Wallkill River Watershed Conservation and Management Plan

EXECUTIVE SUMMARY (1/07)

The full Wallkill River Watershed Conservation and Management Plan presents detailed sections on existing watershed conditions, issues and recommendations. The executive summary will focus primarily on the recommendations of the Plan, with a minimum of background information.

The size of this Watershed (nearly 800 square miles) and the wide scope of the recommendations in this Plan argue for a dedicated staff position to coordinate implementation efforts. A ***Watershed Coordinator*** could focus exclusively on watershed conservation and management issues and help to make more efficient the efforts of other involved agencies and individuals.

Additionally, a lesson from other watersheds that have been successful in implementing management programs is the value of a ***Watershed Association*** or similar group for ensuring broad stakeholder participation and support. The Watershed Coordinator would logically work for, or at least receive some direction from, this group.

Therefore, an initial and major recommendation of this Plan is to seek funding for a full time coordinator position. In addition, further study should be made of the optimal structure of said position and of the broad-based group that would provided guidance to the Coordinator and help to ensure that active watershed management efforts maintain continuity. Implementation of the following recommendations will proceed with or without a Watershed Coordinator and Association, but having them would vastly increase the efficiency with which limited resources are brought to bear on the ambitious list.

Black Dirt Region

The 16,000 acre Black Dirt Region plays a major role in the agricultural economy of the Watershed. Its unique geology presents many natural resource management challenges. These include addressing the following :

- wind and water erosion
- flooding
- effective drainage
- subsidence
- streambank erosion

Wind and Water Erosion – Conservation practices have been developed that are adaptable to the specialized agriculture practiced in the Black Dirt Region. These include cover crops, ditch bank seeding, and to a limited extent windbreaks. ***This Plan recommends continued financial support for implementing these practices, and for staff to work with growers on practice adoption, addressing technical issues, and developing new practice approaches.***

Flooding – The Black Dirt is located in a natural floodplain area; therefore complete elimination of flooding is of questionable practicality. Nevertheless, continued flood control measures are warranted to protect these highly valuable agricultural lands. The Army Corps of Engineers and the USDA-Natural Resources Conservation Service have recently been asked to investigate feasibility and options

for improving flood control. ***This Plan recommends vigorous lobbying of both federal agencies to ensure full and quick response to these requests.***

Effective Drainage – While effective drainage is primarily a production practice, strong erosion control and flood management programming will facilitate grower efforts to maintain effective drainage systems.

Subsidence – This process of oxidation of the highly organic Black Dirt soils truly makes them a nonrenewable resource. However, their useful life can be greatly extended by careful management. ***This Plan recommends that the continued financial and staff resources called for under the Wind and Water Erosion Control section be also utilized to continue studying and promoting practical subsidence control practices such as controlled drainage systems and green manure crops like Sudex.***

Streambank Erosion – Extensive reaches of streambank erosion in the Black Dirt Region degrade water quality, exacerbate flooding and consume valuable cropland. ***This Plan recommends continuation of ongoing efforts to identify, monitor and prioritize eroding streambank segments. It also recommends accelerated implementation of streambank stabilization projects using natural but effective practices and materials. Opportunities to improve management of the overall riparian corridor (i.e. expanding streamside buffers) should be explored in concert with bank stabilization planning. All agencies with roles and responsibilities related to these channels, including the ACOE's, NYSDEC, County of Orange, OCSWCD, USDA-NRCS, and the four Black Dirt Region towns, should work together to address this issue.***

Horse Farms

Horse operations are a segment of animal agriculture that cannot be ignored in the Wallkill Watershed. ***This Plan recommends accelerated outreach efforts to horse owners to better assess the extent of this industry, and its natural resource management issues and needs.*** Preliminary study indicates high potential for two projects which will be a focus of initial outreach efforts: 1) ***study and actively pursue regional manure management options for horse owners such as composting facilities****, and 2)* ***conduct assessment and planning on lands operated by horse owners to identify 'habitat enhancement opportunities'***, for example, projects that would meet the criteria of programs such as the Wetland Reserve Program (WRP), Wildlife Habitat Incentive Program (WHIP) or Environmental Quality Incentive Program (EQIP).

AEM

The New York State Agricultural Environmental Management Program (AEM) is New York's answer to the Federal Environmental Protection Agency's (USEPA) mandate that all fifty states must come up with a plan to address agricultural non-point source pollution. This program is carried out by the local County Soil and Water Conservation Districts (SWCD's) on behalf of the State Department of Agriculture and Markets.

The New York State AEM program is already being extensively applied by the SWCD's in both Ulster and Orange Counties. These efforts are also being done in association with other local partners such as the USDA Natural Resources Conservation Service (NRCS) and Cornell Cooperative Extension (CCE).

The AEM Program is used to address water quality issues via five stages: Preliminary Information (Tier I); Assessment (Tier II); Planning (Tier III); Implementation (Tier IV); and Monitoring/Evaluation (Tier V). Both County SWCD's are actively engaged with integrating AEM with several cost share funding opportunities that are available through both the Federal and State government.

Other Agriculture

Similar to the Black Dirt Region, erosion is an ongoing resource concern throughout the Watershed. In addition, animal agriculture beyond horse farms (for example, dairy, dairy replacement, beef and miscellaneous other livestock) maintains a respectable position, and demands attention to associated water quality concerns. ***This Plan recommends maintaining strong levels of staff support from SWCD's, USDA-NRCS and Cornell Cooperative Extension to ensure that all interested farmers receive technical support and access to funding opportunities for erosion control, water quality protection, and related natural resource management projects.***

Education and Training

Education and training are functions that happen continuously and informally, as well as in more formal settings such as classroom presentations and workshops. This Plan mentions the importance of education efforts in numerous contexts, for example in the Stormwater Management and Biological Resources sections. ***Education and training should be considered high priority recommendations of the Plan. This Plan further recommends a strong commitment to youth conservation education*** such as that currently demonstrated by Orange County via their Soil and Water Conservation District and Water Authority (numerous other youth conservation education activities occur in the Watershed, but are not detailed here). ***It also recommends accelerated education opportunities for all ages. This last goal could be much advanced by the development of an interpretive center with a focus on the Wallkill River and its Watershed*** as described in more detail in the full version of the Watershed Plan.

Riparian Corridors/Stream Buffers

The character of riparian corridors (areas alongside streams) heavily influences the water quality and overall health of the waterbody they border. Because both riparian corridor infringement and water quality problems have been well documented in the Watershed, project staff mapped the land cover within the corridors of the Wallkill River and its major tributaries. The resulting information led to the identification of areas within riparian corridors that the Plan recommends studying further to determine if conservation, restoration, or mitigation work is needed to maintain or improve the condition of the stream. This project also identified broader trends for stream corridors in the Wallkill, such as the fact that Orange County's Monhagen Brook has the highest percentage of developed/urbanized riparian land (33%) in the Wallkill Watershed. ***The Plan recommends that all municipalities adopt regulations to protect streams from infringement***, specifically through the use of overlay zones, the adoption of a local wetland and watercourse protection law (appendix I), and other measures.

Stormwater Management

Given the current pace of development, stormwater management must be considered a high priority in the Watershed. ***This Plan recommends increased erosion control compliance at constructions sites. Achieving this goal will require expanded staffing at some level, for example the soil and water conservation districts and/or the local municipalities. Also recommended is accelerated stormwater retrofit planning with the goal of generating a list of potential water quality protection projects for***

future funding opportunities. Low impact development and better site design are stormwater-related concepts that are discussed in a separate section of this Plan.

Impervious Surfaces Analysis

Research has clearly demonstrated impacts to aquatic systems, particularly streams, when the percentage of the contributory watershed covered by impervious surfaces exceeds 10%. For watersheds in the 5 to 10 square mile range where percent impervious is approaching or exceeds 10%, management programs must address imperviousness to be effective.

Recently developed computer mapping procedures have allowed an analysis to be made of imperviousness in the sub-watersheds of Wallkill Watershed (see Map 6 in the full Watershed Plan). ***This Plan recommends that future, more detailed watershed planning in sub-watersheds of the Wallkill utilize this mapping work to guide the initial direction of planning efforts.***

Biological Resources

The Wallkill Watershed has an impressive diversity of species and habitats due its geology, climate, and past and current land uses. Research has shown that threatened or endangered species are found throughout the Watershed and that biological diversity is under siege due to many factors, both natural and cultural. ***The Plan recommends that the important habitats outlined in the Plan - especially stream-associated wetlands - be protected. The Plan also advocates for the protection of land surrounding or adjacent to water bodies as well as land that serves to maintain connectivity between large natural areas.*** Little is known about biodiversity in certain regions of the Watershed because little or no scientific research has occurred there. ***The Plan recommends that, while all subwatersheds could benefit from additional research, the Tin Brook, Dwaar Kill, Masonic Creek, and Monhagen Creek be targeted for future biological research.***

Wetlands Degradation

The importance of properly functioning wetlands to the health of watersheds has received extensive attention. These functions include groundwater recharge, flood attenuation, water quality protection and wildlife habitat. ***This Plan recommends compiling existing information and securing new information as necessary to characterize the quality and health of wetlands in the watershed.*** A related recommendation is to ***identify and prioritize candidate wetlands for improvement projects.*** Numerous government programs provide funding and technical assistance for such projects, but accelerated staffing is necessary to utilize these programs to their full potential.

Targeted Assistance to Municipalities

A recurring theme of the full Wallkill Watershed Management Plan is the crucial role that local governments, of which there are 30 in the Watershed, play in land use planning and related decisions that impact watershed health. ***A major recommendation of this Plan, therefore, is to provide targeted technical support to all receptive municipalities in the Watershed. Said support would focus on adoption of local laws, incentive-based programs, conservation project planning and implementation, or other measures that achieve goals of this Plan. A second related recommendation is to foster an affiliation between existing Conservation Advisory Councils (CAC's), lend some staff support to them, and encourage the creation of CAC's where they do not***

currently exist. This is particularly relevant in Orange County where a small number of CAC's exist with little interaction.

Low Impact Development and Better Site Design

Urban development alters the natural landscape in many ways. Creation of impervious surfaces and fragmentation of wildlife habitat are but two examples. Low Impact Development (LID) and Better Site Design (BSD) describe approaches to site design that attempt to minimize these adverse impacts. 'Stormwater treatment trains' is a related term denoting the routing of urban runoff through multiple stormwater treatment practices to increase pollutant removal and more closely approximate natural hydrology. ***This Plan encourages local municipalities to fully explore opportunities to incorporate principles such as LID, BSD and stormwater treatment trains into the site plan approval process, and supports increasing local agency technical support to municipalities to provide education and assistance on these approaches.*** *The counties and the state can support this approach by funding or producing guidance documents, training workshops and other tools for design professionals, developers, and municipal officials.*

Increase Water-related Recreational Opportunities

When people are able to enjoy a water resource through recreational opportunities such as swimming, boating, or fishing, they are more likely to be concerned about the health and welfare of that resource. There are currently 18 sites in Orange and Ulster Counties where the public can access the Wallkill River, but these opportunities are somewhat concentrated geographically. ***The Plan recommends that public access opportunities be established within all six municipalities that flank the Wallkill River but are without public access to the River. The Plan also recommends that public access be established to the major tributaries that are without such opportunities,*** including Rutgers Creek, Pochuck Creek, Quaker Creek, Monhagen Creek, Masonic Creek, and Platte Kill. ***Additionally, the Plan recommends that those municipalities (only three in the Watershed) without public access to a major tributary, lake, or other water resource work to create some type of water-related recreation opportunity.***

Research and Monitoring

This Plan supports increased investments in water resources monitoring systems, including stream gauges, groundwater level monitors, precipitation measurement, and ambient water quality monitoring in rivers, streams and lakes. Initial steps should include establishing a dialogue with NYS DEC and DOH and with USGS regarding technical issues, and Federal and state legislators representing the watershed region regarding funding needs. ***Partnerships with academic institutions, US EPA, NYS DEC and other agencies and organizations should be cultivated to facilitate development of research projects on other priority issues such as biodiversity, land use and environmentally-compatible economic development.***

Water Supply

Water supply projects have historically been planned without much consideration of the potential impacts of water withdrawals and diversions on overall watershed hydrology. Permitting of new wells by the State also has not included consideration of cumulative, watershed-scale effects. ***This Plan supports a more integrated approach to water supply planning and permitting that places a priority***

on limiting the need for new supplies through conservation and efficiency, maintaining in-stream flows, protecting wetlands and groundwater recharge areas, and ensuring that water withdrawals are sustainable for meeting both human and ecological needs over time. Specific measures that can be implemented include:

- Water conservation measures in new development projects to reduce demand,
- Water reuse, including treated wastewater and graywater for irrigation, groundwater recharge, and other uses,
- Site design and community planning strategies that support sustainable watershed goals,
- Water supply development decisions that place greater emphasis on protecting in-stream flows, recharging groundwater, and cumulative impacts of water withdrawals,
- Land use planning, development approvals and other activities that can impact water quality and quantity, including agriculture, discharge permits, road maintenance and others, should be implemented in a watershed framework that recognizes the full lifecycle benefits of protecting water resources, and the costs of compromising these resources.

Protecting Streamflow, Groundwater, Wetlands

As discussed on p. [60] and in other sections of this Plan, existing regulations and other programs are not adequate to protect water quality and quantity in streams, groundwater formations, wetlands, and other water bodies. Unless and until stronger regulatory and policy measures are adopted at the state or Federal level, one of the primary opportunities for improving these protections is more widespread use of local laws and other methods by local government. ***This Plan strongly supports providing more resources to facilitate training, technical assistance, model ordinances, and other elements needed by local government to enable implementation of local laws to preserve stream buffers, aquifer recharge areas, wetlands, and steep slopes, and to protect groundwater and surface water from contamination.***

Wastewater Management

Infiltration and inflow (I&I) of rainwater and groundwater to older sewer systems, which causes wet-weather overflows of inadequately treated sewage, is believed to a fairly widespread problem in the Wallkill Watershed, as it is many other areas as well. Other major problems with wastewater management include the lack of any regulations requiring maintenance of existing onsite septic systems and a lack of resources to support adequate implementation of existing regulations and oversight programs regarding septic system siting and installation. Additionally, the State's approach to permitting and financing small community treatment systems, often called "package plants", allows the use of private entities called Transportation Corporations to build, own and maintain systems, and these systems are very often underfunded and poorly maintained. ***This Plan supports coordinated action to request Federal and state funding to upgrade old wastewater collection and treatment systems.*** At the same time, ***decentralized approaches to wastewater management that combine individual onsite and small community systems should be the preferred option rather than building or expanding larger centralized systems,*** for a myriad of reasons. ***This Plan supports stronger municipal involvement and oversight for all new community systems to ensure that existing and new decentralized systems are constructed and operated properly. It also supports resources to help local municipalities to implement management programs for private septic systems, including inspection and pumpouts.*** The NY State Onsite Training Network and other resources should be utilized and promoted for training of inspectors, designers, installers and maintainers of onsite septic systems. In addition, the county health departments should be given more staff resources for field inspections and other activities needed to ensure that new septic systems are properly sited and installed. There should be better coordination between local government staff (building and code enforcement officials, etc.),

county health departments, and NYS DEC on these issues, including reporting of violations and problems with wastewater systems. Better monitoring and tracking will also be useful, including regular stream biomonitoring to evaluate water quality trends downstream of major discharges, and record keeping and availability of information on existing problems with municipal systems and other permitted discharges.

Local Planning and Regulations

In order to develop an inventory of existing municipal land use goals and regulations, as well as to determine if any generalizations could be made in regards to local environmental regulations within the Watershed, the Planning Departments from Ulster and Orange Counties completed a review of municipal plans and codes of municipalities within the Watershed. The findings led to the recommendation that ***the use of certain zoning techniques, such as overlay zones and incentive zoning, is underutilized in Watershed communities and should be used more frequently to effectively protect natural resources. The Plan recommends that all municipalities adopt the NYS Model Law for Sediment and Erosion and Stormwater and that a responsible party be designated to ensure compliance. The Plan also endorses protection at the local level for wetlands, watercourses, and steep slopes, which are safeguarded in just a handful of municipal codes.***