



## WATER RESOURCES RESEARCH GRANT PROPOSAL

**Project ID:** 2002NY4B

**Title:** Supporting Community Watershed Restoration Efforts in Catatonk Creek

**Project Type:** Research

**Focus Categories:** Hydrology, Water Quantity, Water Quality

**Keywords:** Flooding, water quality, streambank erosion, hydrology, education

**Start Date:** 03/01/2002

**End Date:** 02/28/2003

**Federal Funds:** \$11,993

**Non-Federal Matching Funds:** \$18,699

**Congressional District:** NY 26

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**Abstract**

**Problem:** The headwaters of the Susquehanna River within New York State are characterized by excessive flooding during major storm events and spring snowmelt. The terrain within the Upper Susquehanna River sub-basins includes rolling hills with steep walled side valleys that focus runoff to feed the main river flows. Because of the steep gradients, the feeder streams can carry large sediment and gravel loads resulting in streambank erosion, sedimentation, gravel deposition and flooding.

The Upper Susquehanna Coalition is providing technical support to local groups, and this proposal provides a mechanism to add an academic component to this partnership to help inform and educate the citizens groups about the physical and chemical hydrology within their watersheds.

**Objectives:**

- Continue assessments of the Catatonk Watershed to document potential project sites
- Integrate information into the Catatonk Creek Watershed Strategic Plan
- Develop a watershed hydrological model to aid in selecting effective implementation projects and determine how effectively they modify flows associated with flooding
- Support local community action groups by presenting information to residents on how their watershed functions
- Use the information gathered to develop at least one implementation proposal to address flooding/erosion issues

**Methods :**

1. a. Watershed assessment

2. The USC and Penn State University have developed an ArcView GIS-based assessment tool for stream corridor problems and wetland development potential. The tool manages data, maps and photographs. The USC is using this tool to assess the Catatank Creek Watershed.

5. b. Measuring water chemistry parameters, suspended solids monitoring, and watershed modeling

7. The USC deployed a continuous rainfall gage and five flow meters (stream height gages) in high priority tributaries to collect pre-construction flow information in summer 2001 (see attached figure for locations). Rainfall events and flows in 2002 will continue to be monitored and compared with similar precipitation events after wetlands and other flood reduction projects are constructed.

9. Based on the results of the summer 2001 flow measurements within Catatank Watersheds, we will collect water and suspended sediment samples on a " significant event basis" schedule using automated stormwater runoff samplers at two of the flow measurement sites. Base flow sampling will be also be done in these watersheds on a bi-weekly basis. Normal water chemistry parameters (i.e. temperature, pH, conductivity) as well as metal concentrations will be assessed.

10. c. Using data integration from this project for selection of potential future project sites

Data collection, integration, and interpretation will be used to target important restoration sites in the Catatank Strategic Plan.