SECTION 7 – SUMMARY OF RECOMMENDATIONS FOR KEY WATERSHED ISSUES

7.1 Introduction

RCWC hosted two well attended community-based watershed planning workshops held in November of 2009 and February of 2010. As a result of these collaborative processes local community members and stakeholders reached consensus on four key concerns or watershed protection in the Lower non-tidal Rondout Creek Watershed. The identified management areas of concern are stormwater, floodplain, agriculture and forestry, and outreach and education.

In the following sections the recommendations from Sections 3, 4, 5 and 6 have been grouped according to those areas of concern. The details of the outlined recommendations can be found in its cross-referenced section.

7.2 Stormwater Management

- The NYSDEC provides storm water management guidance to municipalities through its "Municipal Separate Storm Sewer Systems" (MS4) program.
    - Public Education and Outreach;
    - Public Involvement/Participation;
    - Illicit Discharge Detection and Elimination;
    - Construction Site Runoff Control;
    - Post-Construction Runoff Control; and
    - Pollution Prevention/Good Housekeeping at municipal sites and operations. (See section 4 for detailed explanation of these 6 practices).

- Other municipalities in the watershed can follow the examples set by Marbletown and Rosendale to educate and involve the public in stormwater issues and implement practices that eliminate illicit discharges and reduce stormwater runoff and resulting non-point source pollution from construction sites, new developments, and municipal operations (see section 4 for examples of what Marbletown and Rosendale are currently doing to control stormwater).

- Conduct water quality assessments up and downstream of SPDES discharges. Assess water quality upstream and downstream of any significant stormwater discharges that are detected, or of stormwater runoff control measures that are implemented. This will help determine whether water quality impacts are coming from point sources or non-point sources of pollution.

- More research on WWTPs as a source of nutrients such as phosphorus. The ISD indicated nutrients as the most common source of impact in the watershed. WWTPs are usually required to remove organic and toxic materials from their effluent, but often not required to remove nutrients such as phosphorus.

- Conduct an assessment of coliform bacteria on the Rondout. Each community along the river could provide input on what areas are used for swimming, and a study could be designed accordingly, using NYS Department of Health standards for coliform bacteria at bathing beaches. This assessment would be especially useful in the High Falls area, where swimming is popular and no water quality assessment has ever been conducted.

- Further study is needed along Sandburg Creek and the Rondout in Wawarsing. A study that included assessments of the Lackawack, Honors Haven, Canal Street, Ellenville WWTP, Eastern Correctional, and Port Ben Road sites, plus an additional site on the Rondout upstream of Sandburg Creek but downstream of the Hamlet of Napanoch, would help determine the following:

    - The level of impact in the Sandburg Creek
    - Where the impact may be coming from (Honors Haven golf course, Village of Ellenville urban runoff, or Ellenville WWTP).
    - The level of impact in the Rondout Creek in Napanoch and East Wawarsing.
    - Where the impact may be coming from (Sandburg Creek, Napanoch area urban runoff, or the Napanoch WWTP).

- Preserve as much undeveloped land as possible during the site design process

- Manage stormwater runoff onsite and take a decentralized approach to wastewater treatment by using Green Infrastructure practices (see section 4.2 for more details)

7.3 Floodplain Management

- Climate change (see section 3.3 for more information about Climate Change)
    - Based on the ClimAID Sea Level Rise Projections, the municipalities of the lower non-tidal Rondout Creek watershed should revise land use and zoning ordinances to require a buffer between mean high water and any proposed structures.
    - Adopt NYS Sea Level Rise (SLR) projections as guideline measures from which to base strategies for addressing climate change and the affects of flooding on land use. Incorporate climate change and increased vulnerability to flooding into local emergency management planning.
    - All communities bordering the Rondout should adopt the Climate Smart Communities Pledge (Appendix I.)
    - Join and be an active member of the Hudson Valley Climate Change Network of the DEC Hudson River Estuary Program
    - Get involved in the 10% Challenge.
    - Pass a local law to insure that the predevelopment runoff must be equal to post development runoff for all proposed projects in your community.

- Require that all proposed development designs include tree plantings to prevent the expansion of impervious surfaces.
- Map vulnerable stream bank areas that need to be revegetated and collaborate with state partners to rehabilitate them over a set period of time.
- Pass a local law to increase the protection of wetlands in your community.
- Engage CACs in reviewing development proposals and providing guidance to the planning board on ways to reduce the impact of development on natural systems.
- Limit development in the 100-year floodplain and/or require developers to show how they will be addressing the projections of sea level rise in their proposal.
- Direct new development away from high risk areas and develop programs to fund elevation and/or relocation of structures or systems in high-risk areas.
- Work on seeking funding through joint projects or proposals with neighboring municipalities.
- Make use of mapping tools to identify at risk areas. Define areas of both greatest current and future vulnerability to flooding with the intent of reducing vulnerability in high-risk areas and transition to long-term cost-effective measures that emphasize natural flood protection systems.

- Biodiversity (see section 3.4 for more detailed information about the importance of biodiversity)
  - Consider habitat and biodiversity concerns early in the planning process.
  - Direct human uses toward the least sensitive areas, and minimize alteration of natural features, including vegetation, soils, bedrock, and waterways.
  - Protect large, contiguous, and unaltered tracts of habitats wherever possible.
  - Protect contiguous habitat areas in large, circular or broadly-shaped configurations within the larger landscape.
  - Preserve links between habitats on adjacent properties via broad connections, not narrow corridors.
  - Create, restore, and maintain broad buffer zones of natural vegetation along streams, along shores of other water bodies and wetlands, and at the perimeter of other sensitive habitats.
  - Maintain buffer zones between development and land intended for habitat.
  - Prioritize higher-quality habitats for protection, as degraded habitats decrease the biological value of the larger ecological landscape.
  - Preserve natural processes such as forest fires, floodplain flooding, and beaver flooding to maintain the diversity of habitats and species dependent on such processes.
  - Preserve farmland potential.
  - Protect habitats associated with resources of special economic, public health, or aesthetic importance to the community. These include aquifers or other sources of drinking water, active farms, and scenic views.
  - In general, encourage development of altered land instead of unaltered land.

- Concentrate development along existing roads; discourage construction of new roads in undeveloped areas.
- Promote clustered and pedestrian-centered development wherever possible, to maximize extent of unaltered land and minimize expanded vehicle use.
- Minimize extent of impervious surfaces (roofs, roads, parking lots, etc.), and maximize onsite groundwater infiltration. Minimize areas of disturbance.

7.4 Riparian Vegetation and Forestry

- Riparian buffers (see section 3.5 for detailed explanation the importance of riparian buffers)
  - Identify and prioritize potential riparian planting sites using a combination of mapping techniques and field surveys.
  - Develop a network of volunteers that can be trained to assist in assessing sites, planting trees along riparian buffers, eradicating invasive species, and monitoring for forest pests such as the Asian longhorned beetle. Establish a subcommittee that focuses on coordinating plantings for target areas, and eradicating invasive species.
  - Develop education programs focused on farmers as well as smaller landowners that raise awareness about best management practices in the riparian areas.
  - Coordinate a Visual Stream Assessment. (The Lower Hudson Coalition of Conservation Districts offers a Streamwalk program http://www.lhccd.org/streamwalk2004.html that a stream assessment can be modeled after.) This will assist in determining location of invasive species as well as potential planting sites in the riparian corridor
  - Use GIS technology to map land use in riparian areas

- Forestry (see section 3.6 for more detailed information about forestry in the Watershed)
  - Educate and promote the use of Best Management Practices (BMPs). These are actions that have been determined to be the most effective and practicable means of preventing negative impacts of silvicultural activities, such as in reducing erosion and sedimentation of water bodies.
  - Municipalities should work toward adopting a current and relevant comprehensive plan. This municipal tool is intended to guide future growth and development as well as identify important natural & cultural resources that should be protected and sustainable managed.
  - Land use ordinances should promote sustainable forestry practices. The biggest single problem ordinance is the one that simply fails to identify forest management and harvesting as allowed uses.
  - Suburban towns are advised to adopt land-clearing standards to help them demonstrate compliance with the Phase II Stormwater requirements of the Clean Water Act.

- The DEC and other professionals recommend that timber harvesting be preceded by a well-thought-out harvest plan that protects soil and water resources and fish and wildlife habitat.

7.5 Outreach and Education

- Create straightforward, easily read maps of the Rondout Creek: (hardcopies as well as via internet)
- Improve communication between stakeholders, policy makers and the general public
- Collaborate with other organizations and municipal groups to incorporate watershed education into pre-existing community events
- Development of a watershed awareness and protection marketing campaign
- Develop on-going educational and volunteer programs
- Service Learning Projects (ex. volunteer water monitoring): Write ups of each
- Identify current and potential access points to the creek to foster recreation