres of soil, topographic data, etc. The issue with data gathering for modeling is that some data are more difficult or less accurate. Water quality studies are often the limiting factors for modeling or where there is less historic data.
- The differences between probabilistic/statistical models and physical models were discussed. Physically predictive models typically use more raw data. Tetra Tech generally prefers physically based modeling approaches over probabilistic/statistical approaches.

The facilitation team then asked John Galli from the Metropolitan Washington Council of Governments (COG) to give a brief and impromptu overview of the Rapid Stream Assessment Technique (RSAT) Level III which the COG has conducted in Loudoun County. Loudoun County utilized the RSAT Level III to inform their early watershed planning efforts and stream characterization. The technique involves investigating six stream assessment parameters including stream buffers, channel condition, habitat, sediment levels, biological community indexes and chemical test (pH, temperature, bacteria, etc.). The RSAT does not do predictive modeling but rather is an attempt to look at representative sections of stream systems to make an assessment about condition. The technique looks at ¼ mile to ½ mile lengths of stream for sampling location areas. The RSAT began in 1997 in Loudoun and they are currently finishing up Dutchman Creek, Catoctin Creek and Piney Run main stem condition assessments. There are 36 stations scattered around the County and there is RSAT information on all the major Loudoun County sub-watersheds but not necessarily all smaller tributaries.

Summary, Friday March 24th (half day)

Working Group Summaries and Discussion: Funding Strategies for Watershed Planning

Kelly Baty of Loudoun County Department of Building and Development presented the work of a subcommittee on funding strategies and provided a handout for discussion. Their recommendations were discussed further in a small working group. After the small group working session, Christine Gyovai presented the recommendations of the funding strategy group which the SWMS Team supported. The funding strategy may be found in Attachment I in the DOC and governing principles for funding are below. In addition, the Team developed a list of potential sources of funding, principles to consider when seeking funding and other related information which is below as well.

Principles to Consider with Funding

- Consider pursuing easy-to-obtain sources of funding (low hanging fruit) and consider what the true costs of potential sources of funding (such as the costs for staff to administer a grant when considering sources of grant funding). Consider presenting cost comparisons of potential sources of funding to elected leaders (including costs of administering the grant and searching for it, in-kind costs, etc.) and compare that to what it would cost to develop a dedicated source of funding for watershed planning.
- Staff time is needed for grant management and acquisition.

- Implementation funding should be considered separate (but still in addition to) watershed planning funding. There may be many more potential sources of funding available for implementation.
- Tie funding requests into other funding needs to stack functions, such as obtaining funding for wetland protection, and have that project meet one of the actions in the watershed plan.
- The small group recommended to immediately pursue creating a dedicated source of funding for the watershed planning process (potentially from the County General Funds). A steady source of funding is needed for the watershed planning effort.
- Prioritize and potentially reallocate existing sources of funding.
- Consider looking at a regional comparison of tax assessments to see what other localities are paying for taxes and what is dedicated toward watershed planning.
- Plan for various phases of watershed planning as they will require different levels of funding; multiple sources of funding are more realistic/feasible to obtain than just one source.
- Statutory requirements and implementation funding is easier to obtain than non-statutory requirements (such as specific source water protection).
- Invest money to get money: Identify several funding sources and then allocate resources to obtain and manage those sources of funding, such as resources for staff time to manage grants, and part of the funding strategy.
- Plan for the long term and consider: Seed money is good, federal grants, state grants, tax reallocation, general operating budgets and budget line items.

Cost Information

- Fairfax County has spent approximately \$12-\$15 million on watershed planning for the entire county including: producing documents, hiring consultants, reporting to the Board of Supervisors and other elected leaders, Physical Stream Assessments, GIS data and maps, outreach, modeling (approximately 30% of total costs) and estimates it will need to spend approximately \$500-\$800 million in costs for capital improvements for the entire county.
- Cost for Loudoun Watershed Planning might range from \$3-\$20 million (very rough estimate by small group).
- Additional information on costs for specific watershed activities may be identified under the watershed inventory IEN created (contact Jason Espie for a copy at jespie@virginia.edu).

Information Needs

- How much is Loudoun currently spending on watershed activities?
- How much will Loudoun County be increasing the amount of money spent on stormwater?
 - o \$1 million is spent annually to maintain stormwater infrastructure
- What needs to be funded?
 - o Planning
 - o Monitoring: Approximately \$100,000/year is spent on stream stage/flow monitoring at nine sites and rainfall monitoring at 2 sites in Loudoun County (50/50 joint funding between Loudoun County Department of Building and Development and USGS). Award of a grant to Loudoun County is expected soon that will partially fund a surface water and groundwater monitoring program totaling approximately \$1.6 million over four years.
 - o Agricultural BMPs
 - o Stormwater retrofits
 - o Restoration

The SWMS Team identified questions and discussion points following this presentation which included:

- Is there funding available from the Chesapeake Bay Program? Adjacent county funding? Link for information on the intent of Virginia's Chesapeake Bay Act: <http://www.cblad.virginia.gov/theact.cfm>

- What about funding from groups like Ducks Unlimited? The group agreed that looking for private sources of funding would be a good opportunity.
- There is a need for a dedicated source of funding from within the county. The Fairfax County model of property tax allocation is a good model. The Team agreed by consensus on this.
- This group should not recommend that the County adopt the Chesapeake Bay Preservation Act (CBPA) without careful considerations, especially in light of potential regulatory implications. Perhaps Loudoun can adopt parts of CBPA. The issue of CBPA funding and regulations needs further discussion.

Working Group Summaries and Discussion: Modeling

Tanya Denckla Cobb presented the work of the working group that addressed modeling. The proposal may be found in Attachment I in the DOC. The main thrust of the modeling proposal was to create a way for watershed planning to proceed immediately with already available data. This led to the proposal for a two phased approach in which Phase I uses the most simple and rudimentary models to analyze already available data. Phase II would use more complex predictive models when additional data becomes available. Phase I modeling analysis could be accomplished by in-house county staff while Phase II would likely entail contracting services of a firm capable of using the more complex models. Discussion points following this presentation include:

- Education is needed for any audience that is to make decisions based on modeling results, such as the BOS, Planning Commission, or others, especially about the assumptions and/or limitations there are for various models.
- There was some concern raised about the availability or accuracy of groundwater availability data or models.
- There was concern raised about Phase II because current county staffing levels are not sufficient to accomplish this.
- In general, the SWMS Team agreed that it is a good idea to identify what is currently desired and capture as many ideas as possible now through this process so this strategy can inform later modeling choices.
- Several participants stated that it is important to find ways of sharing modeling and other information with the public. This group should consider following Fairfax County's methods of modeling data and sharing results via the internet. Any modeling information needs to be in an accessible format so the public can understand it.
- Caution was urged with regards to modeling recommendations. The Team's modeling recommendations should not be overly prescriptive, e.g. noting that these are the models being suggested but not demanded. Those decisions will need to be made at a later planning stage.
- Any information shared with the public should be written for the lay reader and in as plain language as possible.

Working Group Summaries and Discussion: Data Collection, Use and Analysis

Jason Espie of IEN presented the work of the small group that focused on data collection, use and analysis. The recommendations from this group may be found in Attachment I in the DOC. The summary conclusions of this group were that:

The small working group identified a number of issues of concern regarding data.

- There is a lack of uniformity between data sets (COG, LCSA, TMDLs, etc.) however, this lack of uniformity is not so great as to render the data unusable. This simply highlights the need for a data management focal point.
- There is some concern over who establishes priorities for the County GIS facilities. The County policy may need revision or greater capacity to address data needs and priorities for watershed planning.

- The integrity of any data used should be viewed with scrutiny for consistency, quality control and quality assurance. Data becomes dated rather quickly. There is still potentially valuable historical trend information available even from possibly dated information.
- The agricultural land use patterns in Loudoun are dynamic and changing quickly. The land use changes are so dynamic that data integrity from different agricultural uses is questionable.
- More work is needed to connect sources and land uses with pollution loads. The DEQ TMDL monitoring is very rigorous scientific data but has a more narrow focus on bacteria and chemical loading and does not evaluate habitat or stream channel characterization.
- County staffers are working on a number of datasets in GIS that relate to watershed planning including forest cover and impervious surfaces. They welcome criteria for prioritization from the SWMS Team for what data they should focus on first for the plan.

The working group on data identified and commented on a number of existing data and information sources.

- **County Wells.** Loudoun County currently collects water level data from 8 dedicated monitoring wells and has plans to expand the well network to a total of 25 or so wells countywide. Water quality data collected at the time of construction are available from a large number of wells throughout the county as part of the County's well permitting process. This provides a useful data source for the proposed Phase I initial assessment but needs improvement for proposed Phase II. There are approximately 15,000 well records in the County's database and a lot of information is available but not yet analyzed.
- **Groundwater.** More data and analysis is needed before it can be used confidently in initial characterization.
- **Recharge Area and Water Flows.** There are data gaps in this area. USGS has some stream flow data. This area needs more analysis and data collection.
- **Wetland Inventory.** The County is currently working on a wetlands prediction model that will assist with delineation and mitigation methodologies to benefit the watersheds. This effort should facilitate better defined wetlands and areas for potential mitigation sites including upland areas and perennial streams. Effort is scheduled for completion by the second half of 2006, hopefully in time for a Phase I initial assessment.
- **Dry Wells.** Some data on dry wells exists in the County's database but will require work to get it into a meaningful format.
- **Impervious Surfaces** are a priority dataset for watershed planning. The County GIS facilities are working to finalize and calibrate a countywide impervious surface analysis. These data should be accessible soon, in time for Phase I.
- **Forest Cover** is also a priority dataset for watershed planning. The County GIS facilities are working to finalize and calibrate a countywide impervious surface analysis. These data should be accessible soon, in time for Phase I.
- **The Watershed Base Map** has recently been updated by the County.
- **Headwaters Data** (GIS) are updated and available.
- **Soils Data** (GIS) are updated (1995) and available.
- **Zoning, Easement and Land Use** data (GIS) are available.
- **Build Out Potential and Projection** analysis based on land use, zoning have not yet been done. This could be an important analysis for watershed planning and prioritization.
- **Rainfall Data** are available but could be improved. The National Weather Service has data.

The entire group discussed the work of data working group. The main points raised and recommendations follow:

- The County's policies regarding data from GIS could be conflicting and need further consideration and discussion.
- There was agreement that the monitoring protocols are close enough that they can be used and should be made available but the critical need is for a data management "guru" to pull it all together. This data management point is an important component of any future watershed plan.

- The US Geological Survey (USGS) has data experts who can evaluate data. USGS has a cooperative program with DEQ. USGS has access to base flow and storm data that can be collected and which can be used for modeling. The USGS also has modelers that could participate in the process. They would be willing to comment on recommendations for data.
- Quality assurance and quality control (QA/QC) needs to be addressed by any data management coordinator. The data management coordinator would come up with standard protocols for data collection and management or bridges between different protocols. The different protocols currently being used are not too far apart to be incompatible. It was noted that the Loudoun Watershed Watch closely follow QA/QC procedures for data collection.
- DEQ data collection has legal implications since it is related to TMDLs. The County may not need to rise to data level standards employed by DEQ. There are many more data sets that the county will want, such as habitat, channel profile, etc., that DEQ does not even have. Loudoun watershed plans should use citizen volunteer data.
- There was a recommendation to build on the Goose Creek Vulnerability Study data.
- It was noted that data should be updated on a regular basis to be useful.
- It was noted that data should be available to the public in an understandable format.
- It was cautioned that the DOC is supposed to be a broad, strategic framework document and that this discussion of more detailed data needs and management is more appropriate for an actual watershed plan. This DOC should simply explain why data needs to be available and managed and make some recommendations, but should not go into this level of detail. The group agreed that only the primary concepts and recommendations above, i.e. the need for a data management coordinator, would go into the DOC. Other details from this working group just reside in the meeting summary as background for future plan guidance.

DOC Discussions: County Coordination

The group continued its discussion of the DOC around the topic of County coordination. Edits were made directly to the DOC in the group session and the final recommendations can be found in the DOC in Attachment I. What follows are some key points raised during the discussions on County coordination.

- There is the need for more emphasis on staffing levels in the DOC.
- There was a question raised whether this section was restricted to Loudoun County employees. It was suggested that this section might also include private partners.
- There was a concern raised that whoever becomes or employs an environmental coordinator should report directly to the County Administrator and should not be under a specific department head. While others suggested that it might be more effective for an entire County department to be given authority and responsibility, there was general agreement that the watershed planning coordinator needs to be able to work with all departments, have access to all departments and to not be constrained by the goals of one department. Reporting and responsibilities for any coordinator need to be clearly spelled out. This aspect of County coordination needs further thought and discussion.

DOC Discussions: Goals and Values (DOC)

The group continued its discussion of the DOC around the topic of goals and values. Gem Bingol presented language that she was asked to edit on “scientific data accepted by professional scientists in the field.” Bruce McGranahan presented language he was asked to edit concerning “existing regulation.” In both cases, edits have been made directly to the DOC which may be found in Attachment I. What follows are some key points raised during the discussions on goals and values.

- There was some discussion surrounding inclusion of the concept of smart growth in the DOC. Some felt that since this was such a highly cliché term, susceptible to various interpretations that it is necessary for this group to understand a shared definition. A number of participants agreed that it was an important concept and that it would be a shame to remove or avoid using it because of

uncertainty regarding its meaning. The following definition from the smart growth network/EPA was proposed for consideration.

"Smart growth is development that serves the economy, the community and the environment. It changes the terms of the development debate away from the traditional growth/no growth question to how and where should new development be accommodated. Smart growth is a planning concept or philosophy that attempts to make best use of land and infrastructure in order to derive economic and environmental benefits using compact design and other proven techniques."

For more definition visit <http://www.epa.gov/smartgrowth>. Some felt this was important to include but perhaps under the objectives section where it is currently located and can be found in March Attachment I, p. 109. Though there was general approval for this term there was not clear consensus on adoption of this definition. Further discussion is needed.

- The facilitators clarified that the objectives and specific actions are not presented as consensus but rather as discussion items of the SWMS Team.
- Objective number 3 about regulation will need further discussion during the watershed planning phase.
- Someone inquired about the specific goals of the CBPA. Katherine Mull from the Northern Virginia Regional Commission provided the Northern Virginia Regional Commission provided the following information: link for information on the intent of Virginia's Chesapeake Bay Act: <http://www.cblad.virginia.gov/theact.cfm>. (Click on Section 10.1-2100 Cooperation state-local program for a good summary of the intent of the act).
- A few new values and goals were proposed to the group and they were adopted and revised by the goals committee and they may be found in March Attachment I.

Presentation: County Parks – Plans for Public Uses for Stream Valley Trails

Mark Novak of Loudoun County's Department of Parks, Recreation and Community Service (PRCS) gave an overview of the Plans for Public Uses for Stream Valley Trails in Loudoun County. Mr. Novak described the vision concepts of PRCS and green infrastructure components and policies of the general plan. Mr. Novak then described current implementation projects including the Potomac Heritage National Scenic Trail and the Goose Creek Little River navigation. Mr. Novak answered questions about the Potomac Heritage National Scenic Trail and ways to incorporate the Stream Valley Trails into the watershed planning effort which the group expressed support for.

Presentation: Groundwater Presentation

Glen Rubis of Loudoun County Department of Building and Development and Mark Bennett of the USGS made a joint presentation on "Groundwater, Stream Flow and Hydrologic Monitoring in Loudoun County, Virginia." Mr. Rubis covered the objectives and activities of the Water Resources Monitoring Program, Department of Building and Development. Mr. Bennett provided an overview of hydrologic systems and USGS data. He highlighted a useful USGS publication, "Ground Water is Vital to Surface Water Systems," available on the internet, <http://water.usgs.gov/pubs/circ/circ1139>. USGS water resources data are available from this website, <http://va.water.usgs.gov>. Some questions and discussion points following this presentation include:

- It was recognized that Loudoun relies on real-time USGS data for emergency management, for example to know when water levels are rising to a level where they would cover certain roads.
- Loudoun County's Erosion and Sediment Control Program also uses USGS data and keeps track of precipitation gauges.
- The County's database has records on approximately 15,000 wells, some of which include water quality, water yield, well depth and other information. A 5 year backlog of well data from paper records was entered into the database from 2001-2004 and currently data are added as new wells are constructed. Analyses of these well data are important for watershed planning. A presentation was made to the BOS last summer on some initial well data analysis that found that the average yield has stayed about the same but wells are on average getting deeper.

- Katherine Mull from the Northern Virginia Regional Commission provided a website link, <http://chesapeake.usgs.gov/workshop22206.html>, that contains presentations and papers on factors affecting water quality that can potentially affect management decisions for watershed planning (ground water residence time, in-stream loss of nitrogen, sediment transport, etc.).

DOC Discussion: Commitments

The facilitation team introduced the commitments portion of the DOC which will indicate the continuing roles of various stakeholders. In preparation for the May meeting it is important for each Team participant to brainstorm with his/her organization potential commitments that could be made for the continuing watershed planning effort. Every stakeholder has different resources and possible responsibilities relating to watershed planning. Some groups are more involved with volunteer and citizen outreach; others have more of a mandate to coordinate local government programs. There are many activities that organizations are already doing that simply can be folded into a commitments statement. Gem Bingol share with the group a sample draft commitment statement from the Piedmont Environmental Council. The group identified key elements that could be considered for a commitment statement:

- Conduct or support citizen education and outreach
- Conduct or provide equipment for stream monitoring
- Conduct or support stream cleanups
- Conduct or support planting of riparian buffers
- Conduct or support stream assessment and mapping activities
- Participate in the proposed Loudoun Watershed Steering Committee
- Participate in sub-watershed implementation efforts
- Host a neighborhood party about watershed issues

DOC Discussion: Vision Statement

Bruce McGranahan of Loudoun County Department of Planning and George McGregor of Reed Smith LLP worked to draft a vision statement for the watershed effort. They assessed the goals, values and principles already identified by the SWMS Team and drew upon that language in drafting a vision statement. The following statement was read and given preliminary consensus approval. The Team requested more time to digest the draft vision and will consider it for adoption at its next meeting.

The SWMS Team envisions Loudoun County as a place where people appreciate the beauty and value of their natural and cultural resources, enjoy a robust economy, recreate in swimmable and fishable waters and respect diverse natural habitats. Loudoun's citizens are informed, energized, active stewards committed to healthy watersheds for this and future generations.

Closing Session Discussion

The facilitation team led a final wrap-up session to discuss elements of the DOC, the small working group reports and next steps and timelines.

- A concern was raised about funding in general. There are different costs associated with different elements of a watershed plan and resource allocation will need to be put before the Board of Supervisors. It is important to distinguish funding source that may actually cost the county more to administer and some that are more affordable. For example, grants should not necessarily be considered "free money" for they can consume significant amounts of staff resources in administrative oversight.
- Participants were asked to look closely at the DOC and to understand that it is very similar in form to a Memorandum of Understanding (MOU).
- A general question of uncertainty was raised about the SWMS process. The outcomes are clear but it was unclear how to get there. What about the plan? A metaphorical explanation was offered that the SWMS Team is similar to architects providing design guidance for builders and

engineers on a building concept. It is the engineers and builders who then take these conceptual design guidelines and create the actual plan and implement it.

- A watershed planning opportunity was identified – to coordinate or integrate the watershed plan with Loudoun County’s Heritage Preservation Plan, specifically Chapter 5 which deals with heritage corridors and waterways that influence historic settlement patterns. Information on the Heritage Preservation Plan is available from this website: <http://www.loudoun.gov/compplan/historic.htm>.
- The Team was informed that County Administrator Kirby Bowers, though absent, expressed his regrets for being unable to attend and show his support for the process.

Next Meetings

A request from the Team was discussed for an additional SWMS Team meeting as participants were concerned that one final meeting would not be sufficient to give the DOC full consideration. In consultation with Kelly Baty (SWMS Team Project Manager) an additional SWMS Team meeting was agreed to by the entire group. Two more SWMS meetings are scheduled. The next SWMS Team meeting will be on **Thursday May 4th from 9:00 – 4:30**. The additional meeting is now scheduled for **Tuesday June 6th from 9:00 – 4:30**. Both meetings will be held at the Best Western Hotel in Leesburg.

Timeline for Immediate Next Steps

- A new draft of the DOC will be sent to a small review team by April 4. Volunteers for this team were: *Cliff Fairweather (Ed Gorski as alternate), George McGregor, Darrell Schwalm, Bruce McGranahan and Todd Danielson*.
- These subcommittee volunteers need to be available to review the DOC during the period of April 4-10.
- Subcommittee comments are due back by April 11, including all other subcommittee comments.
- Incorporating the comments of this subcommittee the next draft of the DOC will be sent to the full SWMS Team via email list serve by April 14th.
- Comments are due back from the entire SWMS Team by April 19th.
- An updated DOC will be sent out by April 27th in preparation for the May 4th meeting.

Other Arrangements and Announcements

- It was asked if anyone was interested in Gilford Farm LID site tour in Culpepper to be arranged for May 3rd, the day before the next meeting. Eight participants indicated interest. A tour may be arranged if possible with the Culpepper Soil and Water Conservation District.
- It was announced that the Wetland Studies and Solutions, Inc. (WSSI) headquarters office in Gainesville has a number of LID installations in place and Mark Headly of WSSI generously offered to give anyone a tour.
- Ed Gorski generously extended an open invitation to take anyone canoeing.
- John Galli of the COG will explore whether it is appropriate to add any zoning language to the goals and values section of the DOC and Bruce McGranahan and David Ward will explore available data compatibility and potential for use.
- Inventory of Watershed Activities. Jason Espie of IEN is planning to finalize this inventory for presentation at the May 4th meeting and called upon participants to send him their edits, suggestions or **any comments by April 21, 2006**.

Meeting Participants

March 23 – 24, 2006

Water Supply

Todd Danielson, Loudoun County Sanitation Authority
(LCSA)

Federal and State Agencies

Mark R. Bennett, U.S. Geological Survey – Director of Water
Resource
Debra Gutenson, U.S. Environmental Protection Agency –
Office of Ground Water and Drinking Water
Otto Gutenson, U.S. Environmental Protection Agency –
Wetland and Waters Program
Patricia (Pat) McIlvaine, Virginia State Soil and Water
Conservation Districts
Pawan Sarang, P.E., Virginia Department of Transportation –
NoVa Location and Design
Robert Swanson, DEQ alternate
Chris Van Vlack, Virginia State Soil and Water Conservation
Districts
Kelley Wagner, Virginia Department of Forestry – Stream
Resources
Larry Wilkinson, U.S. Department of Agriculture, NRCS

Loudoun County

Wm. Kelly Baty, Department of Building and Development
Alex Blackburn, Department of Building and Development
Matt Brown, Department of Building and Development
Dennis Cumbie, Department of Building and Development
Ed Erwin, Department of Building and Development
Charlie Faust, BOS Appointed, Water Resources Technical
Advisory Committee
Joe Gorney, Planning Department
Steve Kayser, Department of Building and Development,
Erosion and Sediment Control
Sally Kurtz, Board of Supervisors
Bruce McGranahan, Planning Department
Mark Novak, Parks and Recreation
Glen Rubis, Department of Building and Development
Todd Taylor, Department of Building and Development
David Ward, Public Works
Randy Williford, Public Works

Loudoun Public and Agricultural Groups

Chris Hatch, Loudoun County Farm Bureau
Donna Rogers, Loudoun County Farm Bureau

Conservation and Environmental Groups

Gem Bingol, Piedmont Environmental Council (PEC)

Helen Casey, Goose Creek Scenic River Advisory
Committee

Phil Daley, Loudoun Wildlife Conservancy
Cliff Fairweather, Audubon Naturalist Society
Stella Cook, Audubon Naturalist Society (alternate)
Fred W. Fox, Loudoun Watershed Watch (alternate)
Ed Gorski, Piedmont Environmental Council (PEC)
Ann Larson, Catocin Scenic River Advisory Committee
Darrell Schwalm, Loudoun Watershed Watch

Development and Business Committee

Mark Headly, Wetland Studies and Solutions, Inc. (WSSI)
George McGregor, Reed Smith LLP
Chris Monahan, VA Paving Company
Mark Peterson, Luck Stone Corporation
David Snellings, Greenvest L.L.C.
Jim Stepahin, Heavy Construction Contractors
Association

Regional Government

Charles Baummer, Metropolitan Washington Airport
Authority
John Galli, Metropolitan Washington Council of
Governments
Matt Meyers, Fairfax County Stormwater Planning
Division
Katherine K. Mull, Northern Virginia Regional
Commission
Mary Dolan, Montgomery County Department of Parks
and Planning (Guest Presenter)
Paul Shirey, Fairfax County Department of Public Works
and Environmental Services

Facilitation and Support

Tanya Denckla Cobb, Institute for Environmental
Negotiation, (IEN), University of Virginia
Jason Espie, IEN, University of Virginia
Christine Muehlman Gyovai, IEN, University of Virginia
Leslie Schumaker, Tetra Tech, (Guest Presenter)

MARCH ATTACHMENT I

The Loudoun County Strategic Watershed Management Solutions (SWMS) February – June 2006

“DECLARATION OF COOPERATION”

*******DRAFT 04/14/06*******

I. BACKGROUND

The Loudoun Strategic Watershed Management Solutions (SWMS) is a collaborative initiative to coordinate existing watershed efforts and define a shared vision for managing Loudoun County's watersheds. A stakeholder group was convened by Loudoun County's Department of Building and Development and facilitated by the University of Virginia's Institute for Environmental Negotiation (IEN). Funding for the project is provided by the National Fish and Wildlife Foundation, U.S. Environmental Protection Agency and Loudoun County.

The first step in the SWMS initiative was the formation of a stakeholder group called the “SWMS Team.” During January and February 2006 IEN conducted 17 interviews with stakeholders representing different perspectives and interests about the development of a strategy for watershed planning in Loudoun County. These interviews were conducted in preparation for the first SWMS Team meeting to help shape the agenda, identify the kind of information and speakers needed at the first meeting, inventory activities and studies relevant to Loudoun's Watershed Planning effort and identify issues and concerns that would need to be discussed. With this information IEN developed a summary of its findings, as well as an inventory of watershed activities, studies and sources of data. Drawing on recommendations from County staff and a number of stakeholders interviewed during the convening process, over 125 people who represent the interests of federal, state, regional, local government (County and towns), water supply, environmental and conservation groups, farming, business, development and homeowner associations were invited to participate. Of those invited, approximately 65 (number to be filled in by IEN at the end of the process) people participated in the four SWMS meetings, February 22-23, March 23-24, May 4 and June 6 in which decisions were made by consensus.

Through the SWMS meetings and after much deliberation, discussion and hard work the Team developed a number of key recommendations regarding the development of a watershed plan for Loudoun County. The key areas of agreement developed by the SWMS Team are below with details about each area of agreement following in the body of the Declaration of Cooperation (DOC).

This DOC represents significant thought and effort on the part of participating stakeholders and is intended to provide parameters and guidance for the watershed planning process. The SWMS Team understands that the watershed planning process will need to use an adaptive management approach in which changes in the planning process are made as experience is gained and lessons learned. The agreements reach represent recommendations by the SWMS Team and it is recognized they may need to be modified to reflect revised timelines or available resources. The Team recommends the establishment of a steering committee that will support the adaptive management approach by providing a mechanism to collaboratively make changes to the recommendations contained in this Declaration of Cooperation.

KEY AREAS OF AGREEMENT

II. GUIDING PRINCIPLES, VISION, VALUES AND GOALS

The following guiding principles, vision, values and goals are recommended for a watershed plan for Loudoun County.

A. Principles – The following are principles recommended to guide the watershed management planning process:

1. Create a realistic, achievable, implementable, balanced plan based on scientific data and models that are accepted by professional scientists in the field.
2. Create a flexible, dynamic and simple plan.
3. Address resources for implementation in the watershed planning process (monetary, in-kind and staff).
4. Consider economic development, jobs, housing (current and future), agriculture and conservation land needs in the creation of the plan.
5. Provide a plan based on consensus among the diverse views.
6. Provide a collaborative approach that allows stakeholders to work together to provide support and not duplicate individual efforts or projects.

B. Vision – The following vision is recommended for Loudoun County’s watershed plan:

Loudoun County is a place where people appreciate the beauty and value of their natural and cultural resources, enjoy a robust economy, recreate in swimmable and fishable waters and respect diverse natural habitats. Loudoun’s citizens are informed, energized, active stewards committed to healthy watersheds for this and future generations.

C. Values – The following values are recommended to drive Loudoun County’s watershed planning effort and to meet the needs of future generations:

1. Clean drinking water is available for all Loudoun citizens.
2. The needs of future generations are met. [One person suggested deleting this phrase and moving it above].
3. All Loudoun citizens are engaged, informed and active in watershed planning.
4. Economic development opportunities are preserved in the watersheds.
5. Nature and natural systems (i.e. buffers) essential for good water quality are protected in all Loudoun streams.
6. Stewardship is recognized as a community responsibility and encouraged in every watershed.
7. Recreational use of the water resources is available for all Loudoun citizens.
8. Healthy stream habitats and aquatic life populations are protected in all Loudoun streams
9. Agricultural heritage is preserved and its future viability is ensured through appropriate planning and zoning. [addition]

D. Goals – The following broad goals are recommended for Loudoun County’s watershed planning effort:

1. Protect public and environmental health.
2. Manage runoff in accordance with generally accepted practices to protect stream channel processes and protect and restore water quality, stream health and groundwater resources.
3. Protect water supply for current and future demands for both ground water and surface water through private and public means (e.g. regulations and voluntary efforts).
4. Protect and restore diverse habitats and riparian buffers to provide healthy streams and public recreation opportunities.
5. Preserve the economic value of healthy watersheds by protecting the natural functions of watersheds including wetlands and floodplains.
6. Preserve and enhance economic-related opportunities in Loudoun County, including the preservation of agriculture as a significant economic contributor, through the implementation of goal-specific land use policies and zoning strategies. [Language modified from original]. [One person asked “Does this cover construction of homes?”].

7. Raise awareness of citizens, engage citizens in planning efforts and utilize citizen input.
8. Promote cooperation and coordinate government and non-government watershed management efforts, data and resources within the watersheds.
9. Utilize existing regulations and ordinances where possible and develop new regulatory tools that are necessary to support the stated goals of the watershed management plan.
10. Promote cooperation between government entities to improve water resource quality. [One person suggested deleting this phrase and adding it above to #8].

III. SCOPE AND OVERALL PROCESS FOR LOUDOUN WATERSHED PLANNING

Two-Phased Approach – The SWMS Team recommends a two-phased approach to develop watershed plans. This phased approach will provide the County with a way to immediately begin watershed planning using currently available data at a minimum cost. It will also allow the County to enhance the quality and sophistication of its plans over time as grant and other funding becomes available.

A. Phase I – Watershed management planning can proceed immediately using already acquired or existing data in a cost effective manner. In this phase three different types of plans are recommended in recognition of the different scope and scale of legal requirements and needs for watershed planning.

1. **Tier I: Regional Plan** - Loudoun County watersheds extend into adjoining counties and are part of the larger Chesapeake Bay Watershed. It is recommended that a regional watershed plan defined by the geographic boundaries of the watersheds be developed in cooperation with neighboring jurisdictions and regional authorities. The planning process for Loudoun should begin with Fairfax County, who has begun developing watershed plans, and continued with other authorities as the opportunity arises.

2. **Tier II: Major Watershed Plans** – Individual watershed management plans that are defined by both the political boundaries of the County and watershed boundaries are recommended to be developed for the twelve major watersheds in Loudoun County. These plans will involve working with stakeholders within those watersheds and providing communication and coordination regarding those plans at the countywide level. Individual watershed management plans, using existing data, should be developed for: a. Sugarland Run, b. Broad Run, c. Lower Goose Creek and Little River, d. Beaverdam Creek, e. Middle Goose Creek and Panther Skin Creek, f. North Fork Goose Creek, g. Upper Goose Creek and Gap Run, h. Limestone Branch, i. Catoctin Creek, j. Dutchman's Creek and Piney Run, k. Upper Bull Run, and l. Cub Run.

3. **Tier III: Sub-watershed Implementation Plans:** Preliminary sub-watershed implementation plans should be developed as supplements to each of the major watershed plans. The sub-watershed plans should be defined by both sub-watershed boundaries and characterization of the sub-watershed selected from one of four possible characterizations defined by the Center for Watershed Protection. Each sub-watershed plan will provide implementation strategies to protect and restore the water quality and stream health in specific portions of the watershed. The order in which these supplemental plans are developed should be based on a prioritization system that selects the "most vulnerable" watersheds based on projected future impacts with preference given to headwater sub-watersheds, drinking water sources and vulnerability potential.

4. **Concurrent Planning Approach** – The regional watershed management plan, the 12 major watershed management plans and the preliminary sub-watershed implementation plans should be developed in parallel using currently existing data beginning as soon as practicable.

B. Phase II – More sophisticated watershed management plans can be developed when County or other resources are available to collect and analyze data based on established priorities. The data collection could focus on 1) filling identified data gaps, 2) developing sophisticated predictive models to assess degradation impacts under varying loading and growth conditions, (see Section IV below), 3) developing detailed sub-watershed implementation plans based on stream surveys, and 4) assessing progress in achieving planning goals based on water quality and stream health data collected under probability and trend monitoring approaches.

1. **Detailed Field Surveys** – Additional field surveys should be conducted in each sub-watershed to provide updated and more detailed data. These detailed field surveys, which could use the Center for Watershed Protection’s Rapid Stream Assessment Technique (RSAT), should be used to assess the pathways of runoff to streams, hydrological impacts of increased runoff, impacts on aquatic life, impacts on habitat and geomorphologic impacts.

2. **Updated Implementation Plans** – These field survey results can be used to revise the preliminary sub-watershed implementation plans into more detailed, long term implementation plans.

C. **Collaborative Governance Approach** – A countywide stakeholder steering committee should be established to provide policy and technical oversight for the watershed management process. The stakeholder steering committee can guide implementation of the Declaration of Cooperation and ensure that an “adaptive management” approach will be used to make changes to the watershed planning process as experience is gained and lessons learned. Technical subcommittees and the stakeholder committee should be established to provide input and guidance to the different types of watershed plans as needed. The SWMS Team also recommends establishing sub-watershed committees, if needed, with liaisons from the sub-watershed committees serving on the countywide stakeholder steering committee.

IV. MODELING

A. **Decision Making Tool** – Computer modeling can be a helpful decision making tool for the watershed planning process. It can be used to forecast the impact of different management strategies and therefore help in the selection of preferred management practices. The principal use envisioned for modeling in the Loudoun Watershed Planning Process is to provide better information for decisions regarding water quality and water quantity (water supply planning) for both surface and ground water.

1. **Surface Water Modeling** – For surface water quality and quantity the models can offer predictive guidance for aquatic, drinking and recreational values of streams specifically addressing at least sediment, nutrients and flow variation (flashiness).

2. **Ground Water Modeling** – For ground water quality and quantity the models can offer predictive guidance for fecal non-point source pollution and base flow, but will not generally be able to answer the question of ground water availability in western portions of the County.

3. **Modeling Choices** – The Team recognized that there are a wide range of models available that can vary greatly in cost, complexity, ease of application and ability to use in-house. In light of the above, the Team recommends that the modeling information be shared with the public in an accessible and understandable format, perhaps via the internet.

B. **Phase I Modeling** – The Team recommends that the County begin its watershed planning with a least-cost predictive tool that does not require data beyond what is already available, that is simple and can be used in-house by Loudoun County staff.

1. **Water Quality** – For predicting impacts of different management options on water quality, consider selecting either a basic spreadsheet (such as STEPL) or the slightly more sophisticated Generalized Watershed Loading Function (GWLf) model, both of which will address nitrogen, phosphorus and sediment. Experience in other localities has shown it is important that whichever model the County selects, the same model be applied across the entire County to ensure consistency of analysis and predictive value.

2. **Water Quantity** – For predicting impacts of different management options on water quantity, consider selecting a spreadsheet model to do “water balance accounting.” It is understood that this would allow the County to make only rough predictive calculations of impacts on water quantity at an early phase of watershed planning. However, as more data is gathered over time, the County may be able to graduate to a more refined model to make more refined calculations.

3. **Groundwater** – For predicting impacts of different management options on groundwater it is recommended that existing data are compiled and analyzed, as much data as is available but has not been analyzed. It is also important that existing data and analyses already

undertaken by agencies such as the USGS and DEQ be obtained by the County to avoid duplication of effort. The USGS has agreed to provide input and assistance in the County's modeling and data synchronization efforts.

4. **Floodplains** – For predicting impacts of different management options on floodplains consider obtaining existing modeling from FEMA to incorporate into the plan.

C. Phase II Modeling – As the County progresses in its watershed management planning effort it may need more sophisticated predictive capability. When more data are gathered and becomes available the County should consider the following approaches which may require additional funding and staffing capacity to accomplish.

1. **Water Quality and Quantity** – For more sophisticated predictions of impacts of different management options on both water quality and quantity the County should first inventory data available to decide which of the more sophisticated models would be most feasible to use. The current choices are either EPA's dynamic rainfall-runoff simulation model (SWMM) or the Hydrologic Simulation Program-Fortran Model (HSPF). Both models are appropriate for Loudoun's mix of urban/rural land use and could be used to predict nutrients, sediments, as well as flow variation and base flow. The HSPF model already has been used to develop two TMDLs for fecal coliform in Loudoun County and so could be adapted for these broader predictive purposes as well as expanded to provide coverage for the entire County via extrapolation. As a result the Team suggests that the HSPF might be preferable to the SWMM model but the County should make this determination when the time is appropriate. The Team also suggests the County consider using a flexible, selective approach in which more sophisticated models would be used for more complex, difficult watersheds.

2. **Ground Water** – For more sophisticated predictions of impacts of different management options on groundwater the County needs to establish long term monitoring wells and gauges. When more data becomes available, including geological data, the County could begin to conceptualize its groundwater system. The Team recognizes that the movement and availability of ground water is a difficult science and that it will be at least five years before a predictive model for ground water can be developed. It is therefore recommended that other tools for decision making be developed in the near term. Specifically the Team recommends that the County consider selecting either the MOD-FLOW or SUTRA 3-D models for use as early as possible in Phase II. Either of these tools can be used to identify: (a) areas at risk of low base flow; and (b) areas important for ground water recharge.

D. Phase III Modeling – For ground water the Team also recommends a later Phase III modeling effort in which the County would eventually develop and use a ground water model that can predict availability of groundwater.

V. Data Management and Protocols

A. Current Data Availability – Data are a major component of the watershed plan and there is a need for more attention and resources to be directed to data management and acquisition. The SWMS Team agrees that data and studies currently available are sufficient to provide the initial prioritization and snapshot assessment envisioned in Phase I of the proposed scope. However, the SWMS Team recommends that the integrity of existing data be examined carefully before using it in any assessment as not all existing data is relevant to the assessment's purpose and some is old or perhaps faulty.

B. Central Database and Data Coordinator/Office – A common database needs to be created to store water quality and quantity data from the many data collection entities working in the County. It is important that there be one data "coordinator" or management focal point that assembles data and established standard data collection and management protocols. The Team also recommends that the County designate a new position or office with the task of providing central data coordination and management because volunteer efforts are not sufficient to accomplish this task.

C. Monitoring – A combination of monitoring approaches is needed. One approach, suggested for using Phase I of the scope, is to use probabilistic-based (statistical) monitoring, applied countywide to

provide a baseline and snapshot data on watershed conditions for tracking progress. Another important approach, suggested for Phase II of the scope, is to establish an on-going system of permanent monitoring stations to monitor progress over time. Lastly, the SWMS Team recommends analyzing and reporting monitoring data on a periodic basis to ensure relevant data are being collected.

D. Stream Survey Data – Stream surveys will eventually be needed to develop data needed for detailed implementation plans to protect or restore priority stream segments identified in sub-watershed plans.

E. Data Collection Needs – It is important that a number of data and stream quality studies be incorporated into the assessment and watershed characterization effort. There is a need to decide upon a means to quickly gather and assess these existing data for use in the countywide assessment based on costs and the needs listed below. All new data collection should follow data collection protocols used by existing studies or state endorsed monitoring guidelines.

1. The County should consider making a commitment to inventory, map and monitor all water resources within the County's watersheds.
2. There is a need to establish a network of on-going monitoring stations to supplement the countywide assessment and sub-watershed characterization and to assist with the evaluation and updating of the watershed plans over the years.
3. A flow gauging network should be established to help monitor in-stream flow because maintaining ecologically healthy streams is a concern for the future of Loudoun's waterways.
4. GIS data needs to be incorporated into the watershed management planning effort and a means found for making GIS data available to the public in an understandable format.

VI. Criteria for Prioritizing Problems and the Development of Sub-watershed Plans

A. Need for Criteria – The SWMS Team agreed that it is important to establish countywide prioritization criteria to guide the watershed planning effort. Specifically, prioritization criteria should help identify which sub-watershed plans are developed first and where implementation should first be initiated. It is understood that any plan should be implemented incrementally so that identified priority areas can be addressed first.

B. Criteria Guidelines – The Team recommends the following prioritization criteria and notes that these criteria will need to be weighted or scored to help establish priorities.

1. Give priority to rectifying pre-existing conditions (retrofits).
2. Prioritize areas needed for source water protection.
3. Give priority to drinking water supply recharge areas.
4. Give top priority to meeting state and federal regulation requirements.
5. Give high priority to development-pressure areas or areas on the cusp of change for future build-out.
6. Give priority to sensitive areas, such as headwaters, groundwater recharge areas and wetlands.
7. Give priority to situations where human health concerns exist due to possible septic or groundwater contamination.
8. Prioritization should take into account the different characterizations amongst sub-watersheds such as size, urban, rural, east, west, soil type, farming, drinking water supply shed, etc.
9. Priority should be given to protecting undeveloped or minimally developed sub-watersheds.
10. Give consideration to traffic impacts and stream crossing in VDOT corridors.
11. Give priority to implementing projects that are the most efficient and will get the most "bang for the bucks" such as watersheds with the greatest potential for efficient reduction of nutrients (MS4 offsets, nutrient trading).

VII. Funding

A. Funding Strategy – Funding is a critical part of the watershed planning process and the Team’s recommendation for a funding strategy for the watershed planning process is below.

B. Dedicated Funding – The Team emphasizes the need for a dedicated source of funding for watershed planning from within the County. There are many potential benefits from watershed planning, such as being aware, proactive and prepared for new stormwater and nutrient cap regulations that are forthcoming. Creating a dedicated source of funding is important to ensure a successful watershed planning funding. Two strategies were identified as potential dedicated sources of funding:

1. Earmark a portion of the “rollback” tax (the tax assessed when property land use change is designated).
2. Consider reducing the personal property tax rate reduction that partially offsets the increase in assessed value (“equalize less”) and consider earmarking a portion of that for watershed planning.

C. Grant Funding – Consider identifying sources of grant funding and corporate sponsorship for both a short term and long term source of funding for watershed planning but especially in the short term while a long term funding strategy is being created. The SWMS Team recognized that significant staff time is required to administer grants.

D. Targeted Funding – Consider developing sources of funding for critical areas identified in the watershed plan. In addition, consider phases in watershed planning when looking and dedicating sources of funding, as fewer financial resources may be needed for Phase I and Phase II.

E. Existing Funding – Evaluate, prioritize and possibly reallocate existing funding resources to determine if those resources could be applied to watershed planning.

F. Bay Act Funding – Consider the possibility of Loudoun County adopting the Chesapeake Bay Preservation Act (CBPA) which may be a potential source of funding. [The Team notes that extra funding could be available to Loudoun County because no other counties adjacent to Loudoun have yet adopted the CBPA. One person suggested deleting this sentence.] However, there could be regulatory implications that would require careful consideration.

G. In-Kind – Consider significant financial contributions from in-kind sources such as citizen groups and the development community.

VIII. Stakeholder/Citizen Involvement in the Watershed Planning Effort

A. Valuing Outcomes – The SWMS Team agreed that the success of watershed management planning in Loudoun County ultimately depends on people valuing the outcomes and contributing to the watershed plan implementation activities. The planning process should therefore involve people in the development of the Watershed Management Plans to enhance the plan’s value to citizens.

B. Engaging Citizens – Overall, the Team agreed that it is essential for the planning process to create ways that make it easy for Loudoun citizens to be informed, engaged and involved. Ideas might include having planning leaders attend meetings of different citizens’ groups to reach citizens who might be difficult to reach otherwise, creating a website, conducting workshops, creating other forums to engage citizens and providing educational resources. It is important to “go beyond the choir” to engage citizens who might not otherwise be involved in the Watershed Management Planning process and plan implementation. Outreach strategies also need to consider social justice issues to ensure that actual implementation strategies are accessible to people of all socio-economic levels.

C. Methods to Involve Stakeholders – To ensure stakeholder involvement through out planning and implementation the Team recommends that the County adopt the following approaches:

1. Create an inventory of County organizations that are stakeholders in the watershed plan, i.e. organizations whose work or mission relates to the goals of the watershed plan, including conservation and environmental interests, historic preservation, development, business and agriculture. The SWMS participant list may be used as an initial document for this inventory.

2. Convene a countywide stakeholder steering committee with representation of diverse interests to help guide the countywide Watershed Management Planning process as previously outlined in Section III, D.4. This committee should include liaisons from any sub-watershed committees (e.g. Catoclin) as well as resource people and Loudoun County staff.
3. Seek guidance from the countywide stakeholder steering committee and remain flexible in determining, for each individual watershed planning effort, the form of citizen involvement that is most appropriate for that watershed (e.g. stakeholder committees, task forces, ad hoc groups, focus groups, workshops, forums, presentations to homeowner associations (HOAs), etc.).
4. Consider using existing stakeholder groups (e.g. Loudoun Watershed Watch, Northern Virginia Business Industry Association, Soil and Water Conservation District, etc.) as forums to enlist citizen engagement in the Watershed Management Planning effort.
5. Involve schools and students and use the schools as a forum to involve citizens in the planning process.
6. Recognize that parks and streamside trails are valued community resources that can be used to engage citizens in the planning and implementation processes.
7. Consider using citizen volunteers to conduct some of the public education and outreach initiatives during the planning process to relieve the burden on County staff and to engage citizens in working with their neighbors.

IX. Education

A. Informed Citizenry - The Watershed Planning process should include a strong education component to create a more informed citizenry and to raise the awareness of citizens regarding watershed management needs. Further, the educational component should not be designed only for the plan but also for its implementation.

B. Strategies - The SWMS Team provides the following recommendations and guidelines for the County's outreach and education efforts.

1. Use existing education/outreach programs to avoid "reinventing the wheel."
2. It is important that education and outreach efforts stay independent of the political arena.
3. It is important during the planning process and as part of the plan itself to provide new septic owners with concrete skills and knowledge about monitoring and maintaining septic systems.
4. Use stream valley parks as a venue for education and outreach.
5. Use education and outreach efforts to raise awareness of existing regulations and the need for compliance.
6. It is important to involve the schools and students in the Watershed Management Planning process.

X. Policy and Regulations

A. Guidelines Regarding Policies and Regulations - The SWMS Team agreed on the following guidelines for addressing policies and regulations of the plan.

1. The plan should be designed to integrate land use policies and tools such as zoning ordinance, the Facilities Standards Manual, transportation planning, etc.
2. The plan should support compliance and enforcement of existing regulations and/or recommend changes to County regulations not supportive of watershed protection.
3. The stormwater permitting program is still under development and other programs will need to be used in conjunction with the stormwater program for addressing watershed problems.
4. Watershed planning strategies should be mindful of Virginia's Dillon Rule legal framework. Legal or other expert opinions should be obtained when possible to resolve or clarify differing interpretations, such as inconsistent interpretations of court rulings. For instance, it would be helpful to obtain clarification about alternative septic systems, as there are different approaches being taken in Clarke and Fauquier Counties.

5. The plan should incorporate and address the TMDL regulations and guidelines of the Virginia Department of Environmental Quality and Department of Conservation and Recreation.

B. Guidelines for Handling Issues – The SWMS Team agreed on the following guidelines for handling issues that arise during the Watershed Management Planning process that impact policies and regulations. Some policy recommendations may apply to only one of the County’s watersheds while others may apply to the entire County.

1. Those policy recommendations that are applicable to the entire County should be lifted out of the individual watershed planning efforts and placed on a separate and faster track for consideration by the Board of Supervisors (BOS), so that the policy recommendations are not on hold while the remainder of that watershed plan is being finished.
2. Recommendations for policy changes should be fed into the General Plan as proposed amendments and, where applicable, as amendments to the Zoning Ordinance and Facilities Standards Manual (FSM).

XI. Coordination of County Authorities

A. Coordination Strategies – Creating easy and efficient mechanisms for internal County coordination during the planning process and plan implementation will be essential for success. Watershed planning is complex, involving multiple sources of data, multiple skill sets and multiple County departments. To accomplish this goal the SWMS Team recommends the following strategies.

1. **Designate Watershed Authority** – The BOS should designate where leadership for watershed management coordination will reside, a critical factor for effective coordination.
 - a. In the short term, for the purpose of the Watershed Management Planning effort, the SWMS Team recommends that the BOS designate either an existing department or the Environmental Coordinator as the lead for the watershed planning effort.
 - b. In the long term, given the likely increasing importance of watershed management in future years, the SWMS Team urges the BOS to consider the creation of an Environmental Services Department in its long term planning for County staff.
2. **Designate Coordination Committees** – In addition to designating an authority for watershed planning it is important to establish clear standing mechanisms for coordination among the various County departments. The SWMS Team recommends that two levels of coordination be established.
 - a. **Staff Level** – First, to ensure a mechanism for staff level technical communication, an interagency staff team should be established to meet regularly to coordinate and consult on the various watershed planning activities. This staff level interagency team may also include private partners as needed although care must be given not to provide one stakeholder group an undue influence on decision making.
 - b. **Leadership Level** – Second, to ensure a mechanism for timely decision making and guidance an interagency leadership team should be designated to meet as needed to provide feedback, advice and guidance to the interagency staff team and watershed planning coordinator.
 - c. The SWMS Team members emphasized that neither mechanism is considered sufficient on its own given the highly complex nature of watershed planning and the need for numerous County departments to work together, share resources and engage in joint decision making.

XII. Involvement of County Decision Makers

A. BOS Representation – The SWMS Team recommends that the BOS and incorporated towns either (in order of preference) attend, have representation, or be regularly informed during the watershed planning process. Additionally, the Planning Commission (PC) should be given the opportunity to participate and at a minimum should be kept informed throughout the process.

B. Progress Reports – The SWMS Team recommends that presentations should be made to the following decision making bodies throughout the watershed management planning process, in

consultation with one or two Supervisors as appropriate. Presentations should reflect high level County administration support by having the presentations opened by the County Administrator with technical information provided by the Environmental Coordinator or watershed planning program manager, as appropriate.

1. The Board of Supervisors
2. The Planning Commission
3. Incorporated town (the Coalition of Loudoun Towns (COLT) may be an appropriate venue for these presentations and it may also be appropriate to provide presentations to joint meetings of town councils and planning commissions)
4. The Water Resources Technical Advisory Committee (WRTAC)

XIII. Implementation of the Plan

A. Authority for Implementation – The plan should specify and clarify who will implement each component of the plan, by when, and who has designated authority for implementation.

B. Coordination with Towns – The County should consider adding a provision to the MOU currently under development between it and incorporated towns to enable and assist implementation of the watershed plan.

C. Public-Private Partners – It is important for the County to work with and encourage its private sector partners to continue their ongoing activities in the watersheds throughout both the planning and implementation phases of the watershed management planning process.

D. Implementation Steering Committee – The SWMS Team recommends that a countywide stakeholder steering committee be established to ensure continuing citizen involvement in monitoring and assisting with implementation.

XIV. Implementation of the DOC

The SWMS Team recommends that on conclusion of its work, this Declaration of Cooperation be presented to the BOS and incorporated towns for their review and approval. It should be presented to the Planning Commission and committees listed above (WRTAC, COLT) for their information.

XV. Evaluation of the Watershed Plan

The SWMS Team agreed that the Watershed Management Plans should include a strategy for revisiting and updating the plans over time to ensure that they remain living documents. These plan reviews should be conducted by the County in collaboration with the countywide stakeholder steering committee. An important component for assessing progress in achieving planning goals will be the water quality and stream health data collected under probability and trend monitoring approaches.

XVI. Issues Requiring Further Discussion

TO BE FILLED IN

XVII. Specific Commitments of SWMS Team

Each signatory will create his/her own specific commitment that specifies such elements as:

- A. Continuing role(s) of signatories through the watershed planning effort
- B. Resources (monetary, in-kind, materials, etc.) willing to bring to watershed planning effort
- C. Other commitments to the collaborative effort

TO BE FILLED IN

MARCH ATTACHMENT II

Objectives or Actions for the Watershed Plan (revised by the Goals Subcommittee from the February Meeting – for further discussion during watershed planning phase)

- Economic Development and Watershed Sensitive Growth
 - Ensure that development is site appropriate and minimize the impacts of growth on natural resources.
 - Preserve property values.
 - Balance the watershed planning process; understand impacts of the watershed planning process with economic development, jobs and housing needs with the expected increase in the growth rate in Loudoun County.
 - Implement LID comprehensively and appropriately.
 - Integrate the watershed planning process with the land development process, such as through special protection or overlay districts.
 - Integrate Smart Growth Principles in the Watershed Plan. Consider using the following definition from the Smart Growth Network/EPA: *“Smart Growth is development that serves the economy, the community and the environment. It changes the terms of the development debate away from the traditional growth/no growth question to how and where should new development be accommodated. Smart Growth is a planning concept or philosophy that attempts to make best use of land and infrastructure in order to derive economic and environmental benefits using compact design and other proven techniques.”* For more definition visit <http://www.epa.gov/smarthgrowth>.
 - Create mechanisms to promote continued and new watershed sensitive agricultural activities within the County (e.g. easements that promote farming on community open space or tax incentives or other alternatives to implement BMPs).
- Quality of Life
 - Create and preserve public access to streams, waterways and corridors.
 - Create a linear stream valley park system that provides for buffer protection, recreational access and educational opportunities.
 - Create a program to support watershed goals on the individual home level (e.g. rain barrels)
 - Create mechanisms to support economically disadvantaged citizens so the needs of the watershed can be met (e.g. septic system repair, straight pipe elimination, LID concepts such as rain barrels).
- Regulations
 - Ensure regulation awareness and compliance.
 - Make sure regulations and ordinances support the watershed plan and modify regulations as necessary.
- Public Involvement
 - Create ways that make it easy for citizens to be involved in the planning process, such as through attending a meeting of a citizen’s group that might be difficult to reach otherwise.
 - Develop an educational component of the plan to raise awareness of citizens.
 - Engage citizens in the watershed planning process and implementation and “go beyond the choir” in outreach efforts within the watershed to include people that might not otherwise be involved in the effort.
 - Have a strong education component in the watershed planning process to create a more informed citizenry (such as with septic system educational effort).
 - Localize citizen meetings that discuss local issues with respect to the watershed.
- Water Quality
 - Protect existing well water supply during the construction of new water wells.
 - Prioritize areas of focus within watershed specifically in regard to source water protection.
 - Protect, restore and maintain healthy aquatic ecosystems (determine health of streams by macroinvertebrate studies and other means).
 - Maintain and restore riparian corridors.

- o Preserve wetlands.
 - o Mitigate stream and wetland impacts within Loudoun County, mitigating within the affected watershed to the extent possible.
 - o Develop enhanced stormwater design criteria.
- Data Management
 - o Focus on or give priority to rectifying pre-existing conditions in the watershed planning effort (retrofits).
 - o Inventory, map and monitor all water resources within the watershed.
 - o Create a common database to store water quality and quantity data from all entities collecting data in the county.
- Plan Management
 - o Loudoun County Government (BOS) create staff and a natural resources department empowered to do environmental review and recommend policy
 - o Evaluate current and future planning and implementation funding options and create a template for funding opportunities including a cost benefit analysis of multiple funding options.

LOUDOUN COUNTY STRATEGY FOR WATERSHED MANAGEMENT SOLUTIONS (SWMS)

Meeting Summary

May 4, 2006

Best Western Hotel, Leesburg, Virginia

Project Overview

The Strategy for Watershed Management Solutions (SWMS - or the Strategic Watershed Management Solutions) effort is designed to be iterative, adaptive and collaborative in developing a countywide plan to manage water resources in Loudoun County on a watershed basis. The consensus building effort involves various groups including government agencies (county, state and federal), active community and citizen groups, development and commercial groups, agricultural interests and non-governmental organizations. The strategic plan will be used to develop a subsequent, comprehensive watershed management plan (CWMP).

Welcome and Updates

More than 40 people gathered for the third meeting of the Loudoun Strategic Watershed Management Solutions (SWMS) Stakeholders Team. Christine Gyovai and Tanya Denckla Cobb, meeting facilitators from the University of Virginia Institute for Environmental Negotiation (IEN), welcomed participants and provided an overview of the process, including a review of the protocols established for how the SWMS Team agreed to work together. The group reviewed the consensus decision making process to reaffirm that the group is working toward developing a consensus document, the Declaration of Cooperation. The group reviewed the March meeting summary and a variety of progress updates were given, which are below.

Loudoun County Supervisor Sally Kurtz pointed out that the scheduled June 6th date for the next SWMS meeting was also a Board of Supervisor's meeting date. Others said they would not be able to attend because of this scheduling conflict. In response, an alternate date of June 14th was set for the June SWMS meeting.

Kelly Baty, SWMS Project Manager for the County, informed the group that he has been in communication with Matt Meyers of Fairfax County who could not attend the meeting. He and Mr. Meyers wanted the Team to know they were working on some language for the Declaration of Cooperation which would allow the two counties to cooperate and coordinate on watershed planning.

Bruce McGranahan, Loudoun County Planning Department, gave a brief update on his presentation of the SWMS process to County's Transportation and Land Use Committee on the 24th of April. He will be giving a presentation to many of the towns in July at a Main Street meeting.

Kelly Baty informed the group that Traci Goldberg of the Fairfax Water Authority would be joining the next SWMS meeting in June. She would like to arrange for a SWMS update PowerPoint to be given at the next Fairfax Water Authority meeting on June 1st.

Linda Neri, Deputy Loudoun County Administrator, pointed out that until this process is over any presentations should emphasize that these are not official County views with Board of Supervisor

approval. Ms. Neri also recommended that a presentation be given to the Northern Virginia Building Industry Association (NVBIA), perhaps at their next monthly association breakfast gathering. The facilitators did note that SWMS participant, George McGregor, was on the group representative for NVBIA and the National Organization of Industrial and Office Properties (NAIOP). Also, Mark Hassinger (NAIOB) and Michael Capretti (NVBIA) were both invited to participate in the SWMS Team, but opted to remain on the “informed” list.

Phil Daley of Loudoun Wildlife Conservancy mentioned that they will be initiating a new monitoring program and that there is not much mention in the Declaration of Cooperation or draft work plan about vernal pools or road crossings. The SWMS Team supported including more detail about these items in the subsequent watershed plan.

Charlie Faust, BOS appointee to the Water Resources Technical Advisory Committee (WRTAC), pointed out that at the WRTAC meeting in April they had some discussion of the SWMS process and Declaration of Cooperation (DOC). The topic of the relationship between WRTAC and SWMS process was identified as something that should be further addressed. This topic was discussed at the SWMS meeting and further information is below about the proposed relationship and structure of the committees.

Tanya Denckla Cobb provided an update on a meeting with Loudoun Board of Supervisor Kurtz, Supervisor Snow, and Deputy County Administrator Linda Neri, as well as project planning staff on May 1, 2006, where the main concepts in the DOC were reviewed. The Supervisors were generally very supportive of the process and provided helpful feedback on the DOC. Loudoun County Supervisor Stephen Snow affirmed this positive reception, adding that it is important that this process translate into action. He stated that Loudoun has made great strides in getting people to work together because it’s “the right thing to do.” Mr. Snow also stated that the County should grow the program to incorporate the Chesapeake Bay Standards to allow for program credibility and possible funding opportunities afforded by the adoption of the Chesapeake Bay Standards.

The opening and updates concluded with appreciation being expressed to those who had worked on the ad hoc committee in preparation for the May 4th meeting and in particular to Darrell Schwalm of Loudoun Watershed Watch who convened the ad hoc committee and worked hard on the DOC and draft work plan.

Components of IEN’s Final Report to Loudoun County

Christine Gyovai walked the group through the proposed elements of IEN’s Final Report for the SWMS process. These elements are 1) Executive Summary and Summary of Strategy; 2) Declaration of Cooperation (DOC) including Quality Assurance Quality Control standards; 3) Watershed Inventory and Analysis of Watershed Activities; 4) Watershed Planning Work Plan; and 5) Appendices such as meeting summaries, participant lists, etc. The detailed list of these elements is attached below.

The Executive Summary portions and DOC were further discussed at a later point in the meeting. The group agreed that the draft Work Plan has been taken as far as it can by the SWMS Team and that any further work on the Work Plan needs to be undertaken by the Steering Committee in the next phase of watershed planning.

Jason Espie of IEN gave an update of the inventory and introduced the need for an analysis of watershed activities. He presented a draft worksheet to provide an additional examination of information collected for the Watershed Inventory. The worksheet presented a number of proposed metrics to measure

activities in the watershed, including linear feet of riparian buffers planted, or under conservation easement, acres of wetland preserved, etc. The group was asked to reflect on the metrics proposed in the worksheet: are these the correct measures, can they even be measured, and if not what would be proposed? The following discussion points, concerns, suggestions, and comments were made:

- Someone did not understand what was meant by “linear feet of floodplain setback.” The intention of this was to measure areas classified as floodplain that would have development restrictions or limitations. Mr. Espie pointed out that these are just proposed metrics and if they don’t make sense then SWMS Team members need to propose more accurate ways to measure watershed activities.
- The Piedmont Council said they have maps of acres of easement in a watershed and could provide this.
- It was noted that the Environmental Protection Agency’s (EPA) Tributary Strategies report has statistics and information that could be inserted into metric columns. Loudoun County staff has worked on these measurements. David Ward offered to help gather this information.
- The County has a number of environmental overlay districts such as mountainside, steep slopes and limestone overlay areas that were measured as part of the Tributary Strategies efforts. These can be included in the inventory and measurement analysis. Alex Blackburn offered to help include these data.
- There was a question about how to measure citizen stewardship activities, including volunteer monitoring. It was suggested that appropriate metrics might include: the number of stream clean-ups, the number of miles cleaned, the number of volunteer monitoring sites and number of times each site is monitored.
- Many watershed activities are ongoing but the purpose of the inventory and analysis is to establish a baseline of what is being done or has been done.
- The group agreed that the analysis should only attempt to quantify activities in the last five years, since 2001.
- The inventory still needs activity costs to be included. Participants will need to provide this information to Mr. Espie.
- A concern was raised that the inventory might convey only work that has been done to improve the watershed and might portray an inaccurate picture of the watershed by failing to portray how much watershed has been degraded. One participant suggested that the State of the Streams report can illustrate the degraded condition of the watershed. Another noted that this was not the intention of the inventory and analysis of watershed activities. Still, it should not convey the false impression that all is well with the watershed and perhaps the Executive Summary could address this. Participants did affirm that the inventory was still important for the watershed planning process as it represents a baseline of who-is-doing-what. The inventory can help identify what is being done and thus can help prioritize what needs to be addressed first.
- The group agreed that the inventory and analysis should focus just on activities and should provide rough measurements where possible. This analysis is not an attempt to analyze or precisely quantify every watershed activity in Loudoun County throughout history but rather to understand what is happening today.
- It was pointed out that the LEIP (activity 2.02) is actually a Loudoun County project. Also activity 3.05 should not be in this inventory (it will be removed).
- Mr. Espie will contact individuals who have contributed to the inventory thus far. Just one point-person per activity will be contacted to avoid redundancy. They will be emailed the Excel worksheet and will be asked to fill in the metrics columns or to provide some measurement for each activity as well as other information such as cost. Input on the inventory is requested by May 26, 2006 and should be sent to Jason at jespie@virginia.edu.

Declaration of Cooperation Review and Discussion

The facilitators turned the group's attention to the latest version of the Declaration of Cooperation (DOC). The DOC was projected on a screen for group editing and review. Live edits were made to the DOC which is attached at the end of the meeting summary. General discussion points that emerged during this group editing session follow:

- Section I: Joe Gorney offered to rewrite the 'background' sentence which received some discussion because of concerns that it needed to be phrased more positively.
- Section II: Supervisor Snow stated that there is urgency for compliance with the Chesapeake Bay Preservation Act (CBPA) and the group agreed that additional language should be included in the DOC to reflect this. Darrell Schwalm and Todd Danielson offered to revise the DOC with this language.
- Section IV: In the Vision there was some group discussion on the wording of "dictate value" for people vs. stating that people "have values." Some felt a future vision should not prescribe values for people. Some felt that in order to have a healthy environment people need to value it. The group struggled with the difficult question of how to encourage a community to value for its different quality-of-life assets. After group discussion, Charlie Faust and Gem Bingol volunteered to re-draft the vision statement. The revised text reads as follows:

Loudoun County is a place where natural and cultural resources offer beauty and function. Residents and visitors enjoy clean drinking water, recreate in swimmable and fishable waters, and have access to diverse natural habitats. Loudoun's residents remain informed, energized, and involved in maintaining and protecting healthy watersheds. "

- In Section IV.C.4. there was discussion of wording around economic development opportunities. Someone suggested using "appropriate" while others said that "appropriate" is a word that lacks clarity. Joe Gorney offered to do some re-drafting for this point.
- Section IV.C.7: clarification is needed for recreational use of water resources. Does this mean people need to open up their properties to public access? Jim Christian worked with Charley Faust and David Ward to re-draft this statement.
- Section IV.C.9: there was discussion around what value is being conveyed by "agricultural heritage." It was pointed out that the County does not distinguish between agriculture and industry when it speaks of economic development. It was asked if the DOC could be more specific in its value statement concerning agricultural heritage and economic development. Ed Gorskey, Joe Gorney and Chris Van Vlack offered to re-draft text for these bullets.
- Section V: There was some discussion about regional watershed planning and cooperation with neighboring counties. In terms of regional watershed planning, should Loudoun not be focusing more on collaborating with *upstream* neighbors as that could have more beneficial impact on the quality of Loudoun's water? One member responded that Loudoun County is evaluated on the condition of the waters leaving, not entering, the county. Another member noted that contaminants in the Potomac do affect the cost of Loudoun drinking water. In addition, non-point source pollution contaminants in County stormwater are a strong factor affecting the quality of Loudoun water. Ms. Denckla Cobb summed up the discussion, saying that there seemed to be agreement on the need for greater regional cooperation - upstream and downstream - and there is a need to work more on how to cooperate or involve Fairfax County in the process. Kelly Baty will work with Matt Meyers to develop language on this issue. The language will also include cooperation with Prince Georges, Prince William and Fauquier Counties.
- Section V.4: There was some discussion over the concurrent watershed planning approach proposed. The concurrent approach seemed overwhelming to some people. For example, how long is Phase I going to last? Darrel Schwalm pointed out that Phase I is based on using existing data, and

being able to start on activities immediately without having to collect more or new data.

- Modeling Section (2nd Section IV, but wrongly numbered): There was some concern that the modeling section was perhaps too prescriptive or detailed for this strategic planning effort. It was suggested that the future Steering Committee should ideally address these elements on a subcommittee level. Perhaps this section of the DOC could simply be culled down and made more general. It was acknowledged that modeling is a very major component of watershed planning, but mostly likely for Phase II. The decision was to summarize modeling briefly within the DOC and to put most of the detailed recommendations in an appendix.
- Data Management Section (2nd Section V): The central database/database coordinator issues received some discussion. It was pointed out that the County does not currently have the capability for funding this position. Supervisor Snow suggested not removing this request as the DOC contains several recommendations for funding which will need further consideration by the BOS; emphasizing the Chesapeake Bay Preservation Agreement (CBPA) obligations would be important toward this end. A cover letter or the Executive Summary to the BOS can then call attention to steps needed to implement the recommendations.
- Section XII, A.1. and A.2.: There was some discussion about the relationship between watershed planning and land use policies and tools. One participant stated that a watershed management plan should not be used to control land, nor should it be a land use document. Others pointed out that there are strong linkages between land use and watershed issues and that the relationship needs to be addressed. Joe Gorney volunteered to submit new language that will address these concerns for consideration by the SWMS Team.
- Section XI.A.1.b: There was consensus that the DOC should serve both short and long term recommendations. Supervisor Snow said that compliance with the CBPA provides the justification needed for creating additional governmental positions and services, especially for many who have consternation over growing government. This issue would be received more positively if it is presented as a regulatory requirement with the CBPA as the motivating factor.

Executive Summary Discussion

Immediately following the lunch break, Tanya Denckla Cobb led discussion related to the Executive Summary of the DOC. A participant expressed that the Executive Summary should not be too narrowly focused on sourcewater protection as there are other important aspects of watershed planning.

One member requested clarification on the next steps in the watershed planning process and whether BOS approval is needed. Kelly Baty explained that approval of the BOS is not needed for funding the immediate next phase of watershed planning, as the BOS approved the original grant and staff is expected to fulfill the terms of the grant. A request for proposal (RFP) will be issued for a firm to develop a watershed plan according to the terms of the DOC, working with the Steering Committee that is to be formed, and using other information in the Final Report of the SWMS process. Participants noted that an RFP for continued work needs to specify the scope, focus and defined parameters of work.

A number of participants commented that the final report should have a much stronger connection with the Chesapeake Bay Protection Agreement (CBPA). There is the potential of significant expense associated with non-compliance with the CPBA. Watersheds not in compliance with CBPA will likely be assessed fines. Therefore, watershed management needs to be expressly linked to the CBPA agreement and placed at the top of the Executive Summary.

Participants noted that the final report should also take note of resources such as the Community Watershed Assessment Handbook published by the Chesapeake Bay Program http://www.chesapeakebay.net/pubs/watershed_assess/, as well as the work of adjacent counties

through such activities as the Potomac River Roundtable <http://www.potomacroundtable.org/>, and the Department of Environmental Quality's Water Supply Planning Program <http://www.deq.state.va.us/watersupplyplanning/homepage.html>.

Future Committee Structure

The group next discussed the structure and role of the proposed stakeholder Steering Committee which is envisioned to guide the next phase of watershed planning. A proposed structure diagram was handed out as a starting point for the discussion. The question was raised as to who should serve on this Steering Committee. A proposal was made that the Steering Committee should be comprised of groups that have signed onto the DOC; concerns were also expressed that this might unnecessarily limit membership in the Steering Committee. This point will be further discussed at the next SWMS meeting on June 14th.

The concern of future coordination with the WRTAC was raised and discussed by the group. It was explained that the WRTAC reports to the Board of Supervisors (BOS) through its Transportation and Land Use Committee (TLUC). The WRTAC is charged with water resource management in an advisory capacity only to the BOS. They do not have a lot of resources for planning or watershed management. Their role was, in the words of one participant, "to review things, not do things." In addition, the WRTAC has not existed during specific time periods, according to Team members, which raises concerns that the Steering Committee could lose its conduit to the Board if the WRTAC is either discontinued or falls into disfavor.

Team members noted that the Steering Committee (SC) would be a new and separate group and asked how it would collaborate or relate to the WRTAC, especially in terms of BOS or TLUC communications. One suggestion made was that since the WRTAC already has a formal relationship with the Board and since it is assumed that WRTAC would have a representative on the Steering Committee, like it does on SWMS, then the SC's reporting and communication should be channeled through it. However, participants noted that a problem could arise if the SC and WRTAC could not agree on an issue. In cases of disagreement, should the SC report straight to the BOS? It was noted that this might be difficult because it is hard to get on the BOS agenda and communication is usually channeled through committees such as TLUC and WRTAC.

A question was posed about whether the SC work and reporting could be under the umbrella of the LCSA. One participant noted that he expected the SC to go through WRTAC, but if it were the wish of the Board for the SC to go through LCSA it could take years for that relationship to become a reality. LCSA currently does not have watershed planning as part of its charter and modifying this could take a long time.

Someone suggested that these details could be worked out in the next phase by the Steering Committee itself. Someone else observed that the SC is a stakeholder group and not all activities are dependent on the County for implementation or action. The group noted that ultimately it is better to coordinate and cooperate; those people who are already doing watershed activities will likely continue to do so regardless of how the SC is set up. It was also pointed out that the County's staffing and financial resources are a significant part of any watershed planning and implementation process.

Another possible scenario was presented, wherein the SC would be comprised of all organizations that have committed themselves through the SWMS process to work on watershed planning. They would not

need to have BOS approval to meet or work. This would be a kind of umbrella committee for all groups and committees committed to watershed planning.

A suggestion was made that the discussion could focus on the SC paths of communication with county government and organizations more than on reporting or organizational structure; also, more than one “structure chart” may be necessary to articulate the various functions and relationships of the Steering Committee. Three types of charts were proposed:

1. Decision Making
2. Organization
3. Communication

It was acknowledged that this is a complex job and a small working group was tasked to work on the proposed charts later in the afternoon.

Commitments for the DOC

There was a discussion of the draft commitments, as some participants expressed difficulty in understanding what should or could be included in a “commitment” that would be incorporated at the end of the DOC. The facilitators explained that the “commitments” are simply an articulation of how an organization or agency intends to be involved in the watershed planning effort and what it can contribute – such as participation in the SC, continuing to conduct water monitoring, conducting citizen education, writing or leveraging grants, etc.

There was some concern raised that for organizations or agencies, especially large ones with their own mandates, getting approval for signing the DOC may be difficult to achieve. Individuals expressed that there are elements in the DOC that are not relevant to the groups they represent. The question of “what does a signature” mean was raised.

To give flexibility to the DOC signing or approval process, several DOC signing options were proposed:

1. Sign the DOC to indicate support for its content, without offering a specific commitment of resources. Signing the DOC could occur at the June meeting or could be in the form of a pre-signed letter of endorsement brought by the organizational representative.
2. Make a specific commitment of resources, without actually signing the DOC,
3. Not signing the DOC or making a commitment, but simply supporting or participating in the SC.
4. Signing the Executive Summary as opposed to the DOC.

No consensus was reached on how SWMS members may indicate support for their consensus work.

IEN will work with County staff to sort through these options and will send out a draft signature page and a clarification for what signature options are available to the SWMS Team.

Work Plan Discussion

Christine Gyovai introduced the draft Work Plan to the group, commending the hard work of the ad hoc committee convened by Darrell Schwalm. The draft work plan turns the elements of the DOC into a specific action plan. One member asked if this draft work plan should be more realistic or more of a wish list, and people agreed that a realistic approach was more desirable. The question was raised if this draft work plan was even necessary at this stage of strategic planning, for the Steering Committee would ultimately need to define its own action plan. Perhaps the Team’s time could be better spent by

identifying 5-6 elements of the proposed work plan that should receive priority. There was general agreement that the draft work plan does not need further work at the present; instead a small group would meet in the afternoon to identify the priority 5-6 actions necessary to “keep the momentum” going after the SWMS process concludes.

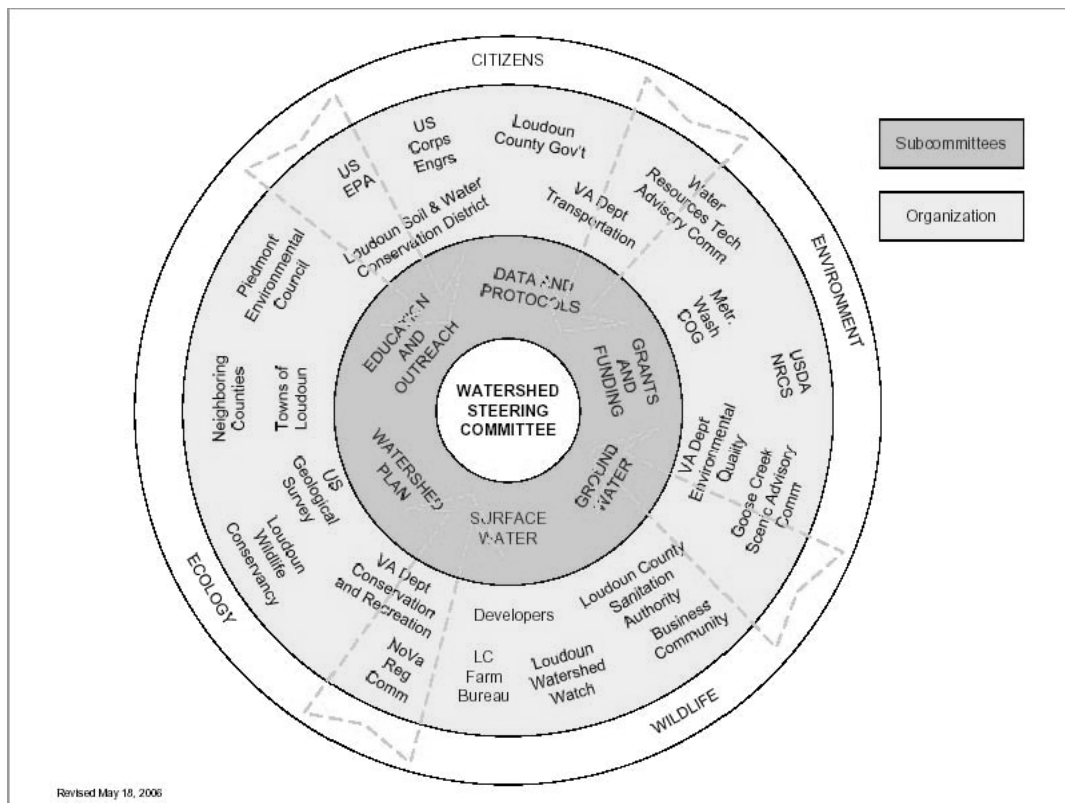
Working Group 1: Work Plan Priorities for “Keeping the Momentum”

Bruce McGranahan reported on the conclusions of the small working group charged with identifying priorities and actions for the immediate next phase after the SWMS process - specifically action items to *keep the momentum* going. The group’s refrain was an enthusiastic – “sell, sell, sell” – meaning there is a strong need to get the word out and generate support for the watershed planning effort. The following six priority actions were proposed:

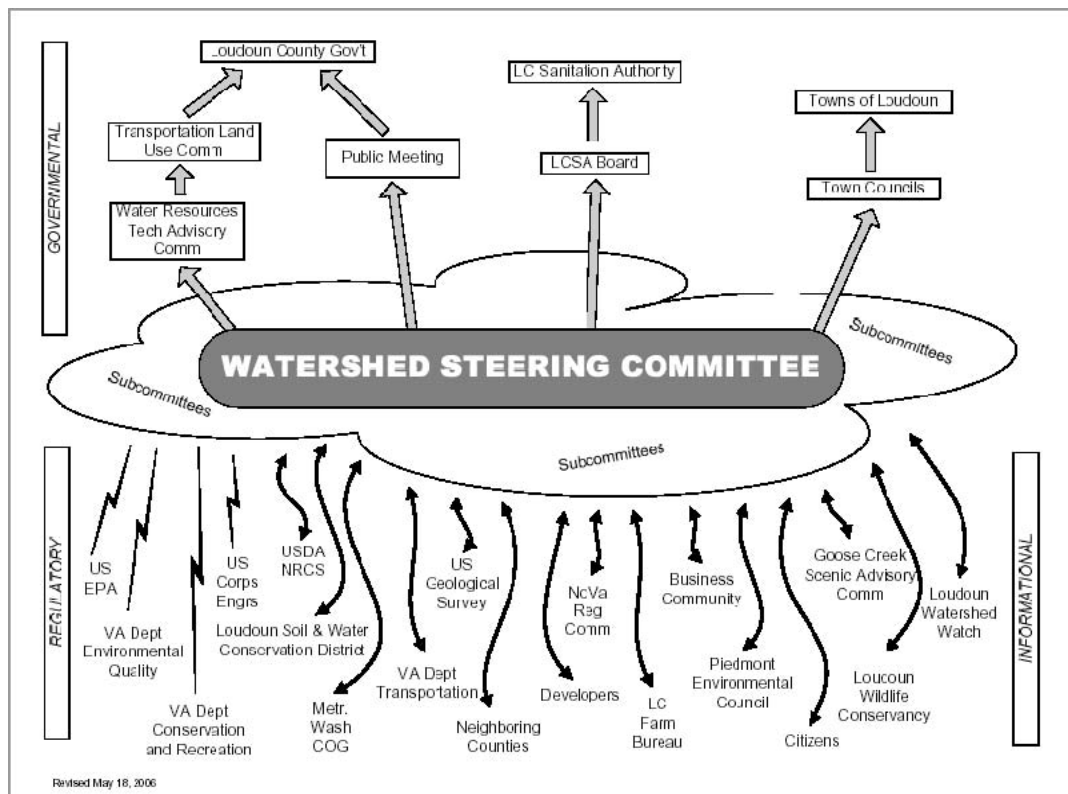
1. Establish the Steering Committee
 - a. SWMS Team members are seen as a good starting point for composition of the Steering Committee (SC). School representation needs to be added.
 - b. The SC should be broadly representative of groups that are in Loudoun County, with approximately 20-25 people.
2. Complete the Inventory of Watershed Activities
 - a. This should follow-up and complete the work of the SWMS Team.
 - b. This may be accomplished by an interim “Bridge Committee” that could work together over the summer before the SC forms in the fall.
3. Define “Who are we?”
 - a. Find effective and understandable means to communicate (and translate) who the group is (the interim Bridge Committee or the SC – basically for the whole effort).
 - b. Define how this group relates to other groups (process) and what does it mean to Loudoun?
4. Educate elected officials, including the individual BOS members, about the watershed planning effort and its importance (“selling” the effort).
5. Educate and “sell” to towns and other groups
 - a. Education should happen for elected officials first and then citizens in the long term.
 - b. Use existing educational materials as much as possible, including DCR and Cooperative Extension’s educational printed materials.
6. Design the marketing approach and materials for the education effort.

Working Group 2: Committee Structure

A small group met to further develop the Steering Committee Structure ideas. David Ward reported on the conclusions of the small working group charged with drafting the structure charts (organization, decision-making and communication) for the Steering Committee. The group presented two charts, one for the internal organizational structure for the Steering Committee and one for communications. The group struggled through a number of the complexities raised in the wider group discussion and went through a number of iterations of drawn charts to arrive at these diagrams. The following chart represents the Steering Committee’s organization as presented to the group.



The following diagram represents communications channels of the Steering Committee as presented to the group:



Next Steps / Preparations the Final June Meeting

The facilitation team reviewed a list of next steps and other actions necessary to prepare for the final June 14th meeting of the SWMS team. There was some discussion on the need to address the issue of consensus and what to do about people who may not have attended all four meetings. It was agreed that anyone who attended at least one meeting could be eligible to sign or commit to the DOC. At the June meeting the final DOC will be reviewed, including the list of participants who were involved in the consensus process. Participation is defined as attending at least one meeting.

Next steps identified:

- 1 The Cost Benefit section of the Final Report needs to be drafted. The subcommittee charged with doing this is comprised of Kelly Baty, Marc Aveni, Jim Christian and Rob Swanson.
- 2 A team was designated to communicate with the BOS to build support for SWMS. This subcommittee is comprised of Bruce McGranahan, Chris Van Vlack, Gem Bingol and James Mackie. Ideally one-on-one board member meetings will be part of this effort.
- 3 Work is needed for the "Decision Making Chart." The subcommittee that is working on this is comprised of Alex Blackburn, Helen Casey, Mark Peterson, Glen Rubis, Todd Danielson, Gem Bingol, David Ward, Darrell Schwalm and Kelly Baty. This group also needs to make recommendations on the name for the Steering Committee - should it be called a round table, forum, or council? Also, what would be the criteria for membership or participation?
- 4 Inventory and Analysis. Jason Espie will individually contact point-persons for each activity to obtain metrics or missing information. Feedback is due by May 26, 2006.
- 5 Those that agreed to send new DOC language need to provide it ASAP.
- 6 IEN will work with the County to identify how and what members will sign to express support for the DOC.

The final meeting of the SWMS Team will be held on June 14, from 9:00 am - 4:30 pm, at the Best Western Hotel in Leesburg. Tentative discussion items include the following:

- Work plan
- Structure and name for Steering Committee
- Membership of SC
- Plan for convening SC
- Cost/Benefit for the watershed plan
- Signing the consensus document and reviewing any specific commitments being offered
- Celebration

Attachments

Final Report Components

DOC (The latest version, with changes from meeting)

List of Participants (May 4, 2006 Meeting)

WATER SUPPLY

Todd Danielson, Loudoun County Sanitation
Authority

FEDERAL & STATE AGENCIES

James Christian, SWCD District Board
Peter R. Holden, Loudoun Soil & Water
Conservation District
Patricia (Pat) McIlvaine, Virginia State Soil and Water
Conservation Districts
Pawan Sarang, P.E., Virginia Department of
Transportation
Bob Slusser, Virginia Department of Conservation and
Recreation
Robert Swanson, VA Department of Environmental
Quality
Chris Van Vlack, Virginia State Soil and Water
Conservation Districts
Larry Wilkinson, U.S. Department of Agriculture,
NRCS, FSC, USDA

LOUDOUN COUNTY

Wm. Kelly Baty, Loudoun County Department of
Building and Development
Alex Blackburn, Loudoun County Department of
Building and Development
Dennis Cumbie, Loudoun County Department of
Building and Development
Charlie Faust, Water Resources Technical Advisory
Committee
Joe Gorney, Loudoun County Planning Department
Sally Kurtz, Loudoun County Board of Supervisors
James Mackie, Loudoun County Environmental Health,
Environmental Engineering and Policy
Development
Bruce McGranahan, Environmental Program
Coordinator, Loudoun County Planning
Department
Linda Neri, Deputy County Administrator, Loudoun
County

Glen Rubis, Loudoun County Department of
Building and Development

Stephen Snow, Loudoun County Board of
Supervisors
David Ward, Loudoun County Public Works
Randy Williford, Loudoun County Public Works

LOUDOUN PUBLIC & AGRICULTURAL GROUPS

Chris Hatch, Loudoun County Farm Bureau Donna Rogers,
Loudoun County Farm Bureau

CONSERVATION & ENVIRONMENTAL GROUPS

Gem Bingol, The Piedmont Environmental Council
Helen Casey, Goose Creek Scenic River Advisory
Committee
Phil Daley, Loudoun Wildlife Conservancy
Cliff Fairweather, Audubon Naturalist Society
Ed Gorski, The Piedmont Environmental Council
Darrell Schwalm, Loudoun Watershed Watch Nancy West,
Goose Creek Association

DEVELOPMENT COMMUNITY

Mark Headly, Wetland Studies and Solutions, Inc. (WSSI)
Mark Peterson, Luck Stone Corporation
David Snellings, Greenvest L.C.

REGIONAL GOVERNMENT Michael T. Hackett,
Metropolitan Washington Airports Authority,
Department of Planning

FACILITATION

Tanya Denckla Cobb, Institute for Environmental
Negotiation, UVA
Jason Espie, Institute for Environmental Negotiation, UVA
Christine Muehlman Gyovai, Institute for Environmental
Negotiation, UVA

MEDIA Katie Murphy, Loudoun Observer

The Loudoun Strategy for Watershed Management Solutions (SWMS)
Draft Final Report Outline
May 3, 2006

1. **Executive Summary and Summary of Strategy:** The Executive Summary will present a brief overview of the DOC recommendations, possibly including action items for consideration by the Board of Supervisors and town councils.

a. **Cost-Benefit Analysis:** The Executive Summary may include a cost/benefit analysis of conventional approaches to resource protection vs. watershed-based protection, restoration, treatment and preservation.

b. *Note: The cost/benefit analysis must be completed by people with expertise in this area, ideally a subcommittee of the SWMS Team.*

2. **Declaration of Cooperation (DOC):** The DOC will represent the detailed consensus recommendations of the SWMS Team for Loudoun's watershed planning effort. The DOC is intended as the main document that will guide Loudoun's watershed planning.

a. **Quality Assurance/ Quality Control:** The DOC will include a set of standards and protocols for data collection, analysis, and reporting. This could be accomplished through a consensus recommendation of the SWMS Team that the Steering Committee or its subcommittees (e.g. data management or technical subcommittees) may adopt protocols as the need arises.

3. **Watershed Inventory:** This is an inventory of all current and potentially future anticipated watershed-related activities in Loudoun County by local organizations, state and federal agencies and county and regional government. Costs associated with these current and future anticipated work will be included where possible, based on input provided by the SWMS Team members.

This inventory will also include an **analysis of watershed activities** The analysis will begin to quantify pollution reduction achievements of these activities by using a variety of metrics, such as linear feet of riparian buffer planted, streams restored, floodplain setbacks achieved, or acres of wetlands preserved or restored, based on input provided by the SWMS Team members.

4. **Watershed Planning Work Plan:** This work plan will specify tasks derived from the Declaration of Cooperation, along with a timeline, responsible parties, partners and resources needed. As part of this work plan, an organizational structure will be included to suggest how the different groups may relate and work with each other.

5. **Appendices:** The appendices will include all other documentation related to the SWMS Team effort.

a. Meeting summaries

b. List of people contacted by IEN to participate in the SWMS effort and participants in each of the SWMS Team meetings.

c. Summary of IEN interviews of stakeholders.

The Loudoun County Strategic Watershed Management Solutions (SWMS)

February-June, 2006

Declaration of Cooperation Executive Summary

*******DRAFT 5/26/06*******

The Declaration of Cooperation (DOC) provides a consensus strategy for guiding Loudoun County's watershed planning process. The DOC was created by the 55 member Loudoun Strategic Watershed Management Solutions (SWMS) Team, consisting of representatives of 41 different development, agricultural, conservation, county, state, federal and citizen interests. Team members worked over the course of four intensive meetings (February to June 2006) to develop this consensus guidance and request the Loudoun County Board of Supervisors and towns enact resolutions of support for the DOC.

In recognition of the need for continued collaboration through the watershed planning process, the DOC describes the County strategy for watershed planning and also identifies specific Team member commitments for supporting the County strategy. *(For further background on SWMS, see the Summary of SWMS. For specific commitments of Team members, see Appendix F.)*

Need: Loudoun County currently manages its water resources through a variety of diverse programs, but has no countywide watershed plan that connects these programs or establishes priorities among the programs. A watershed plan will bring together the County's needs, priorities, and implementation plans into a specific project that will protect and restore its water resources. It will provide an integrated picture of federal and state obligations for removing pollutants from Loudoun's waters, combined with priorities for protecting drinking water and preventing pollution of currently clean waters. *(For more specifics on what a watershed plan will cover, see the Summary of SWMS, page 2.)*

Principles, Vision, Values and Goals: The SWMS Team identified guiding principles for the planning process and crafted a vision, values and goals for the watershed plan, which may be found in the DOC, Section II.B.

Scope and Overall Process: The SWMS Team recommends a *two-phased approach* to develop watershed plans. A phased approach will enable the County to immediately begin watershed planning using currently available data to minimize cost. It will also allow the County to enhance the quality and sophistication of its plans over time as additional resources become available. The watershed planning process will result in watershed plans for nine major watersheds within the County and support the watershed activities of neighboring counties where the natural borders of some of the nine watersheds end. When more resources become available to the County more data collection and analysis, followed by the development of more sophisticated and detailed watershed plans will ensue. *(For more information on the two-phased approach, see the DOC, Section III.)*

Collaborative Governance Approach: To provide policy and technical oversight for the watershed management process, a county-wide Stakeholder Steering Committee will be formed to guide implementation of this Declaration of Cooperation, develop watershed plans and resolve other issues related to watershed management. The SWMS Steering Committee may designate subcommittees to specifically resolve issues such as data management and storage, funding and other technical matters which in turn will work with other subcommittees designated from BOS Advisory Committees (e.g. LUTC, WRTAC, etc.) Please see the committee organization chart in May Attachment II, p. 150.

BOS Action Needed: The SWMS Team requests that the Board of Supervisors and town councils pass a Resolution of Support for this strategy, which has been developed through hard work and dedication of a diverse and broadly-representative group of stakeholders.

The following specific actions will result from this Resolution of Support:

1) Designate a Watershed Coordinator or Manager: The Watershed Coordinator or Manager will be responsible for coordinating the County's watershed planning, and will report directly to the County Administrator's Office. The Manager's or Coordinator's responsibilities will include being the contact and liaison between the stakeholder Steering Committee, the staff and County Administrator's Office.

2) Establish a County-wide Stakeholder Steering Committee: The SWMS Team will empower the Steering Committee to begin to guide the watershed planning activities and to implement the Declaration of Cooperation. *(For more information on the Stakeholder Steering Committee, see the DOC, Section 3.C.)* The Steering Committee will create several key subcommittees that will guide key watershed planning activities, which may include: 1) funding; 2) data management; 3) education and outreach; and 4) technical coordination.

Participating Members of the SWMS Team

FEDERAL AND STATE AGENCIES

Virginia Department of Conservation and Recreation (DCR):
Bob Slusser, Mark Aveni
Virginia Department of Environmental Quality: Robert
Swanson, Bryant Thomas
Virginia Department of Forestry: Kelley Wagner
Virginia Department of Transportation: Pawan Sarong
Soil and Water Conservation District Board: Jim Christian, Peter
Holden, Pat McIlvaine, Chris Van Vlack
U.S. Department of Agriculture, NRCS, FSC, USDA: Larry
Wilkinson
U.S. Geological Survey: Mark R. Bennett, Nick Ratcliff (retired)
U.S. Army Corps of Engineers: Stacey Sloan Bliersch
U.S. Environmental Protection Agency: Debra Gutenson,
Office of Ground Water and Drinking Water; Otto
Gutenson, Wetland and Waters Program

LOCAL GOVERNMENT

Fairfax County: Matt Meyers
Lovettsville: Samuel Finz
Loudoun County Administration: Linda Neri
Loudoun County Board of Supervisors: Sally Kurtz,
Stephen Snow
Loudoun County Department of Building and Development: Wm.
Kelly Baty, Glen Rubis, Alex Blackburn, Dennis Cumbie, Laura
Edmonds, Ed Erwin, Kevin Haile, Steve Kayser, William
Marsh, Todd Taylor, John Zuiker
Loudoun County Economic Development: Warren Howell
Loudoun County Environmental Health, Environmental
Engineering and Policy Development: James Mackie
Loudoun County Office of Mapping and Geographic Information:
Trent Small
Loudoun County Parks and Recreation: Mark Novak
Loudoun County Planning Department: Bruce McGranahan,
Joe Gorney
Loudoun County Public Works (General Services, Stormwater):
David Ward, Randy Williford
Loudoun County Public Schools: Evan E. Mohler, Randy Vlad
Water Resources Technical Advisory Committee (VRTAC): Charlie
Faust

WATER SUPPLY

Loudoun County Sanitation Authority (LCSA): Todd
Danielson

PUBLIC AND AGRICULTURAL GROUPS

Loudoun County Farm Bureau: Chris Hatch, Donna Rogers
Loudoun County Cooperative Extension: C. Corey Childs
Farmer: Chip Plant

CONSERVATION AND ENVIRONMENTAL GROUPS

Audubon Naturalist Society: Cliff Fairweather, Stella Koch
Catocin Scenic River Advisory Committee: Ann Larson
Goose Creek Association: Nancy West
Goose Creek Scenic River Advisory Committee: Helen Casey
Loudoun Watershed Watch: Darrell Schwalm, Fred Fox
Loudoun Wildlife Conservancy: Phil Daley
The Piedmont Environmental Council (PEC): Gem Bingol, Ed
Gorski

DEVELOPMENT COMMUNITY

Greenvest L.C.: David Snellings, George McGregor
Heavy Construction Contractors Association: Jim Stepahin
Luck Stone Corporation: Mark Peterson
Toll Brothers: Bill Hatzler
Wetland Studies and Solutions, Inc. (WSSI): Mark Headly

REGIONAL GOVERNMENT

Metropolitan Washington Airports Authority: Michael T.
Hackett, Charles Baummer
Metropolitan Washington Council of Governments: John Galli
Northern Virginia Regional Commission: Katherine K. Mull

I. NEED FOR A COMPREHENSIVE WATERSHED PLAN

Loudoun County is required to meet several state and regional water resource program goals and statutory requirements. These include the Virginia Pollution Discharge Elimination System (VPDES) requirements, the Municipal Separate Storm Sewer System (MS4) requirements, the Total Maximum Daily Load (TMDL) numeric caps and daily limits, Nutrient Load Caps for Wastewater Plants including offset requirements for new and expanded facilities (growth), Nutrient Removal Technology for Wastewater Plant requirements, Water Supply Planning and Drought Management plan requirements to be applied locally or regionally, Virginia Tributary Strategies under the Chesapeake Bay Agreement and the Virginia Scenic River requirements, among others. The state recommends that local watershed management plans be used as a planning tool by local governments to integrate the requirements of and help meet these requirements. Local watershed plans can also provide a more comprehensive local perspective to the state and regional efforts, as well as enhance these efforts.

The state also advises that it is “critical that both comprehensive plans and zoning proposals are reviewed in the watershed context” (excerpted from “Local Watershed Management Planning in Virginia – A Community Water Quality Approach” - DCR). Including watershed management planning in the comprehensive plan improves decision making, helps establish policies that will drive needed zoning amendments and will better connect and integrate water resource goals with other plan goals. It also helps to avoid costly mistakes and secondary impacts on land use decisions on water and habitat quality.

Loudoun County already has a number of important programs and activities related to watershed management, however, they can be disconnected efforts. Currently there is no countywide watershed plan or no watershed-based plan for managing the County’s water resources. The County currently manages its water resources through a variety of programs, but they can lack consistent coordination because they are administered through different departments and may be managed on a case-by-case or site-specific basis. Much like the County’s Capital Improvement Plan that brings together all of the county needs and priorities for capital improvements, a watershed plan will bring together, for the first time, all of the County’s needs and priorities for managing its water resources.

Thus, a watershed management plan will provide the Board of Supervisors with an integrated picture of Loudoun’s federal and state obligations for removing pollutants from Loudoun’s waters, combined with its priorities for protecting drinking water and preventing pollution of currently clean waters. Bringing all of this information together is essential, particularly as federal and state governments are increasing their mandates relating to water quality and water supply planning. The watershed plan will achieve several goals.

1. The plan will provide guidance on a county-wide basis for assessing the current condition of Loudoun’s waters; this assessment will identify waters in need of remediation or restoration and those in need of protection from becoming degraded.
2. The plan will prioritize the areas needing attention first and create a specific plan of action, based on a set of criteria to be established and a cost-benefit analysis. Actions may include:
 - a. specific on-the-ground stream restoration, stormwater management, or other infrastructure projects;
 - b. policy recommendations to achieve improved protection of Loudoun’s waters;
 - c. education, partnership and implementation projects that will improve citizen involvement in protecting Loudoun’s waters.
3. The plan will also identify sources of funding and create a strategy for funding watershed plan implementation.
4. Implementation of the plan will help create healthy water resources which are economically valuable. Water resource protection activities in agricultural, residential and urban areas will often

provide economic benefits to the landowner, along with the expected environmental benefits. Restoring stream buffers and protecting wetlands, floodplains and ground water recharge areas will reduce erosion and flooding, as well as maintain the quality and quantity of surface water and groundwater for drinking water supplies.

Further information about the content and nature of a watershed plan may be found in the appendix.

II. BACKGROUND OF SWMS

The Loudoun Strategic Watershed Management Solutions (SWMS) is a collaborative initiative to coordinate existing watershed efforts and define a shared vision for managing Loudoun County's watersheds. A stakeholder group was convened by Loudoun County's Department of Building and Development and facilitated by the University of Virginia's Institute for Environmental Negotiation (IEN). Funding for the project is provided by the National Fish and Wildlife Foundation, U.S. Environmental Protection Agency and Loudoun County.

The first step in the SWMS initiative was the formation of a stakeholder group called the "SWMS Team." During January and February 2006, IEN conducted 17 interviews with stakeholders representing different perspectives and interests about the development of a strategy for watershed planning in Loudoun County. These interviews were conducted in preparation for the first SWMS Team meeting to help shape the agenda, identify the kind of information and speakers needed at the first meeting, inventory activities and studies relevant to Loudoun's Watershed Planning effort, and identify issues and concerns that would need to be discussed. With this information, IEN developed a summary of its findings as well as an inventory of watershed activities, studies and sources of data. Drawing on recommendations from county staff and a number of stakeholders interviewed during the convening process, over 125 people who represent the interests of federal, state, regional, local government (County and towns), water supply, environmental and conservation groups, farming, business, development, and homeowner associations were invited to participate. Of those invited, approximately 65 (Number to be filled in by IEN at the end of the process) people participated in the four SWMS meetings, February 22-23, March 23-24, May 4, and June 14, 2006, in which decisions were made by consensus.

Through the SWMS meetings and after much deliberation, discussion and hard work the Team developed a number of key recommendations regarding the development of a Watershed Plan for Loudoun County. The key areas of agreement developed by the SWMS Team, with details about each area of agreement, are contained in the body of the Declaration of Cooperation (DOC).

The SWMS Team understands that the Watershed Planning process will need to use an adaptive management approach in which changes in the planning process are made as experience is gained and lessons learned. The agreements reached represent recommendations by the SWMS Team and it is recognized they may need to be modified to reflect revised timelines or available resources. The Team recommends the establishment of a Steering Committee that will support the adaptive management approach by providing a mechanism to collaboratively make changes to the recommendations contained in this Declaration of Cooperation.

SWMS DECLARATION OF COOPERATION

III. DOC BACKGROUND

This Declaration of Cooperation (DOC) was created in spring 2006 to serve as a compendium of the recommendations developed by the Loudoun Strategic Watershed Management Solutions (SWMS) Team over four meetings held in February to June 2006. The DOC represents significant thought and effort on the part of key stakeholders and it draws on the lessons learned from other Virginia counties that have already undertaken watershed planning. To reconcile conflicting viewpoints regarding the watershed planning process, Loudoun County staff envisioned the need to bring all key stakeholders together at the outset to create a shared consensus strategy and process for watershed planning that the County and stakeholders, together, could both support. This DOC, as a result, provides consensus parameters and guidance for the Watershed Planning process. In addition to consensus support for the collaborative approach outlined, as indicated by the signature page, some SWMS Team members have provided additional specific organizational commitments to the Watershed Planning process. (*Member signatures and commitments may be found in May Attachment III, p. 152.*)

KEY AREAS OF AGREEMENT

IV. GUIDING PRINCIPLES, VISION, VALUES AND GOALS

The following guiding principles, vision, values, and goals are recommended for a watershed plan for Loudoun County.

A. Principles – The following are principles recommended to guide the Watershed Management Planning process:

1. Create a realistic, achievable, implementable, balanced plan based on scientific data and models that are accepted by professional scientists in the field.
2. Create a flexible, dynamic and simple plan.
3. Address resources for implementation in the Watershed Planning process (monetary, in-kind and staff).
4. Consider economic development, jobs, housing (current and future), agriculture and conservation land needs in the creation of the plan.
5. Provide a plan based on consensus among the diverse views.
6. Provide a collaborative approach that allows stakeholders to work together to provide support and not duplicate individual efforts or projects.

B. Vision -- The following vision is recommended for Loudoun County's watershed plan:

Loudoun County is a place where natural and cultural resources offer beauty and function. Residents and visitors enjoy clean drinking water, recreate in swimmable and fishable waters and have access to diverse natural habitats. Loudoun's residents remain informed, energized and involved in maintaining and protecting healthy watersheds.

C. Values -- The following values are recommended to drive Loudoun County's Watershed Planning effort and to meet the needs of future generations:

1. Affordable and clean drinking water is always available for all Loudoun citizens.
2. Economic development activities are sensitive to watershed functions and health.
3. Nature and natural systems that are essential for stream health exist in all Loudoun watersheds.
4. Stewardship is recognized as a community responsibility and encouraged.

5. Recreational use of accessible water resources is available for all Loudoun citizens.
6. Healthy stream habitats and aquatic ecosystems are protected in all Loudoun streams.
7. Watershed planning and management is sensitive to the needs of agricultural production, including adequate water supplies, and the continued viability of the County's agricultural heritage as a means of food security and economic growth.
8. All Loudoun citizens remain engaged, informed and active in watershed planning, expressing the holistic concept of community responsibility.

D. Goals - The following broad goals are recommended for Loudoun County's Watershed Planning effort:

1. Protect public health and the environment.
2. Manage groundwater and surface water supply for current and future demands through private and public means.
3. Manage stormwater runoff in accordance with best management practices to protect stream channel processes and to preserve and restore water quality, stream health and groundwater recharge.
4. Protect, provide and restore diverse habitats and riparian buffers to provide healthy streams and public recreation opportunities.
5. Preserve the economic value of healthy watersheds by providing the natural functions of watersheds including wetlands and floodplains.
6. Engage citizens in watershed planning efforts, raise their awareness of Loudoun's watersheds and utilize citizen input in all watershed matters.
7. Effect cooperation and coordination between government and non-government watershed management efforts, data collection and resources within the watersheds.

V. Scope and Overall Process for Loudoun Watershed Planning

A. Two-Phased Approach - The SWMS Team recommends a two-phased approach to develop watershed plans. This phased approach will enable the County to immediately begin watershed planning using currently available data at a minimum cost. It will also allow the County to enhance the quality and sophistication of its plans over time as grant and other funding becomes available.

B. Phase I - Watershed management planning can proceed immediately using already acquired or existing data in a cost-effective manner. In this phase, three different types of plans are recommended in recognition of the different scope and scale of legal requirements and needs for watershed planning. All three should be developed in parallel, using currently existing data, beginning as soon as practicable.

1. **Tier I: Regional Plan:** Loudoun County watersheds extend into adjoining counties and are part of the larger Chesapeake Bay Watershed. It is recommended that a Regional Watershed Plan defined by the geographic boundaries of the watersheds be developed in cooperation with neighboring jurisdictions and regional authorities (e.g. Fairfax, Prince William and Fauquier Counties).
2. **Tier II: Major Watershed Plans:** Individual Watershed Management Plans that are defined by both the political boundaries of the County and watershed boundaries are recommended to be developed for the nine major watersheds in Loudoun County. These plans will involve working with stakeholders within those watersheds and providing communication and coordination regarding those plans at the countywide level. Individual watershed management plans, using existing data, should be developed for: (1) Sugarland Run and Broad Run, (2) Bull Run, (3) Beaverdam Creek and Lower Goose Creek (4) Upper Goose Creek, (5) Limestone Branch and Clarks Run, (6) Catoctin Creek, (7) Dutchman's Creek and Quarter Branch, (8) Piney Run, (9) Cub Run.

3. **Tier III: Sub-watershed Implementation Plans:** Preliminary sub-watershed implementation plans should be developed as supplements to each of the major watershed plans. The sub-watershed plans should be defined by both sub-watershed boundaries and characterization of the sub-watershed, selected from one of four possible characterizations defined by the Center for Watershed Protection. Each sub-watershed plan will provide implementation strategies to protect and restore the water quality and stream health in specific portions of the watershed. The order in which these supplemental plans are developed should be based on a prioritization system that selects the “most vulnerable” watersheds based on projected future impacts, with preference given to headwater sub-watersheds, drinking water sources and vulnerability potential.

4. **Modeling** - In Phase I the County will begin its watershed planning with least-cost predictive tools that do not require data beyond what is already available, that is simple and can be used in-house by Loudoun County staff. For predicting impacts of different management options on water quality and quantity, the County will consider basic spreadsheet models. For ground water quality and quantity, the models can offer predictive guidance for non-point source pollution and base flow. Questions regarding ground water availability are more difficult to quantify with ground water models and require a good conceptual understanding of the ground water flow system of the area being studied. In Phase I, the County will focus on developing a conceptual understanding of the groundwater flow system. (*For further guidance on modeling see May Attachment I, p.148.*)

C. Phase II - More sophisticated watershed management plans can be developed when County or other resources are available to collect and analyze additional data, based on established priorities. The data collection could focus on: (1) filling identified data gaps; (2) developing sophisticated predictive models to assess degradation impacts under varying loading and growth conditions (see Section IV below); (3) developing detailed sub-watershed implementation plans based on stream surveys; and (4) assessing progress in achieving planning goals based on water quality and stream health data collected under probability and trend monitoring approaches.

1. **Detailed Field Surveys** - Additional field surveys should be conducted in each sub-watershed to provide updated and more detailed data. These detailed field surveys, which could use the Center for Watershed Protection’s Rapid Stream Assessment Technique (RSAT), should be used to assess the pathways of runoff to streams, hydrological impacts of increased runoff, impacts on aquatic life and impacts on habitat impacts.

2. **Updated Implementation Plans** - These field survey results can be used to revise the preliminary sub-watershed implementation plans into more detailed, long-term implementation plans.

3. **Modeling** -- As the County progresses in its Watershed Management Planning effort, it may need more sophisticated predictive capability. When more data are gathered and become available, the County should consider more complex modeling methodologies to predict the impact of proposed management strategies on water quality, quantity and groundwater. More complex modeling may require additional funding and staffing capacity to accomplish. (*For further guidance on modeling see May Attachment I, p. 148.*)

D. Collaborative Governance Approach - A countywide Stakeholder Steering Committee will be established to provide policy and technical recommendations to the Board of Supervisors. The Stakeholder Steering Committee will guide implementation of this Declaration of Cooperation and ensure that an “adaptive management” approach will be used to make changes to the watershed planning process as experience is gained and lessons learned. Technical subcommittees and stakeholder committee should be established to provide input and guidance to the different types of watershed plans as needed. The SWMS Team also recommends establishing sub-watershed committees, if needed, with liaisons from the sub-watershed committees serving on the countywide Stakeholder Steering Committee. For the Stakeholder Steering Committee composition, organizational and communication structure, see May Attachment II, p. 150.

VI. Modeling

A. Decision-Making Tool - Computer modeling can be a helpful decision-making tool for the watershed planning process. It can be used to forecast the impact of different management strategies and therefore help in the selection of preferred management practices. The principal use envisioned for modeling in the Loudoun Watershed Planning process is to provide better information for decisions regarding water quality and water quantity (water supply planning) for both surface and ground water. *(For further guidance on modeling, see May Attachment I, p. 148.)*

1. **Surface Water Modeling** - For surface water quality and quantity, the models can offer predictive guidance for aquatic, drinking and recreational values of streams, specifically addressing at least sediment, nutrients and flow variation ("flashiness").
2. **Ground Water Modeling** - For ground water quality and quantity, the models can offer predictive guidance for non-point source pollution and base flow and will help develop a conceptual understanding of the groundwater system.
3. **Modeling Choices** - The Team recognizes that there are a wide range of models available that can vary greatly in cost, complexity, ease of application and ability to use in-house. In light of the above, the Team recommends that the County adopt a phased approach, as described above. In addition, the Team recommends that the modeling information be shared with the public in an accessible and understandable format, perhaps via the internet.

VII. Data Management and Protocols

A. Current Data Availability - Data are a major component of the watershed plan and there is a need for more attention and resources to be directed to data management and acquisition. The SWMS Team agrees that data and studies currently available are sufficient to provide the initial prioritization and snapshot assessment envisioned in Phase I of the proposed Scope. However, the SWMS Team recommends that the integrity of existing data be examined carefully before using it in any assessment as not all existing data are relevant to the assessment's purpose and some are old or perhaps faulty.

B. Central Database and Data Coordinator/ Office - A common database needs to be created to store water quality and quantity data from the many data collection entities working in the County. It is important that there be one data "coordinator" or management focal point that assembles data and establishes standard data collection and management protocols. The Team also recommends that the Steering Committee coordinate with the data coordinator or manager about the data needs identified by the Water Resources Technical Advisory Committee (WRTAC).

C. Monitoring - A combination of monitoring approaches is needed. One approach, suggested for use during Phase I of the Scope, is to use probabilistic-based (statistical) monitoring, applied countywide to provide baseline and snapshot data on watershed conditions for tracking progress. Another important approach, suggested for Phase II of the Scope, is to establish an ongoing system of permanent monitoring stations to monitor progress over time. Lastly, the SWMS Team recommends analyzing and reporting monitoring data on a periodic basis to ensure relevant data are being collected.

D. Stream Survey Data - Stream surveys will eventually be needed to develop data needed for detailed implementation plans to protect or restore priority stream segments identified in sub-watershed plans.

E. Data Collection Needs - It is important that a number of data and stream quality studies be incorporated into the assessment and watershed characterization effort. There is a need to decide upon a means to quickly gather and assess these existing data for use in the countywide assessment based on costs and the needs listed below. All new data collection should follow data collection protocols used by existing studies or state endorsed monitoring guidelines.

1. The County should consider making a commitment to inventory, map and monitor all water resources within the County's watersheds.

2. There is a need to establish a network of ongoing monitoring stations to supplement the countywide assessment and sub-watershed characterization and to assist with the evaluation and updating of the Watershed Plans over the years.
3. A flow gauging network should be established to help monitor in-stream flow because maintaining ecologically healthy streams is a concern for the future of Loudoun's waterways.
4. GIS data needs to be incorporated into the Watershed Management Planning effort. Surface and ground water quality and quantity data, wetlands data and other data as appropriate needs to be incorporated into the County GIS system and the County base maps.

F. Protocols – The Steering Committee or its subcommittees may adopt standards and protocols for data collection, analysis and reporting as the need arises.

VIII. Criteria for Prioritizing Problems and the Development of Sub-watershed Plans

A. Need for Criteria - The SWMS Team agreed that it is important to establish countywide prioritization criteria to guide the watershed planning effort. Specifically, prioritization criteria should help identify which sub-watershed plans are developed first and where implementation should first be initiated. It is understood that any plan should be implemented incrementally so that identified priority areas can be addressed first.

B. Criteria Guidelines - The Team identified the following list of criteria for priority determination. They are not ordered and not given weight.

- Rectify pre-existing and ineffective stormwater management controls.
- Protect drinking source water.
- Protect drinking water supply recharge areas.
- Fulfill state and federal regulation requirements.
- Protect waters in development-pressure areas or areas on the cusp of change for future build-out.
- Protect sensitive areas, such as headwaters, groundwater recharge areas and wetlands.
- Protect human health, particularly situations arising from possible septic or groundwater contamination.
- Take into account the different characterizations amongst sub-watersheds such as size, urban, rural, east, west, soil type, farming, drinking water supply shed, etc.
- Protect undeveloped or minimally developed sub-watersheds.
- Protect stream and road crossings.
- Implement projects that are the most efficient and offer the greatest potential for efficient reduction of nutrients.

IX. Funding

A. Funding Strategy - Funding is a critical part of the watershed planning process and the Team's recommendation for a funding strategy for the watershed planning process is below. In addition, the Team developed a list of potential sources of funding and principles to consider when seeking funding and other related information. This information may be found in the March 2006 SWMS meeting summary.

B. Dedicated Funding - The Team emphasizes the need for a dedicated source of funding for watershed planning from within the County. There are many potential benefits from watershed planning, such as being aware, proactive and prepared for new stormwater and nutrient cap regulations that are forthcoming. Creating a dedicated source of funding is important to ensure a successful watershed management planning effort to help meet new regulatory compliance requirements. The Fairfax County model of property tax allocation may provide a good model of watershed planning funding.

C. Grant Funding - Consider identifying sources of grant funding and corporate sponsorship for both a short term and long term source of funding for watershed planning, but especially in the short

term while a long term funding strategy is being created. The SWMS Team recognizes that significant staff time is required to administer grants.

D. Targeted Funding - Consider developing sources of funding for critical areas identified in the watershed plan. In addition, consider phases in watershed planning when looking for and dedicating sources of funding, as fewer financial resources may be needed for Phase I than Phase II.

E. Existing Funding - Evaluate, prioritize and possibly reallocate existing funding resources to determine if those resources could be applied to watershed planning.

F. Bay Act Funding--Consider the possibility of Loudoun County adopting the Chesapeake Bay Preservation Act (CBPA), which may be a potential source of funding. However, there could be regulatory implications that would require careful consideration.

G. In-kind--Consider significant financial contributions from in-kind sources such as citizen groups and the development community.

X. Stakeholder/ Citizen Involvement In the Watershed Planning Effort

A. Valuing Outcomes - The SWMS Team agreed that the success of watershed management planning in Loudoun County ultimately depends on people valuing the outcomes and contributing to the watershed plan implementation activities. The planning process should therefore involve people in the development of the watershed management plans to enhance the plan's value to citizens.

B. Engaging Citizens - Overall, the Team agreed that it is essential for the planning process to create ways that make it easy for Loudoun citizens to be informed, engaged and involved. Ideas might include having planning leaders attend meetings of different citizens' groups to reach citizens who might be difficult to reach otherwise, creating a website, conducting workshops, creating other forums to engage citizens and providing educational resources. It is important to "go beyond the choir" to engage citizens who might not otherwise be involved in the watershed management planning process and plan implementation. Outreach strategies also need to ensure that actual implementation strategies are accessible to people of all socio-economic levels.

C. Methods to Involve Stakeholders - To ensure stakeholder involvement throughout planning and implementation the Team recommends that the County adopt the following approaches:

1. Create an inventory of County organizations that are stakeholders in the watershed plan, i.e. organizations whose work or mission relates to the goals of the watershed plan, including conservation and environmental interests, historic preservation, development, business and agriculture. The SWMS participant list may be used as an initial document for this inventory.
2. Convene a countywide stakeholder steering committee with representation of diverse interests to help guide the countywide watershed management planning process as previously outlined in Section III.D. This committee should include liaisons from watershed groups as well as resource people and Loudoun County staff.
3. Seek guidance from the countywide stakeholder steering committee and remain flexible in determining, for each individual watershed planning effort, the form of citizen involvement that is most appropriate for that watershed (e.g. stakeholder committees, task forces, *ad hoc* groups, focus groups, workshops, forums, presentations to homeowner associations (HOAs), etc.).
4. Consider using existing stakeholder groups (e.g. Loudoun Watershed Watch, Northern Virginia Building Industry Association, Soil and Water Conservation District, etc.) as forums to enlist citizen engagement in the watershed management planning effort.
5. Involve schools and students, and use the schools as a forum to involve citizens in the planning process.
6. Recognize that parks and streamside trails are valued community resources that can be used to engage citizens in watershed management.
7. Consider using citizen volunteers to conduct some of the public education and outreach initiatives during the planning process to relieve the burden on County staff and to engage citizens in working with their neighbors.

XI. Education

A. Informed Citizenry - The Watershed Planning process should include a strong education component to create a more informed citizenry and to raise the awareness of citizens regarding watershed management needs. Further, the educational component should not be designed only for the plan but also for its implementation.

B. Strategies - The SWMS Team provides the following recommendations and guidelines for the County's outreach and education efforts.

1. Use existing education/outreach programs to avoid 'reinventing the wheel'.
2. It is important that education and outreach efforts stay independent of the political arena.
3. It is important during the planning process and as part of the plan itself to provide new septic owners with concrete skills and knowledge about monitoring and maintaining septic systems.
4. Use stream valley parks as a venue for education and outreach.
5. Use education and outreach efforts to raise awareness of existing regulations and the need for compliance.
6. It is important to involve the schools and students in the watershed management planning process.

XII. Policy and Regulations

A. Guidelines Regarding Policies and Regulations - The SWMS Team agreed on the following guidelines for addressing policies and regulations in the plan.

1. Measures to protect watershed health will be integrated into the County's planning and regulatory documents, including the Revised General Plan, Countywide Transportation Plan, Zoning Ordinance and the Facilities Standards Manual. County planning and regulatory documents should further the health and viability of County watersheds with particular attention to adequate water supplies, good water quality, healthy riparian corridors, erosion and sediment control and healthy stream flows.
2. The stormwater permitting program is still under development, and other programs will need to be used in conjunction with the stormwater program for addressing watershed problems.
3. Watershed planning strategies should be mindful of Virginia's Dillon Rule legal framework. Legal or other expert opinions should be obtained when possible to resolve or clarify differing interpretations, such as inconsistent interpretations of court rulings. For instance, it would be helpful to obtain clarification about alternative septic systems, as there are different approaches being taken in Clarke and Fauquier Counties.
4. The plan should incorporate and address the TMDL regulations and guidelines of the Virginia Department of Environmental Quality and Department of Conservation and Recreation.

B. Guidelines for Handling Issues -- The SWMS Team agreed on the following guidelines for how to handle issues that arise during the Watershed Management Planning process that impact policies and regulations. Some policy recommendations may apply to only one of the County's watersheds, while others may apply to the entire County.

1. Those policy recommendations that are applicable to the entire County should be lifted out of the individual watershed planning efforts and placed on a separate and faster track for consideration by the Board of Supervisors (BOS) so that the policy recommendations are not on hold while the remainder of that watershed plan is being finished.
2. Recommendations for policy changes should be fed into the General Plan as proposed amendments and, where applicable, as amendments to the Zoning Ordinance and Facilities Standards Manual (FSM).

XIII. Coordination of County Authorities

A. Coordination Strategies - Creating easy and efficient mechanisms for internal County coordination during the planning process and Plan implementation will be essential for success. Watershed planning is complex, involving multiple sources of data, multiple skill sets and multiple County departments. To accomplish this goal the SWMS Team recommends the following strategies.

- 1. Designate Watershed Manager/Coordinator** - The BOS should designate where leadership for watershed management coordination will reside, a critical factor for effective coordination.
 - a.** In the short-term, for the purposes of the watershed management planning effort, the SWMS Team recommends that the BOS designate either an existing department or the Environmental Coordinator as the lead for the watershed planning effort.
 - b.** For the long term, if needed to fulfill the requirements of the Chesapeake Bay Agreement, the SWMS Team urges the BOS to consider the creation of an Environmental Services Department in its long term planning for County staff.

XIV. Involvement of County Decision-Makers

A. BOS Representation - The SWMS Team recommends that the BOS and incorporated towns either (in order of preference) attend, have representation, or be regularly informed during the Watershed Planning process. Additionally, the Planning Commission (PC) should be given the opportunity to participate and at a minimum should be kept informed throughout the process.

B. Progress Reports - The SWMS Team recommends that presentations should be made to the following decision making bodies throughout the watershed management planning process, in consultation with one or two Supervisors as appropriate. Presentations should reflect high-level County Administration support by having the presentations opened by the County Administrator with technical information provided by the Environmental Coordinator or watershed planning program manager, as appropriate.

1. The Board of Supervisors
2. The Planning Commission
3. Incorporated towns (the Coalition of Loudoun Towns (COLT) may be an appropriate venue for these presentations and it may also be appropriate to provide presentations to joint meetings of town councils and planning commissions).

XV. Implementation of the Plan

A. Authority for Implementation - The Plan should specify and clarify who will implement each component of the plan, by when and who has designated authority for implementation.

B. Coordination with Towns - The County will coordinate watershed management with the towns.

C. Public-Private Partners - It is important for the County to work with and encourage its private sector partners to continue their ongoing activities in the watersheds throughout both the planning and implementation phases of the watershed management planning process.

D. Implementation Steering Committee - The SWMS team recommends that the countywide stakeholder steering committee be continued or a new one established after completion of the plan to ensure continuing citizen involvement in monitoring and assisting with implementation.

XVI. Implementation of the DOC

The SWMS Team recommends that, on conclusion of its work, this Declaration of Cooperation be presented to the BOS and incorporated towns for their review and approval. It should be presented to the Planning Commission and committees listed above (WRTAC, COLT) for their information.

XVII. Evaluation of the Watershed Plan

The SWMS Team agreed that the watershed management plans should include a strategy for revisiting and updating the plans over time to ensure that they remain living documents. These plan reviews should be conducted by the County in collaboration with the countywide stakeholder steering

committee. An important component for assessing progress in achieving planning goals will be the water quality and stream health data collected under probability and trend monitoring approaches.

XVIII. Issues requiring further discussion

ARE THERE ANY ISSUES REQUIRING FURTHER DISCUSSION???

MAY ATTACHMENT I

MODELING

Further Information And Guidance

MODELING FOR WATERSHED PLANNING: PHASE I

1. *Water Quality* - For predicting impacts of different management options on water quality, consider selecting either a basic spreadsheet (such as STEPL) or the slightly more sophisticated Generalized Watershed Loading Function (GWLf) model, both of which will address nitrogen, phosphorous and sediment. Experience in other localities has shown it is important that whichever model the County selects, the same model be applied across the entire County to ensure consistency of analysis and predictive value.
2. *Water Quantity* - For predicting impacts of different management options on water quantity, consider selecting a spreadsheet model to do "water balance accounting." It is understood that this would allow the County to make only rough predictive calculations of impacts on water quantity at an early phase of watershed planning. However, as more data is gathered over time, the County may be able to graduate to a more refined model to make more refined calculations.
3. *Ground Water* - For ground water quality and quantity, the models can offer predictive guidance for non-point source pollution and base flow. For predicting impacts of different management options on groundwater, it is recommended that existing data are compiled and analyzed, as much data is already available but has not been analyzed. It is also important that existing data and analyses already undertaken by agencies such as the USGS and DEQ be obtained by the County to avoid duplication of effort. The USGS has agreed to provide input and assistance in the County's modeling and data synchronization efforts. Questions regarding ground water availability are more difficult to quantify with ground water models and require a good conceptual understanding of the groundwater flow system of the area being studied. In Phase I, the County will focus on developing a conceptual understanding of the groundwater flow system.
4. *Floodplains* - For predicting impacts of different management options on floodplains, consider obtaining existing modeling from FEMA to incorporate into the plan.

MODELING FOR WATERSHED PLANNING: PHASE II

1. *Water Quality and Quantity* - For more sophisticated predictions of impacts of different management options on both water quality and quantity, the County should first inventory data available to decide which of the more sophisticated models would be most feasible to use. The current choices are either EPA's dynamic rainfall-runoff simulation model (SWMM) or the Hydrologic Simulation Program-Fortran model (HSPF). Both models are appropriate for Loudoun's mix of urban/rural land use and could be used to predict nutrients, sediments, as well as flow variation and base flow. The HSPF model already has been used to develop two TMDLs for fecal coliform in Loudoun County and so could be adapted for these broader predictive purposes as well as expanded to provide coverage for the entire County via extrapolation. As a result, the Team suggests that the HSPF might be preferable to the SWMM model, but the County should make this determination when the time is appropriate. The Team also suggests the County consider using a flexible, selective approach in which more sophisticated models would be used for more complex, difficult watersheds.
2. *Ground Water* - For more sophisticated predictions of impacts of different management options on ground water, the County needs to establish long-term monitoring wells and gauges. When more data becomes available, including geological data, the County could begin to conceptualize its ground water system. The Team recognizes that the movement and availability of ground water is a difficult science and that it will be at least five years before a predictive model for ground water can

be developed. It is therefore suggested that other tools for decision making be developed in the near-term. Specifically, the Team recommends that the County consider selecting either the MOD-FLOW or SUTRA 3-D models for use as early as possible in Phase II. Either of these tools can be used to identify: (a) areas at risk of low base flow; and (b) areas important for ground water recharge.

MODELING FOR WATERSHED PLANNING: PHASE III

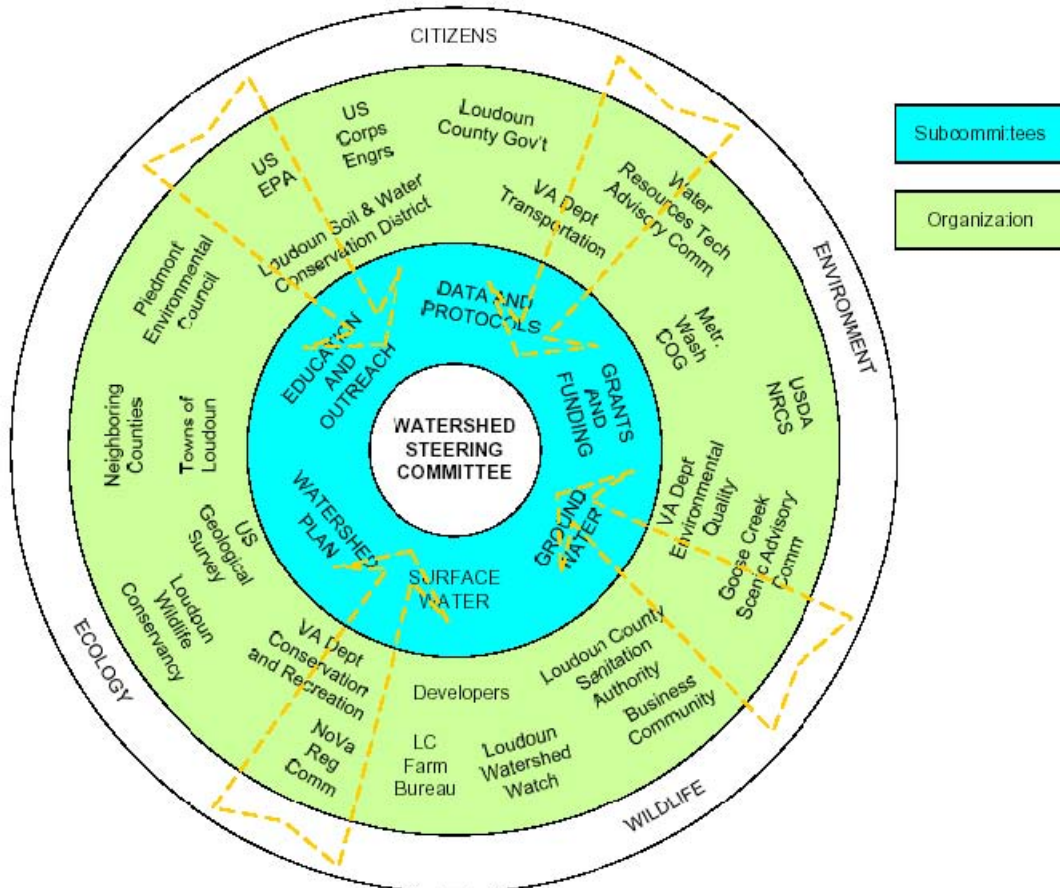
For groundwater, the Team also recommends a later Phase III modeling effort in which the County would eventually develop and use a ground water model that can provide better predictive capability for the availability of groundwater.

MAY ATTACHMENT II

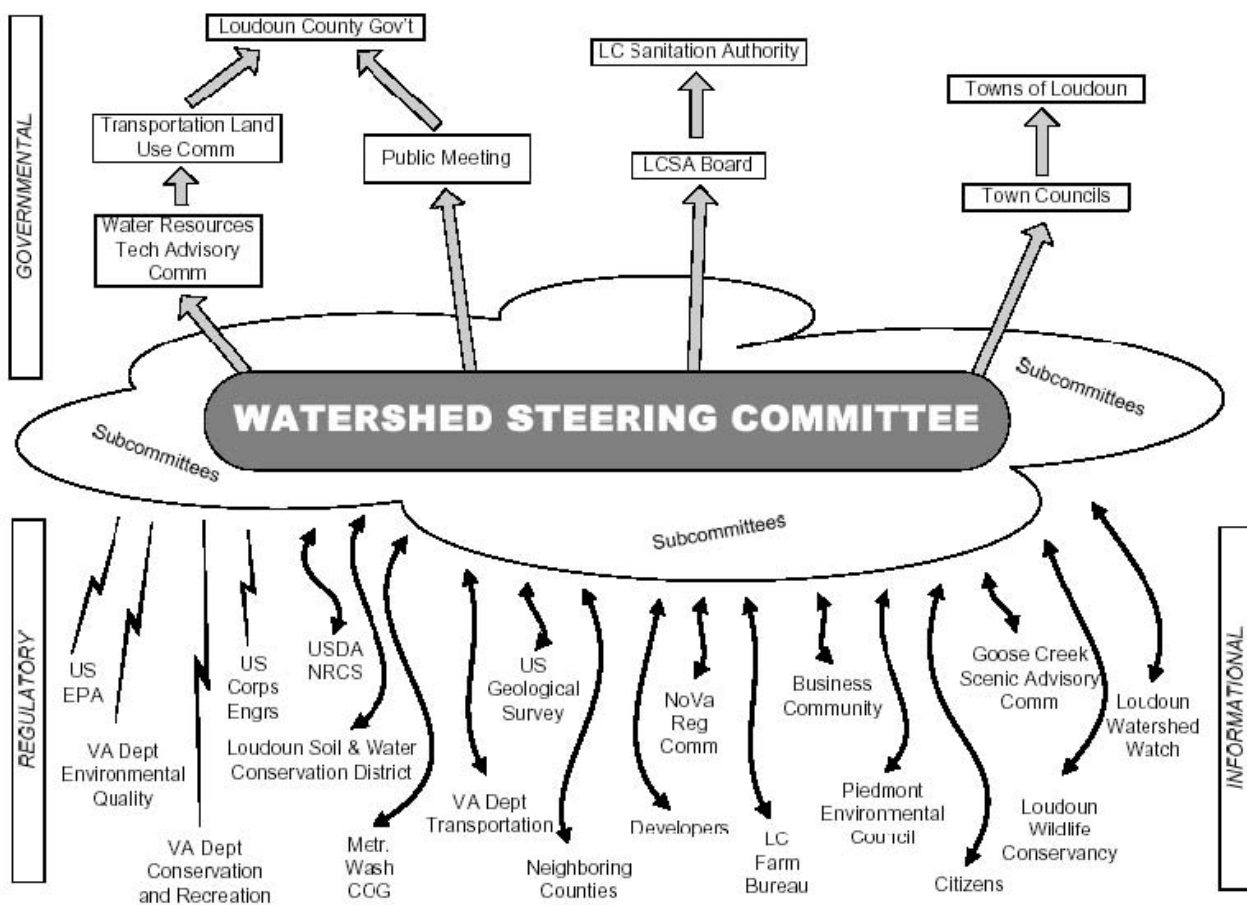
STAKEHOLDER STEERING COMMITTEE

Proposed Composition

and Organizational and Communication Structures



Revised May 18, 2006



Revised May 16, 2006

MAY ATTACHMENT III

Signature Pages and Specific Commitments

SIGNATURE PAGES WILL BE INSERTED HERE

Individual Commitments by Members of the SWMS Team

USDA-Natural Resources Conservation Service will provide a staff of one to support the efforts and programs of the local Soil and Water Conservation District and to provide direct technical assistance to the farmers and other landowners in Loudoun County. We administer or help other USDA agencies administer programs created under the "Farm Bill" that provide technical and/or financial support to landowners in Loudoun County.

NAME, TITLE

Submitted by Larry Wilkinson, USDA-NRCS

Date

The Goose Creek Association will provide:

- Baseline stream monitoring information, both biological and chemical, for current locations on the Goose Creek and Little River. Additional sites may be added.
- Education Outreach Programs, independently or in conjunction with other conservation organizations such as the Piedmont Environmental Council or Loudoun Watershed Watch, to inform citizens of Best Management Practices to maintain the health of the watershed.

NAME, TITLE

Date

Submitted by Nancy West, Goose Creek Association

The **Piedmont Environmental Council (PEC)** commits to provide watershed technical support and data; support for citizen/public involvement; education, funding, policy and regulation support.

- Watershed technical support and data
 - o Provide GIS data & maps as well as entire body of recommendations to Loudoun County from Goose Creek Assessment work already completed. Provide similar information resulting from the Leesburg project.
 - o Provide GIS data to Loudoun County regarding conservation easements and easement monitoring.
- Water Quality
 - o Continue to work on obtaining conservation easements in the entire Goose Creek watershed, building on the results & recommendations in the reports.
 - o Focus on obtaining landowner commitments to plant riparian buffers & involve Loudoun County Soil & Water Conservation District & NRCS.
 - o Encourage landowners to commit to language in easement documents to maintain riparian buffers in the Goose Creek watershed, particularly in those sub-watersheds deemed as Rurally Impacted, and High Quality.
 - o Work with landowners to identify important natural resources on their property and how the landowners can meet their needs while preserving the resources.
 - o Continue to work with Parks & Recreation Department to help fill in the blanks on streamside trail connections that they are working to complete.
- Support for Citizen/Public Involvement
 - o Help spread the word and work with the grassroots to encourage watershed planning participation. Recruit key volunteers to help lead the effort.
 - o Utilize a “neighborhood party” outreach model to work with residents to encourage critical actions to improve watershed water quality.
 - o Provide SWMS team interface to County FSMPRC (for the duration of my service).
- Education
 - o Help to train volunteers in the Center for Watershed Protection methodologies for stream assessment and associated field work.
 - o Continue to encourage schools participation by following the high school involvement model started in Purcellville.
 - o Continue to participate in LWW and its Family Stream Day activity to inform younger students and their families.
- Funding
 - o Seek grant funding to help support our continued watershed work.
- Policy and Regulation Support
 - o Provide SWMS team interface to County FSMPRC (for the duration of my service).
 - o Advocate for LID practices and policies which would support the watershed management goals.

NAME, TITLE

Date

Submitted by Gem Bingol, Piedmont Environmental Council

The **Loudoun Wildlife Conservancy (LWC)**, the largest non-affiliated, all-volunteer conservation organization in Loudoun County, commits to support SWMS in the following areas:

- A. Data, study or resource: LWC volunteers will collect data on streams and sites throughout the County. Data includes: number and types of benthic macro-invertebrates, ambient water and air temperatures, PH, Habitat assessments, watershed land use and human impacts. Data will be made available to SWMS members through cooperation with LWW.
- B. Education, outreach or project: LWC will: a. Provide knowledgeable volunteers to assist schools, scout groups or other organizations, for education on water quality and stream habitat/assessment issues; b. Provide programs and training to volunteers and interested groups on stream monitoring techniques; c. Develop and publish articles regarding stream quality in our quarterly newsletter, The Habitat Herald; d. Participate in stream/watershed education efforts/initiatives of other groups/agencies (LWW, LSWCD, LCSA, etc.) e. Provide volunteers and other resources for riparian restoration projects. f. Identify trends in water quality and stream health to educate the general public. g. Compile and analyze collected data and provide summary information to LWC monitors and the general public. h. Provide educational materials on water quality, stream health, pollution prevention and environmental stewardship.
- C. Land Use Planning and Policy: LWC will provide advice/input to County BOS, Planning Commission, staff, and Landowners regarding the importance of, and need for, protecting stream corridors and floodplains for the benefits of wildlife and human passive recreation.
- D. Stream Monitoring: LWC will continue to provide a cadre of trained volunteers for stream monitoring in accordance with a modified EPA Rapid Bioassessment II, or other approved, methodology. LWC also commits to expanding its program to include other parameters and locations when time, training and funding permit. Our commitment includes: a. Recruitment and training of team leaders and citizen volunteers. b. Providing and maintaining stream quality equipment and supplies. c. Collecting data that includes physical, chemical, biological, habitat parameters and land use activities. d. Develop, implement and maintain an approved quality assurance program.

Nicole Hamilton, President, LWC

Date

Philip Daley, LWC's SWMS Rep

Date

Loudoun Watershed Watch (LWW) fully supports the Loudoun Strategic Watershed Management Solutions (SWMS) initiative to coordinate existing watershed planning efforts and affect a shared vision for watershed activities in Loudoun County. Historically, Loudoun County has done little watershed management planning. All Loudoun streams are impacted to some degree by human activities. Several are degraded to the degree that they do not meet either Federal Clean Water Act or Virginia Water Quality Standards for recreational use and aquatic life. Portions of streams that have been designated as impaired by the state include: Catoctin Creek and its tributaries, Goose Creek and its tributaries, Little River, Limestone Branch, Piney Run, Broad Run, and Sugarland Run.

State water pollution reports (i.e., DEQ's Integrated Report and Total Maximum Daily Load reports) document that nonpoint pollution is the major cause of fecal bacteria pollution in Loudoun streams. Past initiatives to encourage landowners to voluntarily install BMPs, such as fencing-off streams to livestock, have had limited success. All major Loudoun watersheds are impacted by pollution from agricultural activities. In addition, TMDL reports for Goose Creek and Little River document that sediment from stream bank erosion and wash off from pastureland are a major cause of stream degradation. DEQ estimates that 68,000 tons of sediment is flowing into the Potomac River from Goose Creek every year. Further, DEQ estimates that a 6% increase in developed land will increase sediment loads from stream bank erosion another 36%.

Unfortunately, Loudoun County water resource programs are divided between a variety of County authorities, and there is little community and citizen investment. There are no countywide or watershed based plans to manage, protect, or restore degraded water resources. Rather programs are administered on a case-by-case, site-specific basis. Resources are used inefficiently, results are ineffective, and damages to private property are increasing. The SWMS initiative provides the opportunity to engage in countywide planning that will improve water quality and public health, provide economic opportunities for agriculture and tourism, protect the health of streams for aquatic life and riparian buffers for wildlife, promote the conservation of natural resources, and create additional recreational opportunities for all citizens. These benefits can be achieved in a cost-effective manner through phasing watershed planning activities, establishing priorities for protection and restoration projects, and better integrating water resource protection with county policies, codes, and ordinances.

Loudoun Watershed Watch commits to supporting the SWMS initiative in four ways:

1. **SWMS Initiative** - LWW is one of many stakeholders in Loudoun that support watershed management planning and the Total Maximum Daily Load (TMDL) Implementation Planning initiatives. These stakeholders only lack a County-sanctioned authority that can organize and lead a collaborative County-Stakeholder initiative to compile and analyze water resource data and develop watershed management plans that address the objectives of the larger Potomac River and Chesapeake Bay watersheds initiatives. LWW also recognizes that sub-watersheds provide homogeneous management areas and are probably the best units to use to develop effective management plans. Small sub-watersheds will also facilitate timely monitoring, mapping, and other management tasks.
 - a. A representative of LWW will continue to work with SWMS, the Loudoun County, and other authority with responsibilities for implementing a workable watershed management planning process and developing watershed management plans.
 - b. LWW will continue to provide technical and management advice and support for the initiative as needed.
 - c. LWW will continue to encourage and organize citizen involvement in the SWMS initiative by promoting citizen participation, contributing volunteer resources, and encouraging citizen support for water resource conservation policies and practices.
2. **Stream Monitoring** - Effective watershed management planning depends upon good water resource and water quality data collected from both probabilistic and trend stations. These data

need to be collected using sampling protocols that will ensure that future monitoring data will be fully compatible with existing baseline data and state data. Data collected under these guidelines can provide timely feedback on how stream habitats and biological communities are responding to the management practices outlined in the watershed plans.

- a. LWW will provide technical expertise and collaborate to develop and maintain stream monitoring and habitat assessment protocols that meet the SWMS initiative goals.
- b. LWW will provide technical expertise, and will collaborate to develop a comprehensive surface water monitoring plan that includes both probabilistic and trend monitoring.
- c. LWW will continue to work in partnership with Loudoun Wildlife Conservancy to monitor the quality and health of streams.
- d. LWW will continue to make public its water quality monitoring data, analyses, and assessment reports on Loudoun streams.

3. **Community Outreach and Education** - Successful watershed management planning in Loudoun County also depends on people valuing clean water and healthy streams, and contributing to the watershed plan implementation activities needed to protect and restore the County's water resources. LWW supports the SWMS planning goals that involve citizens and other stakeholders in the development of the Watershed Management Plans in order to enhance the plan's value to citizens.

- a. LWW will collaborate with County authorities and other stakeholder groups to continue to develop educational materials on the conservation of water resources in Loudoun County.
- b. LWW will collaborate with County authorities and other stakeholder groups to continue to organize community outreach and stewardship projects to engage citizens and communities in water quality protection and restoration activities.
- c. LWW will continue to provide a website that offers educational materials on water resources protection and restoration to Loudoun County citizens.

4. **Program Evaluation and Adaptive Management** - The effectiveness of a watershed management planning initiative for Loudoun County will be measured by the degree to which good quality streams are protected and streams of marginal quality are restored. Policy and management approaches and strategies to accomplish this will need to adapt to changing conditions over time and to problems identified in periodic assessments of accomplishments.
 - a. LWW will collaborate with County authorities and other stakeholder groups to collect and analyze data that can be used to assess progress under the watershed management planning initiative to protect and restore our water resources.
 - b. LWW will work with the Steering Committee and provide management expertise to County authorities to make adaptations in the SWMS process and watershed plan as needed.

NAME, TITLE

Date

Submitted by Darrell Schwalm, Loudoun Watershed Watch

Virginia Department of Environmental Quality -- Northern Virginia Regional Office

The Virginia Department of Environmental Quality (DEQ) supports the development of a strategic plan for watershed management as envisioned by the Loudoun County Strategy for Watershed Management Solutions (SWMS) participants. The Department recognizes the future challenges that project stakeholders face in the development and implementation of a watershed management plan that works to improve regional water quality in Loudoun County.

In the spirit of collaboration and cooperation, the Northern Virginia Regional Office of the DEQ offers to support the project in the following manner, granted that Commonwealth resources allow for such commitments:

- Provide available water quality data to the team as may be needed in support of defining baseline ambient stream conditions;
- Participate as needed or requested in future meetings of the partnership;
- Conduct and electronically publish Total Maximum Daily Load studies initiated for streams to attain water quality standards;
- Assist in educational outreach efforts designed to engage members of the community to meet project goals and to market the program;
- Offer any other appropriate technical assistance in support of the project.

Jeffery A. Steers, Date Regional Director Virginia DEQ Northern Regional Office

The **Audubon Naturalist Society** will continue to support volunteer water quality monitoring activities in Loudoun County through monitor training, monitoring equipment, storage, and technical guidance. We will also participate in local watershed education activities such as stream walks and slide presentations.

NAME, TITLE Date

Submitted by Cliff Fairweather

The **Goose Creek Scenic River Advisory Committee** (GCSRAC) fully supports the Loudoun Strategic Watershed Management Solutions (SWMS) initiative to coordinate the many diverse watershed stakeholders in Loudoun County in order to effect a coordinated County-wide program to protect this watershed and insure its future life and potability.

To that end the Goose Creek Scenic River Advisory Committee will commit to offering its support to establishing a meaningful county program that protects and enhances the watershed.

In our work, the Goose Creek Scenic River Advisory Committee will continue to work with riparian landowners along Goose Creek to establish riparian setbacks and other water-cleansing methods to protect the water.

Where possible we will also commit to educating the public in good water husbandry.

We will also continue to work with SWMS as necessary and support testimony before the County Planning Commission and/or County Board of Supervisors in order to create a meaningful new county ordinance to protect Loudoun's waters for the future.

NAME, TITLE

Date

Submitted by Helen Casey

LOUDOUN COUNTY STRATEGY FOR WATERSHED MANAGEMENT SOLUTIONS (SWMS)

Meeting Summary

June 14, 2006

Best Western Hotel, Leesburg, Virginia

Project Overview

The Strategic Watershed Management Solutions (SWMS) project is designed to be an iterative, adaptive and collaborative effort to develop a countywide plan to manage water resources in Loudoun County on a watershed basis. The consensus building effort involves various groups including government agencies (county, state and federal), active community and citizen groups, development and commercial groups, agricultural interests and non-governmental organizations. The strategic plan will be used to develop a subsequent watershed planning effort.

Welcome and Updates

Thirty-eight SWMS Team members gathered for the fourth and final meeting of the Loudoun Strategic Watershed Management Solutions (SWMS) Stakeholder Team. Christine Gyovai, Tanya Denckla Cobb and Jason Espie, facilitators from the University of Virginia Institute for Environmental Negotiation (IEN), welcomed participants and provided an overview of the process. The main goals for the final meeting were to review the latest revisions to the Declaration of Cooperation (DOC), chart the next phases of the process and celebrate and sign the DOC. The group reviewed the consensus decision making process to reaffirm that the Declaration of Cooperation is a consensus based document. Then, meeting participants review the May meeting summary and a variety of progress updates were given, which are below.

- *Outreach:* Bruce McGranahan informed the Team that individual meetings are being arranged in close coordination with Supervisor Kurtz to update all of the Board of Supervisors and provide them with a full set of documents and information from the SWMS process. The Board of Supervisors (BOS) has received updates about the process. In addition, similar presentations are being arranged for towns as well as to the Northern Virginia Building Industry Association (NVBIA). The SWMS Team indicated support for conducting extensive outreach to the towns to inform them of the process, with the hopes they will be able to support the SWMS concepts and ideas and help coordinate and support the watershed planning effort as a whole. In addition, Kelly Baty gave a presentation to the Fairfax Water Authority at the Interstate Commission on the Potomac River Basin (ICPRB) in Rockville, Maryland on June 1. Meeting participants included the Maryland Department of Environmental Protection, ICPRB, EPA, VA DEQ and VA DCR, among others. The group was very enthusiastic about Loudoun County's effort to manage stormwater through the watershed planning process and looks forward to potential future partnerships.
- *Evaluations:* Ms. Denckla Cobb introduced evaluation forms for the process to the group, stating that they were important for both the facilitators and project funders for improving similar processes in the future and indicated that they would be collected and then tabulated after the meeting.

Review of the Declaration of Cooperation

The group then reviewed the most recent version of the Declaration of Cooperation (DOC), starting with the Executive Summary section. The facilitators stressed that this was the last time the SWMS Team would have an opportunity to review the language contained in the DOC in person. The substantive changes incorporated at the meeting would be the final version to which the signatory pages and commitment statements would be appended. There were some general discussion points prior to the

group reviewing specific changes or language in the DOC. A number of main points of discussion or changes regarding the DOC are elaborated below. All changes, substantive and grammatical, made by the group are reflected in the final DOC:

- The SWMS Team discussed the working in the DOC regarding whether the BOS would “appoint” or “recognize” the Steering Committee (SC) related to the second point in the Executive Summary. There was acknowledgement that both possibilities have advantages or drawbacks, specifically that an appointed steering committee may have more access to County staff and resources. However, the majority of meeting participants felt that the several stakeholders who would be serving on the SC are already working together on watershed planning in Loudoun County and it made more sense to formally establish the Steering Committee and request the BOS “recognize” the SC was made and approved by consensus vote and these changes are reflected in the final DOC. Others noted that the SC is, or should be, a broadly representative and balance group. Participants noted that SC should not be constituted only with government entities as there needs to be greater involvement of citizens and landowners in the County. Some noted that the SC should not be self-appointed and careful attention needs to be given to how it is formed (the issue of SC composition and formation was discussed in greater length later in the meeting, see below for further detail).
- There was considerable discussion regarding language in the Summary of the DOC which referred to zoning and land use. In particular, the removal of the italicized portions of this sentence was discussed at length, “Including watershed management planning in the comprehensive plan improves decision making, ~~helps establish policies that will drive needed zoning amendments and will better connect and integrate water resource goals with other plan goals.~~” There was consensus vote that this portion of the sentence should be removed but that the meeting summary should reflect that there are a host of land use tools beyond zoning that are important for watershed planning and management. The last part of the sentence was struck because some participants felt that the DOC was not an appropriate place for land use language regarding watershed planning.
- Some participants expressed concern about the feasibility of a cost-benefit analysis that was in Section II of the DOC. Participants noted that while this is important it may not be feasible. SWMS Team members agreed to recommend that the SC conduct the cost-benefit analysis during the watershed planning process as part of its prioritization efforts based on information that Fairfax County has successfully used cost-benefit analysis in their watershed planning efforts.
- In Section V, 3.1 “Tier III: Sub-watershed Implementation Plans,” the group agreed to remove specific reference to the Center for Watershed Protection to allow the next phase of watershed planning more flexibility to select a variety of protocols developed by more than one organization. In addition, in the same section, there was some discussion over the wording “*based on projected future impacts.*” After discussion there was agreement that the wording “*with preference given the headwater sub-watersheds, drinking water sources and vulnerability potential*” would sufficiently encompass how vulnerable areas should be prioritized and it should replace the above phrase.
- Bill Hatzler of Toll Brothers shared an article with the group that makes the case that density does not necessarily degrade water quality. Otto Guttenson of EPZ also noted that EPA has a number of documents and literature that address density and water quality and how these goals can both be accomplished together with success.
- In Section VIII, A. “Need for Criteria,” some concerns were raised on what happens if two listed priorities conflict. Other Team members explained that this was simply a list of priorities identified and the SC would be charged with giving priority weight and making decision regarding this list of suggested criteria. Additionally, the group decided to strike one criterion regarding road and stream crossings as the Team agreed it was not appropriate for inclusion in the priority list.

- In Section IX, B. “Dedicated Funding” the group agreed to strike the specific reference to the Fairfax model of dedicated funding, which read *“The Fairfax County model of property tax allocation may provide a good model of watershed planning funding.”*
- For Doc Sections XIV and XV there was discussion about how the towns could best be involved in the watershed planning effort. One participant asked if the Coalition of Loudoun Towns (COLT) was still active and the response was that it still is. Amendments were made to both of these sections in the DOC to emphasize greater involvement and cooperation with the towns in the future watershed planning and implementation activities. The group noted that outreach and involvement efforts with COLT were part of the next phase of watershed planning.
- In Section XV, D. “Implementation Steering Committee,” there was discussion around the relationship between the watershed planning Steering Committee and the implementation committee that would oversee the implementation of the watershed plan and continue the work of the Steering Committee. The group agreed to amend the language in the DOC to reflect that the implementation committee may be made up of members from the Steering Committee and it would transition from the SC but that it could include new members as needed.
- The group agreed to strike the Section XVIII. “Issues Requiring Further Discussion” as no team member requested that an item be included in this section.

Inventory of Watershed Activities

Jason Espie of IEN provided an update of the Inventory and Analysis of Watershed Activities database which will be included in the SWMS Final Report. Several organization and individuals had been contacted regarding specific watershed activities and requested to provide some form of metric or measurable explanation for their activity. An excel spreadsheet was handed out at the meeting which contained some of the feedback already received from various groups. Not every activity had a measurable result or impact on the watershed so not all activities were included in the analysis. Attendees were invited to submit final changes by the end of the week of June 14th for final inclusion in the report that would be generated from this inventory excel sheet. If participants needed the original excel spreadsheet again, Mr. Espie offered to email it to them.

Signatory Pages and Commitments

Christine Gyovai provided a brief explanation of the signatory pages and the Organization Commitment section of the DOC, noting that there may have been some confusion about what was expected. She acknowledged that there were many different organizations involved in the process and that not everyone would be able to make the same commitments or provide signatory pages. It was understood that maximum flexibility was needed with regards to signatory pages and commitment statements. Nevertheless, participants were encouraged to sign a signatory page individually or on behalf of their organization; the signatory page supports the basic principles outlined in the Executive Summary (and may be found at the end of the DOC in the final report which will be distributed electronically). These signatory pages could include individual amendments, clauses or an optional paragraph to clarify whether the signature is for an individual or organization. If an organization had also prepared a specific commitment statement for the DOC then this was also enthusiastically welcomed (these may be found in the final report in the DOC).

Steering Committee Composition Discussion and Recommendations

The second goal of this final SWMS Team meeting was to outline the next steps and specifically the composition and structure of the Steering Committee as recommended by the DOC. The discussions and general agreement from previous SWMS meetings was that the Steering Committee would commence its work in September 2006 and serving on it would potentially entail a 9 to 18 month commitment. An Interim Bridge Committee of volunteers from the current SWMS Team will help carry the momentum and prepare efforts for the formation and convening of the Steering Committee in September. This Interim Bridge Committee was formed at a later point in the meeting. The facilitators asked participants

to review the draft organizational and communications charts for the Steering Committee in the DOC created by David Ward from the results of a small working group at the May meeting. A few word changes and narrative explanation for the charts were discussed and minor changes and explanations were agreed upon and they have been incorporated into the DOC. These charts reflect the versions of the Steering Committee Organizational and Communications concept diagrams that the SWMS Team recommends by consensus.

The facilitators handed out a list of groups that have been identified through the SWMS process as potential interests that need to be represented on the Steering Committee. The group then discussed other more detailed elements of the Steering Committee such as its composition, size and potential method of decision making and the following points reflect the Team's ideas and recommendations for the future Steering Committee (SC):

- **High Interest:** The SWMS Team should be cautious about identifying a list of specific interest groups that should be represented on the SC without first determining whether these groups want to participate in the watershed planning process. As committees generally lose member over time, if there are lesser degrees of interest or commitment stated by a group initially, it may not be appropriate for them to serve on the Steering Committee. Interest level, role and relationship should be taken into consideration in developing the SC.
- **Size and Use of Subcommittees:** The SWMS Team discussed at length the potential size of the SC. Participants noted that having 30-35 people or organizations may be too large of a group; even with 20-25 persons, meeting can become unwieldy by the group indicated that this smaller number may be a more manageable size for the SC. A recommendation was made to keep the number of SC members as small as possible, hopefully 20-25 people, but no consensus was reached as it was felt that a final decision would need to be reached by the Interim Bridge Committee. Some noted that SWMS Team had far more members and that it was able to manage discussions well. However, the group noted that additional representation may be accomplished through participation in subcommittees that meet separately; and thus, the SC could expand its inclusion of other interests and technical expertise. Ultimately, the SC itself will need to decide whether its membership should be expanded.
- **Technical of Advisory Members:** It was agreed that it might be neither efficient nor necessary for some of the larger state or federal agencies, such as DEQ, to serve as regular SC members. The group suggested that there could be designated "advisory" or "resource" persons that could participate or present technical expertise on a regular basis. In this case it may not be as important to have *all* potential interests serve on the SC if some could be included and designated to be "technical" or "advisory" role in support of the Steering Committee.
- **Decision Making- Majority Voting vs. Consensus:** Meeting participants acknowledged that the number and composition of SC members is related to how it makes decisions. If decision making is by majority voting then more attention is needed for SC composition to obtain a strong balance of interests to avoid a one-sided committee. If the decisions are made by consensus – in the same manner as the SWMS Team has operated – where one member can block a vote and everyone's voice is equal, then there could be more flexibility in creating the composition of the Steering Committee. There was general agreement that the SWMS Team favored consensus decision making and the Team recommends this for the SC but noted that the SC should be allowed to establish its own methods of decision making protocols.
- **Balance Participation is Critical:** The issue of ensuring that balanced interests serve on the SC was raised many times by meeting participants. Numerous SWMS participants noted that more citizens, agricultural groups and development interests need to be involved in the next phase of watershed planning. For example, several people in the business community

- and homeowners associations were invited to participate in the SWMS process but could not attend day meetings. The group noted that it is generally easier for local or state government persons to participate in full day meetings that relate to their job responsibilities. Participants note that there may be creative ways to hold Steering Committee meetings at flexible or different meeting times, or to alternate groups that meet separately and report back to the larger group. It was noted that different interest groups are available to meet at different times and the SC should take this into consideration when determining meeting times.
- **Public Involvement Example - Frederick, Maryland:** Ed Gorski of PEC described one example of a watershed public involvement process that had two committees that met separately. One was a citizen stakeholder committee of just citizens that was constituted for a given sub-watershed. These groups would band or disband as their work was completed. The second was an ongoing technical advisory committee made up of state, federal and local government staff that was retained throughout all twelve of the sub-watershed plans. The technical group provided support and facilitation for the citizen groups as they formed to create specific sub-watershed plans and recommendations.
 - **Public Involvement Example - Fairfax County:** Matt Meyers of Fairfax County explained their process involves having Citizen Steering Committees or Citizen Advisory Groups for fifteen watershed planning efforts and the county then provides technical support through staff, engineering consultants and facilitation consultants. There is a citizens group for each sub-watershed plan while the county staff is consistent for each citizen group. The county staff will eventually compile the fifteen plans to consolidate countywide policies and programs.
 - **Suggestion for a Two-Tiered Involvement Approach:** The group noted that the existing SWMS full contact list (which includes everyone who was contacted and invited to participate in the SWMS process) is a good and fairly comprehensive starter list for potential SC member composition. Participants state that there could be two tiers of SC involvement, one tier that participates in SC meetings and on that is consistently informed or given presentations by SC members. This could be achieved through an updated website, list serve, individual presentations or through occasional forums to inform, invite input and comment on SC progress.
 - **Composition:** This is a list a presented by IEN and discussed and added to by the SWMS Team:
 - o Support was voiced for considering the existing full SWMS contact list (which includes many of the groups listed below).
 - o County Environmental Program Coordinator
 - o Loudoun County Government
 - At least one member of the Board of Supervisors
 - One Planning Commission member
 - County departments: Schools, Parks, Building and Development, Planning, General Services, Mapping, etc. (see below)
 - *Suggestions for County department representation on SC.* Because there are so many County departments with a vested interest in watershed planning, a suggestion was made to limit them to just two SC representatives to speak on behalf of all County staff. If this is the case, then these representatives will need to speak for multiple departments and the County may wish to develop its own internal communications mechanism (such as an interagency committee or County Water Caucus) to coordinate their input and representation on the SC. Another suggestion was to just have one county staff liaison – one “shining voice” – for all departments. The representative County staff position(s) could even be rotating over time to allow for diversity.
 - o Loudoun towns – all seven towns should be invited, whether or not they all are voting members; towns should be included as voting members on sub-watershed committees.

- o Loudoun County Sanitation Authority
- o Development Community
 - Environmental Consultants
 - Engineering
 - Northern Virginia Building Industry Association (NVBIA)
 - Heavy Construction Contractors Association (HCCA)
 - Individuals/Companies
 - National Organization of Industrial and Office Properties (NAIOP)
- o Farming and Agricultural Community
- o Business Community
 - Manufacturing and Industrial
 - Economic Development
 - Solid Waster
- o Conservation Community
 - Loudoun Wildlife Conservancy
 - PEC
 - Loudoun Watershed Watch
 - Goose Creek Scenic Advisory
- o Homeowner associations and other citizen groups
- o State agency representation (may be considered advisory or technical support; some are willing to be advisory and to attend when needed)
- o Federal agency representation (may be considered advisory or technical support)
- o Regional government representation (LSWCD, Metro COG, NoVA Regional Commission)
- o Neighboring counties
- o Citizens-at-large

Steering Committee Formation Proposal: The SWMS Team acknowledged that the list above is broad and many of the interests did not participate in the SWMS process. It is important to members of the SWMS Team that the SC is broadly representative and that all interested and needed parties are able to participate on the SC. In addition, SWMS Team members suggested that the SC have facilitators involved in the process from the beginning to ensure effective and productive meetings and to help facilitate decision making through consensus. The Team suggested that to form the Steering Committee the Interim Bridge Committee or the County could send out a letter on behalf of the SWMS Team to individuals and organizations on the SWMS contact list and other appropriate groups to invite them to a convening meeting for the Steering Committee. At this meeting the group could determine if any other groups need to participate in the process or how to increase or decrease the size and composition of the Steering Committee as needed. The group agreed to this proposal.

Interim Bridge Committee

To accomplish the work that is needed to follow-up with the effort of the SWMS Team and in preparation of the formation of the Steering Committee the group agreed that an Interim Bridge Committee was needed. A group of volunteers from the SWMS Team agreed to coordinate together as this Committee to carry the momentum forward, help educate and inform the BOS, towns, HOAs and other groups about the principals and intentions for the watershed planning process as expressed in the DOC. This group would also work with the County staff to send invitational letters and convene the meeting that will create the Steering Committee. Daytime meetings were recommended for this group and, if necessary, people could participate via conference call. Bruce McGranahan will contact volunteers regarding the next steps. The volunteers for the Interim Bridge Committee are:

- **Randy Vlad**, Loudoun County Public Schools – Construction, 571-252-1298, rvlad@loudoun.gov
- **Gem Bingol**, The Piedmont Environmental Council (PEC), office: 540-955-9000; cell: 703-431-6941, gbingol@pecva.org

- **Bruce McGranahan**, Environmental Program Coordinator, Loudoun County Planning Department, 703-737-8511, bmcgrana@loudoun.gov
- **Randy Williford**, Chief of Stormwater Management, Loudoun County Public Works, 703-737-8686, rwillifo@loudoun.gov
- **Chris Van Vlack**, Loudoun County Soil and Water Conservation District, 703-777-2075 ext. 107, chris.vanvlack@va.nacdnet.net
- **James Mackie**, Loudoun County Environmental Health, Environmental Engineering and Policy Development, 703-737-8931, jmackie@loudoun.gov
- **James Christian**, District Board Chairman, Loudoun County Soil and Water Conservation District, 540-338-4543; fax: 540-338-1550; jimandbarb@starmail.com
- **Mark Peterson**, Luck Stone Corporation, cell: 571-233-1703; office: 703-554-6162; mpeterson@luckstone.com
- **Otto Gutenson**, U.S. Environmental Protection Agency, Wetland and Waters Program; home: 540-882-3205, work: 202-566-1183; gutenson@aol.com; gutenson.otto@epa.gov
- **Cliff Fairweather**, Audubon Naturalist Society, 703-737-9921, cliff@audubonnaturalist.org
- **David Snellings**, Greenvest L.L.C. 703-777-6373, dsnellings@greenvest.com (alternate for David Snellings is **Bill Hatzer**, Toll Brothers, 704-327-5497 ext. 102, cell: 703-973-6402, whatzer@tollbrothersinc.com)

Signatory Celebration and Sharing

After much hard work and discussion the SWMS team celebrated! Having completed the final revisions to the DOC, outlining recommendations for a Steering Committee and forming an Interim Bridge Committee the SWMS Team celebrated its accomplishments by sharing a cake and signing and submitting signatory pages and/or organizational commitments for appending to the final DOC. The signature pages and organizational commitments may be found in the Final Report.

Additionally, the SWMS Team members reflected on their participation in the SWMS effort and their hopes for the next phase of watershed planning. Meeting facilitators stated that the Final Report would be completed at the end of June and distributed electronically to SWMS Team members and via postal mail to those that requested it. Additionally, past meeting summaries and other resources may be found at the SWMS website: <http://www.loudoun.gov/b&d/watershed.htm>. SWMS Team members were enthusiastically thanked for their hard work and dedication to the SWMS process and Team members expressed hope and anticipated both important and hard work in the next phase of watershed planning.



Participants of the June 2006 SWMS Team meeting present the celebratory cake at the fourth and final meeting of the strategic planning process. The three fingers people are holding up represent the hand signal for "fully support" that was used for polling consensus during various parts of the multi-month process.

List of Participants of the June 14, 2006 SWMS Meeting

38 SWMS Team members attended this meeting

Water Supply

Todd Danielson, Community Systems Manager,
Loudoun County Sanitation Authority (LCSA),
703-478-8016, todd.danielson@lcsa.org

Federal and State Agencies

Stacey Sloan Blerch, U.S. Army Corps of Engineers,
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Corey Childs, Virginia Cooperative Extension -
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540-338-4543; fax: 540-338-1550, jimandbarb@rstarmail.com

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Larry Wilkinson, U.S. Department of Agriculture, NRCS,
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Loudoun County

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Mark Novak, Loudoun County Parks and Recreation,
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APPENDIX B

Loudoun Strategic Watershed Plan Solutions Summary of Strategic Planning Interviews

February 15, 2006

Prepared by the Institute for Environmental Negotiation, University of Virginia

During January and February, 2006, the Institute for Environmental Negotiation conducted 17 interviews with stakeholders representing different perspectives and interests about the development of a strategy for watershed planning in Loudoun County. These interviews were conducted in preparation for the first meeting of the Loudoun Strategic Watershed Plan Solutions (SWMS) team on February 22-23, 2006. There was considerable variation in stakeholder responses to the questions (which are listed at the end of this summary). A summary of the widely-shared responses is provided below.

Key Issues and Concerns for The Development Of A Strategy for Watershed Planning In Loudoun County

Growth and development concerns - Many interviewees highlighted how growth and land use impact watersheds. Concerns were expressed about the dramatic rate of growth, and whether infrastructure and water supply were going to keep pace with the demands of growth. Others expressed the need for a balanced and realistic view of growth and natural resource management issues, and that extreme positions of no-growth, or all-growth are neither realistic nor healthy. 'Smart growth' principles were suggested by several interviewees as a potential guiding principle for watershed management. There was also a call to quantify or further understand the impacts of growth and development so informed choices for the future could be made.

Implementation - Several interviewees expressed interest in finding out who would be responsible for the oversight and implementation of the watershed plan at both the County and citizen level. Many people wanted to know who would carry out the strategies and actions identified through the planning process, and who has authority for decision-making and implementation. The plan should be a living, long-term document with clear criteria, priorities and resource allocations. The issue of on-going stakeholder involvement in implementation was a concern as well.

Participation and process - A number of interviewees stated that a balanced, diversified group of stakeholders needs to be involved in the watershed planning process, and that the process should not just be informative in nature, but designed to truly engage participants in meaningful plan design. On-going face-to-face interactions are important. A need was expressed for an ongoing role for a steering committee or task force to be involved throughout the entire watershed planning process.

Clarity and shared understanding - A number of people expressed the need for the process to have clear understanding of definitions, expectations, objectives and goals and to commit to on-going and open communication.

Specific watershed issues or problems of concern - Interviewees identified a few miscellaneous watershed concerns or problems, such as the permitting and ongoing maintenance issue of alternative septic systems, unknown impacts of biosolids applications, compliance with increasingly strict state and federal regulations, inadequate monitoring or knowledge of impaired, Total Maximum Daily Load (TMDL) streams, and increasing stream degradation. Increased nutrient loading and non-point source pollution from agricultural uses were a common concern. The lack of clear knowledge about the relationship between stormwater runoff and TMDLs was also identified as a concern.

Political leadership and support – A number of interviewees expressed the importance of garnering the support of elected officials for the development of the Loudoun Strategic Watershed Plan Solutions effort. A few interviewees felt that more needs to be done by elected officials in Loudoun County to protect water quality and establish minimum requirements or laws regarding water quality.

Policies, regulations, services – A variety of concerns were raised about the County's current lack of policies, codes or planning for such things as Low Impact Development (LID), zoning and stormwater management, stormwater and TMDL concerns, and adequate public services and infrastructure concerns. Interviewees expressed support to put the stream protection overlay ordinance back in force. Finite water supply capacities were a concern, including the increasing number of dry wells and lowered stream flows. There was concern over compliance with the Chesapeake Bay Preservation Agreement (CBPA) requirements. There was also concern expressed about municipal separate storm sewer system (MS4) permitting.

Education and outreach – Several interviewees expressed strong support for citizen watershed education and outreach within Loudoun County. Education ideas included education on Best Management Practices (BMPs) guidelines for individual homeowners to help reduce stormwater runoff. Furthermore, interviewees expressed that the County could serve a unique role as a leader in educational efforts and provider of education and outreach activities within the County.

Knowledge management – Several interviewees expressed a need to fully locate, compile and assess existing data and studies. Many expressed that it is important to obtain a baseline of data. Participants expressed a need for open access to information, existing studies, and to clearly define and delineate watersheds. A further need was expressed to understand the conditions of the streams so that the streams in healthy condition can be protected and those that are impaired can be improved. There is a need for greater coordination and data sharing between county departments.

Watershed goals – Some interviewees suggested goals for the watersheds including preserving healthy streams and clean drinking water, protection of water quality and quantity, and surface and ground water resource protection.

Opportunities in The Development Of A Watershed Plan

Increased awareness, education, and commitment – A number of interviewees suggested that a watershed planning process would provide an opportunity to increase citizen awareness of watershed issues through increased educational outreach efforts. Many interviewees commented that this is an opportunity for the County to increase its role and involvement in education and outreach.

Resource mobilization and organization – The watershed planning process offers an opportunity to mobilize more resources, monetary and in-kind, and possibly greater private sector contributions in terms of mitigation, program support, proffered improvements or Low Impact Development (LID) practices. There are excellent resources available to draw upon (i.e., Loudoun County Sanitation Authority (LCSA) engineers) as well as an opportunity to pull together and analyze substantial baseline data (i.e., monitoring, studies).

Building broad-based support – A watershed planning process offers opportunities to build broad-based support and synergy among the stakeholders, to build on efforts such as the LCSA Water Forum, clarify everyone's roles and responsibilities, and to ultimately to deliver an implemented plan. Successful results in this effort can bring forth successes elsewhere, not necessarily just in watershed planning.

Harnessing the potential of Loudoun's Citizens – Many interviewees suggested that beyond raising awareness, there is a great opportunity to harness the potential of active citizenry. Many Loudoun citizens are well educated and affluent and are willing to be personally engaged in some aspect of watershed protection. There is an opportunity for overall greater communication and coordination between different citizen groups, and different County agencies.

Developing long-term Loudoun County staffing capacity and commitment - Many interviewees noted opportunities for the County to hire dedicated staff, with a diversity of skills, to provide implementation leadership and coordinate volunteer and citizen involvement and activities. There is an opportunity for Loudoun County to come into greater compliance with the principles of its General Plan. It was also noted by a few that there is an opportunity for greater compliance with the Chesapeake Bay Preservation Act.

Learning and implementing new ideas and technologies - A number of interviewees opportunities to learn from other watershed planning models, such as Fairfax or Fauquier Counties, and to embrace and implement new ideas or concepts such as water banking or LID. Some interviewees reflected that there are opportunities for Loudoun to increase and implement LID practices, and to increase the storm water management infrastructure in general. Schools in particular were identified as potential leaders and models for LID.

Protecting the many good existing qualities of Loudoun's watershed - Interviewees expressed that watershed planning is an opportunity to protect Loudoun's existing strong rural and environmental character, its many streams in healthy condition, its existing forests and riparian buffers, its natural topography, and to sustain clean drinking water. Furthermore, interviewees stated that Loudoun is currently in a prime position to develop a watershed plan: LID requirements can be put in place for new development; much of the County is still rural in nature and not built-out as are some neighboring counties; and the planning process can build upon the synergy of other existing watershed efforts within the County. Interviewees expressed strong support for the County to be proactive rather than reactive in its watershed planning effort.

The SWMS interview questions included:

1. How are you involved with watersheds in Loudoun County?
2. What are the key issues and concerns that you feel are critical in the development of a strategy for watershed planning in Loudoun County?
3. What are the greatest opportunities that you see in the development in a watershed plan?
4. The hope of Loudoun County is that at the end of this process we will have a Declaration of Cooperation, agreement, or Memorandum of Understanding (MOU), that describes the framework for creating and implementing the watershed plan. What are your initial thoughts about what key components of the MOU would be important to you? Is there anything more specific that you would need to be in a MOU for this partnership?
5. We are conducting an inventory of ongoing watershed activities and existing resources in Loudoun County. Do you have any specific ideas or suggestions of activities or resources we should be aware of? Can you send us specific information on those activities?
6. What resources do you have available that you could bring to this watershed strategy planning process? i.e. studies, graphics, mapping, etc.
7. What information do you need to be able to participate effectively?
8. Who else should be participating? What are the other groups that should be participating?

APPENDIX C

Loudoun County Strategy for Watershed Management Solutions Full Contact List

Organized by sector then alphabetical by last name.

The full contact list numbers 132 persons; 69 persons participated in meetings.

Bolded and Italicized names attended at least one SWMS Team Meeting between February and June 2006

June 25, 2006

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Ann Larson, Catoctin Scenic River Advisory Committee; Phone: 540-822-5249; Email: klarson@epl-inc.com; Meetings attended: 1

Kate Marinchic, N. Fork Goose Creek; Email: kate.marincic@earthlink.net

Darrell Schwalm, Loudoun Watershed Watch, 308 N. Lincoln Ave., Sterling, VA, 20164; Phone: 703-430-4180; Email: Schwalmie@aol.com; Meetings attended: 3

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DEVELOPMENT & BUSINESS COMMUNITY

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Linda Erbs, William H. Gordon and Associates, LCWAC, 703-729-9009 cell: 703-209-2782; Email: lerbs@whga.com

Sally Gillette, Esq., Reed Smith LLP; Email: sgillette@ldn.thelandlawyers.com

Christine Gleckner, Walsh, Colucci; Email: cgleckner@ldn.thelandlawyers.com

Bill Hatzer, Toll Brothers, 21630 Ridgetop Circle, Suite 130, Dulles, VA, 20166; Phone: 704 327-5497 ext 102 / 703-973-6402 (cell); Email: whatzer@tollbrothersinc.com; Meetings attended: 2

Mark Headly, Wetland Studies and Solutions, Inc. (WSSI), 5300 Wellington Branch Drive, Suite 100, Gainesville, VA, 20155; Phone: 703-679-5600; Email: mheadly@wetlandstudies.com; Meetings attended: 4

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George McGregor, Director of Community Planning, Greenvest L.C., Northern Virginia Building Industry Association (NVBIA), 44084 Riverside Parkway, Suite 300, Leesburg, VA, 20176-5102; Phone: 703-777-6373; Email: gmcmgregor@Greenvest.com; Meetings attended: 3

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Mark Peterson, Luck Stone Corporation, 751 Miller Drive, Suite C-2, Leesburg, VA, 20175; Phone: 571-233-1703-cell- / 703-554-6162 office); Email: mpeterson@luckstone.com; Meetings attended: 4

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Jim Stepahin, Executive Director, Heavy Construction Contractors Association, 10756-B Ambassador Drive, Manassas, VA, 20109; Phone: 703-392-7410; Email: jim@hcca.net; Meetings attended: 1

Mindy Williams, Chamber of Commerce, Vienna, VA, 22182-2265; Email: mwilliams@accesspointpa.com

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David Ash, Clarke County Administrator; Email: dash@co.clarke.va.us

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Anthony Buda, Interstate Commission on the Potomac River Basin; Email: arb7@email.psu.edu

Deirdre Clark, Fauquier County Office of Community Development; Email: deirdre.clark@fauquiercounty.gov

Tom Donbrowski, Prince William County Wetlands

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Ross Mandell, Interstate Commission on the Potomac River Basin; Email: rmandel@icprb.org

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Katherine K. Mull, Northern Virginia Regional Commission, 3060 Williams Drive, Suite 510, Fairfax, VA, 22031; Phone: 703-642-4625; Fax: 703-642-5077; Email: kmull@novaregion.org; Meetings attended: 2

Gregory J. Prelewicz, P.E., Water Resources Engineer, Fairfax Water Authority, 8560 Arlington Boulevard, Fairfax, VA, 22031; Phone: 703-289-6318; Email: gprelewicz@fairfaxwater.org; Meetings attended: 1

Alison Teetor, Clarke County Planning Department, Berryville, VA; Email: ateetor@co.clarke.va.us

Ray Utz, Director - Long Range Planning, Prince William County Planning; Email: rutz@pwcgov.org

FACILITATION & SUPPORT

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Christine Muehlman Gyovai, Institute for Environmental Negotiation, UVA, 104 Emmet Street, Charlottesville, VA, 22903; Phone: 434-982-6464; Email: christineg@virginia.edu; Meetings attended: 4

MEDIA

Katie Murphy, Loudoun Observerkatiemurphy@observernews.com

LOUDOUN SWMS PROCESS EVALUATION

Background. The Loudoun Strategic Watershed Management Solutions (SWMS) is a collaborative initiative to coordinate existing watershed efforts and define a shared vision for managing Loudoun County's watersheds. A stakeholder group was convened by Loudoun County's Department of Building and Development and facilitated by the University of Virginia's Institute for Environmental Negotiation (IEN). The 55 member Loudoun Strategic Watershed Management Solutions (SWMS) Team, consisting of representatives of 41 different development, agriculture, conservation, county, state, federal and citizen interests, worked over the course of four intensive meetings (February to June 2006) to develop a strategy for watershed planning in Loudoun County.

This Evaluation was provided to participants at the 4th and final SWMS Team meeting. The responses below are based on 36 respondents.

36 Responses							
1=completely disagree, 2=strongly disagree, 3=disagree, 4=indifferent, 5=agree, 6=strongly agree, 7=completely agree				% of People that thought the aspect of the process was			
a = important, z = unimportant	Lowest Rating	Highest Rating	Average Rating	Important	Unimportant	No Comment	
The Outcome							
An Agreement was reached	3.0	7.0	5.4	83%	0%	17%	
The agreement was ratified by everyone needed to implement it.	2.0	7.0	5.3	78%	6%	17%	
The agreement will likely be implemented	3.0		4.8	81%	0%	19%	
The outcome satisfies my basic interest	2.0		5.3	56%	17%	28%	
The overall situation is better than before	4.0		5.5	72%	0%	28%	
The outcome is likely better than what I could get from another process	3.0	7.0	5.3	50%	19%	31%	
This process gave me a greater sense of empowerment to impact decisions in my community	3.0	7.0	4.9	33%	36%	31%	
Working Relationships							
The process improved communication among participants	5.0	7.0	5.8	78%	0%	22%	
The process helped build trust among participants	2.0	7.0	5.0	61%	11%	28%	
I improved my understanding about the issues and others' views and values	3.0	7.0	5.4	69%	3%	28%	
The process improved my ability to resolve public issues	3.0	7.0	4.7	33%	28%	39%	
Quality of the Process							
Everyone who wanted to participate had a fair chance to do so	2.0	7.0	6.0	78%	0%	22%	
All relevant issues were raised and addressed	2.0	7.0	5.2	72%	0%	28%	
Everyone had access to the information needed to make good decisions	3.0	7.0	5.5	72%	0%	28%	
Information we used was relevant and up to date	3.0		5.3	72%	0%	28%	
The process fostered information gathering and learning as a group	4.0		5.6	61%	8%	31%	
The group considered different options for resolving the issue	3.0		5.6	67%	6%	28%	
People at the table reported to their constituents on a periodic basis	4.0		4.8	50%	14%	36%	
Participants had a say in how the process was run	3.0		5.7	64%	11%	25%	
Gains and losses were fairly distributed among all participants	3.0		5.0	44%	22%	33%	
The process was efficient. It was time and money well spent	3.0	7.0	5.4	67%	3%	31%	

Was the process helpful? If so, how? If not, please explain.	
1	Yes
2	Yes, it was good to hear everyone's comments
3	It was good to meet with a broad array of people, but it did not change the activities my organization takes part in.
4	Yes
5	
6	Yes, pulled together groups with diverse interests to start watershed planning
7	Gathering stakeholders critical
8	Yes, needed to happen 20 years ago
9	We could not have worked with such a large and diverse group (on such a complex issue) without this process
10	Different approach to an old problem good idea
11	Yes, bringing all sides together
12	
13	Yes, promoted discussion and understanding of stakeholder interests
14	
15	Yes, in getting different interests to agree on plan
16	Not sure, need to What and How the plan will be used
17	Yes, coordination probably wouldn't have been feasible w/o leadership skills and facilitation
18	Good forum to meet face-to-face those interested in watershed planning in the county
19	Yes, kudos on working through the process before getting to far into the planning effort
20	Collaborative process has to be a consensus process to work.. It was!
21	Was only notified of its existence prior to last session
22	Yes, I did not participate until the last meeting. However, it seems as if the group has come together.
23	Visibility for a serious problem
24	
25	Yes, got all the interested parties together and talking
26	Yes, good informal discussion and facts revealed
27	Yes, but I am uncertain on eventual implementation, as it is highly dependent on the BOS allowing staff to fulfill obligations
28	
29	
30	
31	
32	
33	
34	It seemed that agreement was reached on the document. However, the solutions were very limited as the group was approaching the problems from the same direction
35	
36	Yes, we're certainly further ahead than we'd have been without it.

Did the facilitator(s) fulfill his or her responsibilities? (Check all that apply)		
c = check	% checked off	
<i>impartiality</i>	81%	
<i>Process design</i>	69%	
<i>honoring time commitments</i>	75%	
<i>ecouraging participation</i>	92%	
<i>coordinating meeting logistics</i>	83%	
<i>documenting agreement</i>	89%	
<i>confidentiality</i>	50%	
<i>development and support of ground rules</i>	83%	
<i>keeping group focused</i>	92%	
<i>promoting civil discussion</i>	81%	
<i>helping group invent solutions and build agreement</i>	78%	
<i>implementing agreement</i>	53%	

Did you encounter any specific problems during the process? (Click all the apply)			
c = check			
		Totals	Percent
Unrealistic expectations	mine	3	8%
	others	9	25%
No compelling reason to reach agreement	me	1	3%
	others	0	0%
Stakeholder groups	too many	3	8%
	too few	4	11%
Available information	too much	2	6%
	too little	2	6%
Deadlines	too soon	4	11%
	too distant	0	0%
Other		0	0%

How could this process be improved?	
1	More from board and local joe (citizen)
2	Limit on discussions being monopolized by a few groups with an agenda.
3	
4	
5	
6	
7	Keep it going
8	
9	
10	
11	First time through the process objective seemed fine to me.
12	We dug too deep into the technical aspects. This made the document harder to support and made the meetings last longer. We should have kept pulling back to assure we were at a high-level policy perspective.
13	
14	Too many drafts of the same report issued. Typically, I would make up more meetings w/ a shorter duration. As private sector cannot block the subsequent draft w/o example- 6/9 doc vs 6/12 doc
15	1. If the stakeholders would show up that you invited. 2. More visibility in the county- papers, local channel
16	Needed an example plan on projected standards
17	
18	
19	Overall it was great. Having smaller working groups in the future steering committee will help w/ the details
20	Unsure
21	Session not completed yet- won't know until it is complete
22	No specific recommendations
23	Must have participation from the top
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	Often information was provided with a week deadline. It was difficult for someone who does a lot of field work to be able to fully participate.

[illegible]

Compare this process to your next best option (from #5 above). Which of the two would most likely:

c = check		Total	Percent
Cost less?	this process	4	11%
	other option	15	42%
Take less time?	this process	11	31%
Improve communication among participants?	this process	24	67%
	other option	0	0%
Improve trust among participants?	this process	19	53%
	other option	3	8%
Produce a more effective, lasting outcome?	this process	16	44%
	other option	1	3%

Would you recommend a similar process to address other issues?					
1	yes				
2					
3		Depends on the issue... the real sticking points like land use and zoning were not tackled in our meetings			
4	yes				
5					
6	yes				
7	yes				
8					
9	yes				
10					
11	yes				
12					
13	yes				
14	yes				
15	yes				
16	yes				
17	yes				
18		good planning always requires consensus building			
19	yes				
20	yes	most definitely- good job IEN and county			
21					
22	yes				
23	yes				
24					
25	yes				
26	yes				
27	yes				
28					
29					
30					
31					
32					
33					
34					
35					
36					

What other comments or feedback do you have about the SWMS process?

1	
2	Discussions were dominated by small group
3	Overall, worthwhile and necessary, but sometimes quite tedious
4	Excellent process and facilitators- lots of ground to cover- managed well
5	
6	good at finding common ground- contentious issues will not easily be resolved by consensus
7	
8	Excellent facilitation!!!
9	
10	Helped lead the development of the Catoctin TMDL plan. Public participation is extremely difficult to accomplish. We were not successful in this effort. Groups with an iron in the fire will be there, but the general public???
11	
12	
13	I had expected to see more emphasis on watershed planning and less emphasis on how others should develop and implement a watershed plan
14	
15	Good job, thanks- hope you hlp us in the future
16	Need to have a larger number of development representatives
17	Productivity is a kep issue- all government bodies would profit from this approach to leadership skills
18	
19	
20	Press coverage and word of mouth have evoked mostly positive commennts
21	Better identify stakeholders from the outset
22	Good job.
23	
24	
25	
26	Great job!
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	At times, (and in the interest of time) facilitators moved ahead too quickly- it would seem thhat we'd be discussing something that had "touched some nerves" and we'd move on before the subject had really been talked through.

APPENDIX E

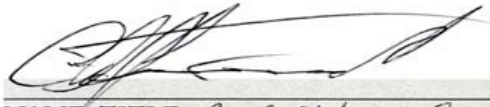
Watershed Planning References

- 1) CCWRA. 2002. *Watersheds: An Integrated Water Resources Plan for Chester County, PA in Landscapes*. Chester County Water Resources Authority.
- 2) CWP. 2000. *The Practice of Watershed Protection: Techniques for Protecting Our Nation's Stream, Lakes, Rivers, and Estuaries*. The Center for Watershed Protection, Ellicott City, MD.
- 3) DCR. 2004. *Local Watershed Management Planning in Virginia: A Community Water Quality Approach*. The Virginia Department of Conservation and Recreation, Richmond, Virginia.
- 4) LCSA. 2003. *Goose Creek Source Water Protection Program*. Loudoun County Sanitation Authority.
- 5) LWW and LWC. 2005. *State of the Streams: A Water Quality Assessment*. Loudoun Watershed Watch and Loudoun Wildlife Conservancy USEPA. 2005.
- 6) MWCOG. 2003. *Loudoun County Baseline Biological Monitoring Survey (2000-2002), Phase I: Broad Run, Goose Creek, Limestone Branch, Catoctin Creek, Dutchman Creek, and Piney Run Mainstem Conditions*. Metropolitan Washington Council of Governments, Department of Environmental Programs, Washington, DC.
- 7) USEPA. 2005. EPA 841-B-05-005. *Draft Handbook for Developing Watershed Plans to Restore and Protect Our Waters*. U.S Environmental Protection Agency, Office of Water, Washington, DC.
- 8) USEPA. 2004. *Protecting Water Resources with Smart Growth*. EPA 231-R-04-002. U.S Environmental Protection Agency, Office of Water, Washington, DC.
- 9) USEPA. 2005. *National Management Measures to Control Non Point Source Pollution from Urban Areas*. EPA 841-B-05-004. U.S Environmental Protection Agency, Office of Water, Washington, DC.
- 10) USEPA. 2006. *Growing Toward More Efficient Water Use: Linking Development, Infrastructure, and Drinking Water Policies*. EPA 230-R-06-001. U.S Environmental Protection Agency, Office of Water, Washington, DC.
- 11) *Using Smart Growth Techniques as Stormwater Management Practices*. EPA 231-B-05-002. U.S Environmental Protection Agency, Office of Water, Washington, DC.

APPENDIX F

INDIVIDUAL COMMITMENTS BY SWMS TEAM MEMBERS

The **Audubon Naturalist Society** will continue to support volunteer water quality monitoring activities in Loudoun County through monitor training, monitoring equipment, storage, and technical guidance. We will also participate in local watershed education activities such as stream walks and slide presentations.



NAME, TITLE *Rust Nature Sanctuary
Manager Naturalist*

6/14/06
Date

Submitted by Cliff Fairweather

**Signatory Page for
*Participating Members of the SWMS Team***

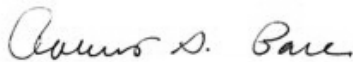
As an individual participant in the SWMS Team, I support iterative, adaptive and collaborative watershed planning as a means to ensure the protection and wise and effective use of Loudoun County's water resources, and to resolve potential watershed management issues and conflicts.

I participated with other stakeholders in developing a consensus strategy for guiding Loudoun County's watershed planning, as expressed in the Declaration of Cooperation.

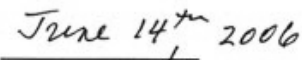
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I support a phased approach to Loudoun's watershed planning, which will allow the county to immediately begin watershed planning, using currently available data to minimize cost.

I intend to participate in, or contribute to, or provide technical support to the work of the Watershed Planning Steering Committee. If I am unable to participate, I will request that my organization identify someone else to represent its interests.



*Robert S. Pace
Chief, Planning Division
US Army Corps of Engineers, Baltimore District*



Date

Signatory Page for
Participating Members of the SWMS Team
June 14, 2006

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This statement of support represents my individual views as a participant in the SWMS Team and does not necessarily represent my organization's official position or represent a commitment of my organization's resources. If my organization is able to make an official commitment of resources to the Loudoun watershed planning effort, a specific Declaration of Commitment is attached.

BRUCE McGRANAHAN

YOUR NAME PRINTED

6-14-06

Date


YOUR NAME SIGNED

Your Organization Printed (Only If appropriate)

**Signatory Page for
Participating Members of the SWMS Team
June 14, 2006**

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Cliff Fairweather

YOUR NAME PRINTED

6/14/06

Date

[Signature]

YOUR NAME SIGNED

Audubon Naturalist Society

Your Organization Printed (Only If appropriate)

Signatory Page for
Participating Members of the SWMS Team

DRAFT 6/14/06

As an individual participant in the SWMS Team, I support the protection of Loudoun County's water resources.

A handwritten signature in cursive script, appearing to read "Dave Snellings", written over a horizontal line.

Dave Snellings

6-14-06

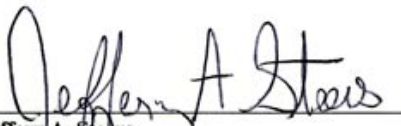
Date (June 14, 2006)

Virginia Department of Environmental Quality -- Northern Virginia Regional Office

The Virginia Department of Environmental Quality (DEQ) supports the development of a strategic plan for watershed management as envisioned by the Loudoun County Strategy for Watershed Management Solutions (SWMS) participants. The Department recognizes the future challenges that project stakeholders face in the development and implementation of a watershed management plan that works to improve regional water quality in Loudoun County.

In the spirit of collaboration and cooperation, the Northern Virginia Regional Office of the DEQ offers to support the project in the following manner, granted that Commonwealth resources allow for such commitments:

- Provide available water quality data to the team as may be needed in support of defining baseline ambient stream conditions;
- Participate as needed or requested in future meetings of the partnership;
- Conduct and electronically publish Total Maximum Daily Load studies initiated for streams to attain water quality standards;
- Assist in educational outreach efforts designed to engage members of the community to meet project goals and to market the program;
- Offer any other appropriate technical assistance in support of the project.


Jeffery A. Stears,
Regional Director
Virginia DEQ Northern Regional Office

6-12-2006
Date

**Signatory Page for
Participating Members of the SWMS Team
June 14, 2006**

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Denna T. Rogers

YOUR NAME PRINTED

6-14-06

Date

Denna T. Rogers

YOUR NAME SIGNED

Farmer

Your Organization Printed (Only If appropriate)



Loudoun County, Virginia

Department of General Services
211 Gibson Street, N.W. Suite 123, Leesburg, VA 20176
Phone: 703/771-5552 Fax: 703/737-8008

Signatory Page for *Participating Members of the SWMS Team*

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David S. Ward
Loudoun County, Dept of General Services

6/14/06

Date

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Participating Members of the SWMS Team**

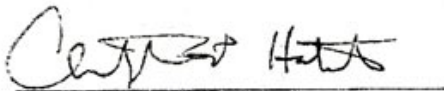
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I intend to participate in, or contribute to, or provide technical support to the work of the Watershed Planning Steering Committee. If I am unable to participate, I will request that my organization identify someone else to represent its interests.



Christopher L. P. Hatch (Please sign above)

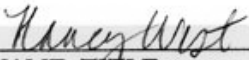
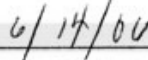
Loudoun County Farm Bureau, Inc.

June 21, 2006

Date (June 14, 2006)

The Goose Creek Association will provide:

- Baseline stream monitoring information, both biological and chemical, for current locations on the Goose Creek and Little River. Additional sites may be added.
- Education Outreach Programs, independently or in conjunction with other conservation organizations such as the Piedmont Environmental Council or Loudoun Watershed Watch, to inform citizens of Best Management Practices to maintain the health of the watershed.

 _____ NAME, TITLE	 _____ Date
---	---

Submitted by Nancy West, Goose Creek Association

Signatory Page for
Participating Members of the SWMS Team

DRAFT 5/26/06

SWMS TEAM MEMBERS: Please determine if your organization can sign this. If it is too difficult or inappropriate for your organization to formally sign this statement, then we would ask you to sign this individually, just representing yourself as a participant in the process, using the OPTIONAL paragraph below.

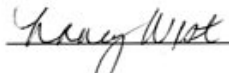
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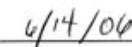
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_____

Nancy West

Goose Creek Association

_____

Date (June 14, 2006)

The **Goose Creek Scenic River Advisory Committee (GCSRAC)** fully supports the Loudoun Strategic Watershed Management Solutions (SWMS) initiative to coordinate the many diverse watershed stakeholders in Loudoun County in order to effect a coordinated County-wide program to protect this watershed and insure its future life and potability.

To that end the Goose Creek Scenic River Advisory Committee will commit to offering its support to establishing a meaningful county program that protects and enhances the watershed.

In our work, the Goose Creek Scenic River Advisory Committee will continue to work with riparian landowners along Goose Creek to establish riparian setbacks and other water cleansing methods to protect the water.

Where possible we will also commit to educating the public in good water husbandry. We will also continue to work with SWMS as necessary and support testimony before the County Planning Commission and/or County Board of Supervisors in order to create a meaningful new county ordinance to protect Loudoun's waters for the future.

<u>Helen E Casey</u>	<u>6-14-6</u>
NAME, TITLE	Date

Submitted by Helen Casey

**Signatory Page for
Participating Members of the SWMS Team
June 14, 2006**

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Helen E. Casey
YOUR NAME PRINTED

6-14-6
Date

Helen E. Casey
YOUR NAME SIGNED

Roanoke Creek scenic River Advisory Committee
Your Organization Printed (Only If appropriate)

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Gem Bingol for Christopher G. Miller

YOUR NAME PRINTED

6-14-06

Date

, Gem Bingol for Christopher G. Miller
YOUR NAME SIGNED President

Piedmont Environmental Council

Your Organization Printed (Only If appropriate)

**Signatory Page for
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James Mackie

YOUR NAME PRINTED

6/14/06

Date

J Mackie

YOUR NAME SIGNED

Loudoun County Health Department

Your Organization Printed (Only If appropriate)

Loudoun County Department of General Services – Public Works Division commits to support SWMS efforts by performing stormwater management functions outlined in the General Virginia Pollutant Discharge Elimination System (VPDES) Permit Regulation for Discharges of Stormwater from Small Municipal Separate Storm Sewer Systems (MS4) and declared as General Services Department responsibilities in the Loudoun County VPDES Phase II Stormwater Management Plan and Chapter 1096 of the Codified Ordinances of Loudoun County.

These functions include:

1. Surveying and mapping the storm sewer system in Eastern Loudoun County and keeping it updated.
2. Mapping VPDES major outfalls and identifying receiving streams to which they discharge.
3. Developing and enforcing an Illicit Discharge Detection and Elimination program.
4. Developing and enforcing a BMP maintenance program requiring annual maintenance reports or County maintenance in accordance with executed agreements.
5. Maintaining and repairing stormwater infrastructure to meet its original design capability.

The Department will also keep other County departments, which are involved in the VPDES Permit, apprised of their responsibilities and, in some cases, assist them in complying with the six minimum control measures which include:

1. Public Education and Outreach on Stormwater Impacts
2. Public Involvement/Participation
3. Illicit Discharge Detection and Elimination
4. Construction Site Stormwater Runoff Control
5. Post-Construction Stormwater Management in New Development and Redevelopment
6. Pollution Prevention/Good Housekeeping for Municipal Operations

Finally, the Department will ensure the completion of the VPDES Annual Reports detailing the progress of the program.



Randall J. Williford
Chief, Stormwater Management



Date



Loudoun County, Virginia

Department of General Services
211 Gibson Street, N.W. Suite 123, Leesburg, VA 20176
Phone: 703/771-5552 Fax: 703/737-8008

Signatory Page for *Participating Members of the SWMS Team*

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David S. Ward
Loudoun County, Dept of General Services

6/14/06

Date

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Todd Danielson

YOUR NAME PRINTED

6/14/06

Date



YOUR NAME SIGNED

Loudoun County Sanitation Authority

Your Organization Printed (*Only If appropriate*)



LOUDOUN SOIL AND WATER CONSERVATION DISTRICT

30 Catoctin Circle, SE, Suite H, Leesburg, VA 20175

(703) 777-2075 / (703) 771-8395

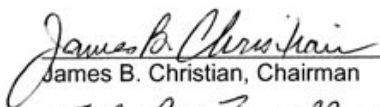
Virginia Soil and Water Conservation

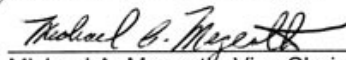
June 7, 2006

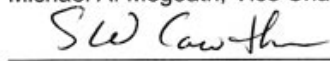
The Loudoun Soil and Water Conservation District (LSWCD) is a political subdivision of the Commonwealth of Virginia managed by a local Board of Directors. The LSWCD welcomes the opportunity to work with the Loudoun County Strategic Watershed Management Solutions (SWMS) Committee in the development of an effective plan for watershed management.

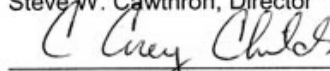
The LSWCD will:

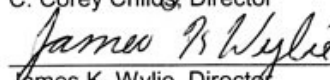
- a.) work with Federal (EPA, Army Corps of Engineers, USDA-NRCS), State (DCR, DEQ, VDOF, VGIF, VCE), and local authorities (Loudoun County Government, MWCOG, Potomac Council) and the private sector to address Loudoun County's soil and water conservation needs;
- b.) provide technical and financial assistance to landowners for the implementation of the Virginia Agricultural BMP (Best Management Practices) Cost-Share and Tax Credit Programs and the agricultural component of the Catoctin Creek TMDL Agricultural Implementation Plan;
- c.) continue to monitor Loudoun County's streams as appropriate and as resources allow;
- d.) continue to provide conservation education programs to youth and adults;
- e.) provide technical assistance to landowners (urban and rural) and government agencies on soil and water conservation related issues.


James B. Christian, Chairman


Michael A. Megeath, Vice Chairman


Steve W. Cawthron, Director


C. Corey Childs, Director


James K. Wylie, Director



Printed on Recycled and Recyclable Paper

A partnership to conserve natural resources

Loudoun Watershed Watch (LWW) fully supports the Loudoun Strategic Watershed Management Solutions (SWMS) initiative to coordinate existing watershed planning efforts and affect a shared vision for watershed activities in Loudoun County. Historically, Loudoun County has done little watershed management planning. All Loudoun streams are impacted to some degree by human activities. Several are degraded to the degree that they do not meet either Federal Clean Water Act or Virginia Water Quality Standards for recreational use and aquatic life. Portions of streams that have been designated as impaired by the state include: Catoctin Creek and its tributaries, Goose Creek and its tributaries, Little River, Limestone Branch, Piney Run, Broad Run, and Sugarland Run.

State water pollution reports (i.e., DEQ's Integrated Report and Total Maximum Daily Load reports) document that nonpoint pollution is the major cause of fecal bacteria pollution in Loudoun streams. Past initiatives to encourage landowners to voluntarily install BMPs, such as fencing-off streams to livestock, have had limited success. All major Loudoun watersheds are impacted by pollution from agricultural activities. In addition, TMDL reports for Goose Creek and Little River document that sediment from stream bank erosion and wash off from pastureland are a major cause of stream degradation. DEQ estimates that 68,000 tons of sediment is flowing into the Potomac River from Goose Creek every year. Further, DEQ estimates that a 6% increase in developed land will increase sediment loads from stream bank erosion another 36%.

Unfortunately, Loudoun County water resource programs are divided between a variety of County authorities, and there is little community and citizen investment. There are no countywide or watershed based plans to manage, protect, or restore degraded water resources. Rather programs are administered on a case-by-case, site-specific basis. Resources are used inefficiently, results are ineffective, and damages to private property are increasing. The SWMS initiative provides the opportunity to engage in countywide planning that will improve water quality and public health, provide economic opportunities for agriculture and tourism, protect the health of streams for aquatic life and riparian buffers for wildlife, promote the conservation of natural resources, and create additional recreational opportunities for all citizens. These benefits can be achieved in a cost-effective manner through phasing watershed planning activities, establishing priorities for protection and restoration projects, and better integrating water resource protection with county policies, codes, and ordinances.

Loudoun Watershed Watch commits to supporting the SWMS initiative in four ways:

1. **SWMS Initiative** -- LWW is one of many stakeholders in Loudoun that support watershed management planning and the Total Maximum Daily Load (TMDL) Implementation Planning initiatives. These stakeholders only lack a County-sanctioned authority that can organize and lead a collaborative County-Stakeholder initiative to compile and analyze water resource data and develop watershed management plans that address the objectives of the larger Potomac River and Chesapeake Bay watersheds initiatives. LWW also recognizes that subwatersheds provide homogeneous management areas and are probably the best units to use to develop effective management plans. Small subwatersheds will also facilitate timely monitoring, mapping, and other management tasks.
 - a. A representative of LWW will continue to work with SWMS, the Loudoun County, and other authority with responsibilities for implementing a workable watershed management planning process and developing watershed management plans.
 - b. LWW will continue to provide technical and management advice and support for the initiative as needed.
 - c. LWW will continue to encourage and organize citizen involvement in the SWMS initiative by promoting citizen participation, contributing volunteer resources, and encouraging citizen support for water resource conservation policies and practices.
2. **Stream Monitoring** -- Effective watershed management planning depends upon good water resource and water quality data collected from both probabilistic and trend stations. These data need to be collected using sampling protocols that will ensure that future monitoring data will be fully compatible with existing baseline data and state data. Data collected under these

guidelines can provide timely feedback on how stream habitats and biological communities are responding to the management practices outlined in the watershed plans.

- a. LWW will provide technical expertise and collaborate to develop and maintain stream monitoring and habitat assessment protocols that meet the SWMS initiative goals.
- b. LWW will provide technical expertise, and will collaborate to develop a comprehensive surface water monitoring plan that includes both probabilistic and trend monitoring.
- c. LWW will continue to work in partnership with Loudoun Wildlife Conservancy to monitor the quality and health of streams.
- d. LWW will continue to make public its water quality monitoring data, analyses, and assessment reports on Loudoun streams.

3. **Community Outreach and Education** -- Successful watershed management planning in Loudoun County also depends on people valuing clean water and healthy streams, and contributing to the watershed plan implementation activities needed to protect and restore the County's water resources. LWW supports the SWMS planning goals that involve citizens and other stakeholders in the development of the Watershed Management Plans in order to enhance the plan's value to citizens.

- a. LWW will collaborate with County authorities and other stakeholder groups to continue to develop educational materials on the conservation of water resources in Loudoun County.
- b. LWW will collaborate with County authorities and other stakeholder groups to continue to organize community outreach and stewardship projects to engage citizens and communities in water quality protection and restoration activities.
- c. LWW will continue to provide a website that offers educational materials on water resources protection and restoration to Loudoun County citizens.

4. **Program Evaluation and Adaptive Management** -- The effectiveness of a watershed management planning initiative for Loudoun County will be measured by the degree to which good quality streams are protected and streams of marginal quality are restored. Policy and management approaches and strategies to accomplish this will need to adapt to changing conditions over time and to problems identified in periodic assessments of accomplishments.

- a. LWW will collaborate with County authorities and other stakeholder groups to collect and analyze data that can be used to assess progress under the watershed management planning initiative to protect and restore our water resources.
- b. LWW will work with the Steering Committee and provide management expertise to County authorities to make adaptations in the SWMS process and watershed plan as needed.

Fred W. Fox

Fred W. Fox
Volunteer, Loudoun Watershed Watch

6/14/06

Submitted by Darrell Schwalm, Loudoun Watershed Watch

**Signatory Page for
Participating Members of the SWMS Team**

As an individual participant in the SWMS Team, I support iterative, adaptive and collaborative watershed planning as a means to ensure the protection and wise and effective use of Loudoun County's water resources, and to resolve potential watershed management issues and conflicts.

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I intend to participate in, or contribute to, or provide technical support to the work of the Watershed Planning Steering Committee. If I am unable to participate, I will request that my organization identify someone else to represent its interests.

Mark R. Bennett

Mark R. Bennett

USGS Virginia Water Science Center

6/14/00

Date

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Mark E. Peterson

YOUR NAME, TYPED (Please sign above)

6. 14. 06

Date (June 14, 2006)



June 12, 2006

District of Columbia

Bowie

College Park

Frederick County

Gaithersburg

Greenbelt

Montgomery County

Prince George's County

Rockville

Takoma Park

Alexandria

Arlington County

Fairfax

Fairfax County

Falls Church

Loudoun County

Manassas

Manassas Park

Prince William County

W. Kelly Baty,
SWMS Project Manager
Loudoun County, Department of Building and Development
1 Harrison Street, SE
Leesburg, VA 20177

Subject: Letter of Support for Strategic Watershed Management Solutions (SWMS)

Dear Kelly,

As the Metropolitan Washington Council of Governments (COG) representative on the SWMS Team, I recently had the pleasure of participating with you and other stakeholders in developing a consensus strategy for guiding Loudoun County's watershed planning, as expressed in the Declaration of Cooperation. Not surprisingly, I strongly support iterative, adaptive and collaborative watershed planning as a means to ensure the protection and wise and effective use of Loudoun County's water resources, and to resolve potential watershed management issues and conflicts.

I also endorse the creation of a Watershed Planning Stakeholder Steering Committee to help guide the development of Loudoun's watershed and subwatershed plans. In addition, I am supportive of a phased approach to Loudoun's watershed planning, which will allow the county to immediately begin watershed planning, using currently available data to minimize cost.

Having been involved, since 1997, in joint COG/LSWCD stream assessment studies, I intend to continue to participate in and provide technical support to the work of the Watershed Planning Steering Committee. If I am unable to participate, I will request that my organization identify someone else to represent its interests.

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Sincerely,

John Galli, Technical Manager

cc: Ted Graham





30H Catoctin Circle, SE.
Leesburg, VA 20175

June 7, 2006

USDA-Natural Resources Conservation Service (NRCS) supports this cooperative effort to improve the water quality of Loudoun County streams. NRCS will:

- Provide appropriate staff to support the efforts and programs of the Loudoun Soil and Water Conservation District.
- Administer Federal soil and water conservation programs created under the "Farm Bill".
- Provide technical standards and specifications for appropriate soil and water conservation practices.
- Provide on site design and installation assistance (both technical and financial) for conservation practices to landowners in Loudoun County.
- Provide soils data and interpretations to landowners and others.
- Assist with educational efforts of this partnership.
- Participate in future meetings of this partnership.

Lawrence S. Wilkinson
District Conservationist

Signatory Page for
Participating Members of the SWMS Team
June 14, 2006

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Otto Gutenson

YOUR NAME PRINTED

6/14/06

Date

Otto Gutenson

YOUR NAME SIGNED

Your Organization Printed (Only If appropriate)

Signatory Page for
Participating Members of the SWMS Team

DRAFT 5/26/06

SWMS TEAM MEMBERS: Please determine if your organization can sign this. If it is too difficult or inappropriate for your organization to formally sign this statement, then we would ask you to sign this individually, just representing yourself as a participant in the process, using the **OPTIONAL** paragraph below.

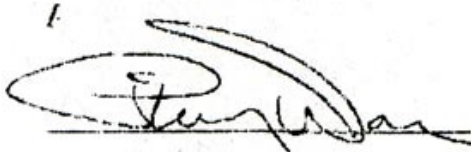
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Philip Daley, representative

Loudoun Wildlife Conservancy

Date (June 14, 2006)

The **Piedmont Environmental Council (PEC)** commits to provide watershed technical support and data; support for citizen/public involvement; education, funding, policy and regulation support.

- Watershed technical support and data
 - Provide GIS data & maps as well as entire body of recommendations to Loudoun County from Goose Creek Assessment work already completed. Provide similar information resulting from the Leesburg project.
 - Provide GIS data to Loudoun County regarding conservation easements and easement monitoring.
- Water Quality
 - Continue to work on obtaining conservation easements in the entire Goose Creek watershed, building on the results & recommendations in the reports.
 - Focus on obtaining landowner commitments to plant riparian buffers & involve Loudoun County Soil & Water Conservation District & NRCS.
 - Encourage landowners to commit to language in easement documents to maintain riparian buffers in the Goose Creek watershed, particularly in those subwatersheds deemed as Rurally Impacted, and High Quality.
 - Work with landowners to identify important natural resources on their property and how the landowners can meet their needs while preserving the resources.
 - Continue to work with Parks & Recreation Department to help fill in the blanks on streamside trail connections that they are working to complete.
- Support for Citizen/Public Involvement
 - Help spread the word and work with the grassroots to encourage watershed planning participation. Recruit key volunteers to help lead the effort.
 - Utilize a "neighborhood party" outreach model to work with residents to encourage critical actions to improve watershed water quality.
 - Provide SWMS team interface to County FSMPRC (for the duration of my service).
- Education
 - Help to train volunteers in the Center for Watershed Protection methodologies for stream assessment and associated field work.
 - Continue to encourage schools participation by following the high school involvement model started in Purcellville.
 - Continue to participate in LWW and its Family Stream Day activity to inform younger students and their families.
- Funding
 - Seek grant funding to help support our continued watershed work.
- Policy and Regulation Support
 - Provide SWMS team interface to County FSMPRC (for the duration of my service).
 - Advocate for LID practices and policies which would support the watershed management goals.

<i>Gem Bingol, Field Officer</i> NAME, TITLE	<i>6-14-06</i> Date
<i>for Christopher G. Miller President</i>	
<i>Submitted by Gem Bingol, Piedmont Environmental Council</i>	

* to the extent possible

**Signatory Page for
Participating Members of the SWMS Team
June 14, 2006**

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This statement of support represents my individual views as a participant in the SWMS Team and does not necessarily represent my organization's official position or represent a commitment of my organization's resources. If my organization is able to make an official commitment of resources to the Loudoun watershed planning effort, a specific Declaration of Commitment is attached.

Robert P. Swanson

YOUR NAME PRINTED

, 6/14/06

Date

Robert P. Swanson

YOUR NAME SIGNED

Virginia DEQ

Your Organization Printed (*Only If appropriate*)

Signatory Page for
Participating Members of the SWMS Team
June 14, 2006

As an individual participant in the SWMS Team, I support iterative, adaptive and collaborative watershed planning as a means to ensure the protection and wise and effective use of Loudoun County's water resources, and to resolve potential watershed management issues and conflicts.

I participated with other stakeholders in developing a consensus strategy for guiding Loudoun County's watershed planning, as expressed in the Declaration of Cooperation.

I support formation of a stakeholder Watershed Planning Stakeholder Steering Committee as the most effective watershed management structure to guide the development of Loudoun's watershed and subwatershed plans.

I support a phased approach to Loudoun's watershed planning, which will allow the county to immediately begin watershed planning, using currently available data to minimize cost.

I intend to participate in, or contribute to, or provide technical support to the work of the Watershed Planning Steering Committee. If I am unable to participate, I will request that my organization identify someone else to represent its interests.

This statement of support represents my individual views as a participant in the SWMS Team and does not necessarily represent my organization's official position or represent a commitment of my organization's resources. If my organization is able to make an official commitment of resources to the Loudoun watershed planning effort, a specific Declaration of Commitment is attached.

RANDALL J. WILLIFORD

YOUR NAME PRINTED

6/14/06

Date

Randall J. Williford

YOUR NAME SIGNED

Your Organization Printed (*Only If appropriate*)