



## Loudoun County, Virginia

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Department of Building and Development

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### **Loudoun County Cooperative Stream Monitoring Program (SMP)**

#### **Goal**

To develop a comprehensive cooperative program to monitor and protect the water resources of Loudoun County. This cooperative effort recognizes the strengths and past work of participating groups, and looks to enhance all contributions through the synergy of effective working relations among citizens of Loudoun County, private organizations, County personnel, and Federal and State agencies.

#### **Objective**

To obtain and organize base-line water quantity and quality data on streams throughout Loudoun County to assess current conditions as well as to determine long-term trends. A County-wide database will help evaluate and implement policies and procedures to mitigate impacts of land development and other land-use activities.

Additionally, more specific objectives of the program include:

- To pursue available technology to implement the objectives of this Program;
- To involve the general public in water quality issues and raise the public's awareness of the County's water quality problems and solutions;
- To build constituencies for watershed protection, restoration, and stewardship;
- To educate the public, local units of government, the business community, and others about the County's water resources through educational programs, workshops, outreach materials, public events, user-friendly summary reports and other media;
- To utilize stream monitoring data to implement programs and projects, such as BMP's, to protect and enhance water resources;

- To utilize stream monitoring data as one tool to bring specific problems or pollution sources to the attention of the County and, if necessary, the State for investigation and possible corrective action;
- To utilize stream monitoring data as a tool to assist in County watershed planning initiatives;
- To expand the monitoring network to all sub-watersheds (as defined by the USDA 14-digit hydrologic units) in the County;
- To incorporate the database into the Loudoun County Geographic Information System (LOGIS) to assist in data analysis; and
- To provide regular reporting capability on surface water resource conditions.

### **Current Monitoring Programs**

Several organizations currently monitor various streams throughout the County. The Loudoun Soil and Water Conservation District and the USGS have provided various long term monitoring efforts in addition to the *Loudoun Stream Quality Project*, a program of the Loudoun Wildlife Conservancy, Audubon Naturalist Society, and the Loudoun Soil and Water Conservation District. These efforts will provide the basis for a comprehensive data set. There are also numerous sites for which grab samples have been taken by USGS and/or DEQ. Table 1 is a summary of some of the sampling efforts in the County, but it is not meant to be an all-inclusive list.

### **Future Monitoring Sites**

There is no dedicated budget within the County for stream monitoring and staffing levels are currently low; the request for additional staff has been made, although it is not the purpose of this document to establish any obligations with respect to staffing. The role of the County in developing sampling sites will be evaluated as staffing levels increase and the roles of the various parties to this document are more clearly defined. The County may actively seek monitoring sites and support from the development community through conservation easements, financial support and proffer commitments to monitor development sites using private consultants. The parties in this document will work cooperatively to identify future monitoring sites.

The addition of new monitoring sites, to be administered by the other parties to this document, is dependent on the number of trained volunteers and professional staff available to create new teams as well as on the number of certified team captains.

Most current sites are located in the western and northern sections of the County. As a result, the Broad Run, Bull Run, and Lower Goose Creek watersheds are under-represented. Watershed surveys should be conducted to determine suitable locations within these watersheds that will best meet the objectives of the program.

## **Volunteer Involvement and Training**

Loudoun County has an abundance of qualified and motivated citizen volunteers including current and retired government employees, senior citizens, high technology industry employees, students, civic group members, and others. Recognizing that government alone is unable to resolve all the issues and problems affecting Loudoun's water resources, it is the goal of the SMP to encourage the meaningful involvement of our citizens.

Citizen volunteers who are interested in stream monitoring will be trained through involvement in the *Loudoun Stream Quality Project*. Stream monitoring training is provided by the *Project* through a year-round curriculum of classroom instruction, stream monitoring practice, and actual sampling sessions. County staff will refer interested volunteers to the *Loudoun Stream Quality Project*.

Citizen participation in programs other than stream monitoring can also be very beneficial. Examples of other avenues to elicit citizen participation include:

- Encouraging citizen involvement in existing County programs, such as "Soil Watchers," *Keep Loudoun Beautiful*, and riparian tree planting;
- Coordinate with the Department of Conservation and Recreation to implement a local "Adopt-A-Stream" program to provide for regular litter removal;
- Joint participation/sponsorship of workshops, training, and other public events to inform and involve potential volunteers; and
- The formation of additional cooperative programs between the County government and other government and/or non-government groups.

## **Monitoring Parameters/Schedule**

It is recognized that different participating groups use different sampling schemes; there is no intent to limit participation in this program due to the sampling scheme employed. New volunteers into the program are encouraged to use the sampling scheme of the *Loudoun Stream Quality Project*.

The possibility of augmenting data collection efforts with additional County resources will be discussed if and when budget and staffing levels permit. Options may include using volunteers or professional staff to collect additional water quality parameters such as turbidity (other than a qualitative measure), stream flow/stormwater runoff, groundwater table, and water chemistry. Future discussions may also address increasing the monitoring frequency and implementing targeted monitoring to evaluate the effects of major land disturbing activities.

### **Data Synthesis and Analysis**

Volunteer and professional organizations have generated a considerable record of historic data and will continue collecting water quality data. This Program recognizes the critical role of County professional staff in utilizing the data generated by these groups as a planning tool and to create user-friendly data-sets for the public and decision makers.

Concurrent with the development of the database and integration with LOGIS, a plan for utilizing the information will have to be developed. Suggested uses include:

- To organize historic and current data into digital formats to facilitate data sharing with other government agencies;
- To develop baseline data to identify trends;
- To help identify current problem areas (BMP's absent, not working, or not employed correctly);
- To help provide a sound basis for making watershed planning decisions;
- To help test the effectiveness of current and/or new BMP measures;
- To assist in the creation of summary documents outlining the water resources of Loudoun County at a sub-watershed level;
- To facilitate communication between the *Loudoun Stream Quality Project*, and other groups and elected officials and others who determine County policies; and
- As necessary, to arrange expert consultation to provide data analysis and interpretation and to advise the parties on stream monitoring methodology.

### **Quality Assurance/Quality Control Plan**

This area of the Program has yet to be determined. Depending on the clearly defined objectives of the Program, the QA/QC plan will have to meet the highest standards in order to adequately support future decisions based on the monitoring program results. The parties will consider the adoption of QA/QC protocols such as those included in the Department of Environmental Quality's Virginia Citizens Monitoring Methods Manual (<http://www.deq.state.va.us/cmonitor/manual.html>).

### **Potential Funding Sources**

Collaboration of all parties hereto is encouraged to identify funding needs and potential funding sources. This document recognizes that private funds may not be available for government operations, and that avoiding duplication and meeting critical needs is in the mutual interest of all.

### **Miscellaneous Provisions**

To the extent practicable, recognizing that this document does not establish any staffing obligations, County staff will provide the *Loudoun Stream Quality Project* with available resources such as staff time, equipment, facilities, data, maps, etc.

### **SMP Acknowledgement**

The undersigned will engage in a cooperative effort to protect and restore the water resources of Loudoun County through this Program. The following provisions shall apply:

- 1) This Document does not constitute an obligation or commitment of County funds. Any endeavor involving reimbursement or contribution of funds between the parties hereto will be effected by the appropriate, legally required vehicle, such as a grant, memorandum of understanding, or contract, in accordance with applicable laws, regulations, and procedures, and will be subject to the availability of appropriated funds;
- 2) This Document may be amended upon notification and agreement of other parties;
- 3) Any party may terminate their involvement in this Program at any time upon notification to the other parties stating their reasons for termination;
- 4) This Document is initially between the *Loudoun Stream Quality Project* or its successor and the Loudoun County Department of Building and Development or its successor.
- 5) The Chair or Co-Chair of the *Loudoun Stream Quality Project* and the Chief Engineer in the Department of Building and Development will be the points of contact for any issues that arise from this Program.
- 6) Additional parties may join the Program at any time by executing this Document.
- 7) This Document shall serve solely as a Memorandum of Understanding among the parties hereto regarding the matters set forth herein.

Signatories:

Dept. of Building and Development

Loudoun Stream Quality Project

Linda B. [Signature] 12/20/00  
Chief Engineer Date

Gem Bingöl 12/20/00  
Co-Chair Date

Terrence [Signature] 12/21/00  
Director Date

Paul W. Fox 12/20/00  
Co-Chair Date

## Loudoun County Cooperative Stream Monitoring Program Participants

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