SECTION 8- GUIDE TO IMPLEMENTATION

8.1 Role of RCWC in Implementation

The Rondout Creek Watershed Council is committed to continuing its partnership with the four municipalities of the Lower Non-Tidal portion of the watershed. Hands on collaboration with municipal CAC and ECC's is essential during the implementation phase of this plan in order to create reasonable timelines for all protection efforts. RCWC will continue their ongoing research to identify future funding sources as well as develop programs to cultivate volunteers and watershed internships.

8.2 Trends in Recommendations

Below is a summary of recommendations that were repeated in multiple sections of the management plan. While recommendations specific to different topics are important and should be considered, the authors feel that these recommendations have broad relevance for the entire watershed.

1. Continue to facilitate the functioning of the RCWC and form an intermunicipal council to oversee and coordinate the work that is already being done by the committee.

2. Promote ordinances designed to protect the natural resources of the watershed

3. MS4 communities should continue to work toward meeting all MS4 requirements. Where feasible, towns that are currently not MS4 communities (Wawarsing and Rochester) should adopt regulations under the MS4 program. Specifically, this means implementing Best Management Practices that satisfy the six minimum control measures: 1) Public education and outreach, 2) Public Participation and Involvement, 3) Illicit discharge detection and elimination, 4) Construction Site Runoff Control, 5) Post-Construction Runoff Control, 6) Pollution prevention. (Section 4)

4. Create a Rondout Creek Watershed Atlas using uniform maps that inventories the natural resources in the watershed, identifies areas at risk due to climate change and development, identify access points to the creek and other recreational opportunities, and delineates local watershed boundaries.

5. Use Zoning and Planning tools to manage for open spaces, biodiversity, forestry, agriculture, and the protection of riparian and other sensitive areas. Promote education and outreach specifically to town Planning boards and other municipal advisory groups and agencies.

6. Adopt Better Site Design principles to manage stormwater runoff and reduce impervious surfaces in the watershed.

7. Increase the focus on riparian zones and coordinate efforts to protect these areas throughout the watershed. This includes: mapping and identifying potential sites for restoration, creating zoning that will stop development in the floodplain, reducing impervious surfaces in these areas, increasing education about the importance of these areas.

8. Assure local food security and the rural character that graces much of the landscape in this portion of the watershed by promoting local agriculture and preserving farmland, as well as forestry and other open space, that serve to protect water quality.

9. Promote public education and outreach programs by collaborating with organizations that currently exist to raise awareness and garner support for watershed issues and best management practices. Issues to focus on include: invasive species, non-point source pollution, biodiversity, climate change

10. Intermunicipal collaborations should be explored to identify funding and cost-sharing opportunities that can further this Plan's objectives throughout all four municipalities .

8.3 Promoting Watershed Economy

1. Explore the potential for development of community-endorsed social contract to effectively implement buffer zone management techniques and programs. This can be based on a collaborative approach, which centers on formation of small local groups used to effectively disseminate agroforestry and conservation farming information and technologies. These groups can assist farmers in making effective management decisions and local government in setting priorities, as well as helping to focus research and education related the multiple functions of trees, environmental services, and policy innovations.
2. Office of Employment and Training Summer Youth Employment Program in collaboration with SUNY Ulster has developed a program that engages businesses willing to employ youth for the summer. Local Environmental Conservation Commission or Councils can work with this youth population to further their goals and initiatives for watershed management. The youth wages are paid by American Recovery and Reinvestment Act (stimulus dollars). All that is required is that the business must provide a safe and constructive working environment and adequate supervision.
3. A strong workforce incentive program is the SUNY Workforce Development Grant**,** provides any company with two or more employees the opportunity to apply for a SUNY Workforce Development Grant. The grant requires a cash match of a minimum of 10% of the total amount of funds. The grant is written and administered by Ulster County Community College on behalf of the applicant company. The once-a-year application deadline is usually in June but is somewhat dependent on the state budget. In terms of watershed management this would require a sponsor business to apply hire employees to work toward implementation of watershed initiatives.

4. The Value-Added Producer Grants (VAPG) should be explored as a agro-forestry incentive. The grant can be used for planning activities and for working capital for marketing value-added (to increase the products price or value) agricultural products and for farm-based renewable energy. Eligible applicants are independent producers, farmer and rancher cooperatives, agricultural producer groups, and majority-controlled producer-based business ventures.

8.4 - Comparison of Municipal Natural Resources and Land Use Objectives

The RCWC has reviewed existing management plans, guidelines and ordinances for each municipality. The findings of this review process is a set of recommendations grouped under two categories below: stormwater management and floodplain management. These summarized recommendations were not crafted by the RCWC and were cited from specialized management plans already in existence for each municipal member of the Lower Nontidal IMA. To better compare these findings matrix located at the end of this section was created. The matrix is broken down into the natural resource and land use objectives each town has committed to addressing. RCWC compiled these objectives to assist each municipality in easily identifying the areas in need of improvement, , the objectives that still need to be completed and the progress that has been made. Showcasing each municipality's goals and objectives will also allows for intermunicipal sharing of strategies that are currently in use or in the process of being developed.

Stormwater Management

Marbletown and Rosendale both have ordinances to decrease stormwater runoff and pollution from land development. The reduction of stormwater runoff will reduce flooding, siltation, stream bank erosion and maintain the integrity of stream channels. Marbletown, Rochester, Rosendale, and Wawarsing all acknowledge that development should be concentrated and reduced where possible. Marbletown has its developments in areas that are sensitive to erosion include plans to prevent erosion which none of the other town's have. Rochester acknowledges the need to reduce density where aquifers are sensitive to development but lacks the complete and developed plans to do so. Aquifers need open space above them so they are able to receive water from above ground, and recharge. Building high-density developments on areas that do not contribute to groundwater filtration into aquifers should be encouraged and promoted by the town board and zoning commission. Wawarsing plans have suggested implementing cluster development and zoning in addition to concentrated nodes instead of strip malls. This should be done in conjecture with using smart growth development, which channels development into areas already served by existing infrastructure. In addition to using concentrated nodes, the nodes should only have one entrance and exit to reduce the amount of impervious surfaces within developed areas. Rosendale and Wawarsing have plans that suggest implementing pedestrian centered developments, while all towns suggest concentrating commuter and residential traffic on existing roads. To decrease the amount of roads needed while reducing traffic, locating commercial centers within hamlets will increase pedestrian traffic and reduce the amount of people driving. Rosendale however, includes in their plans to keep a balance of at least fifty

percent of land as development and open space that will help reduce runoff and aid aquifer recharge. To decrease the amount of impervious surfaces within the town, Marbletown and Wawarsing should include this objective in their ordinances, like Rosendale and Rochester. However, Rosendale does have plans to increase onsite runoff retention and infiltration that should be implemented by all towns. Rosendale also realizes the full potential of using their zoning map with their Comprehensive Plan and Open Space plan to prevent development that will damage excising natural resources and impair watershed management.

Floodplain Management

Rosendale, Wawarsing, Marbletown and Rochester all need to plant riparian vegetation that provides a buffer zone of at least 100 feet around all waterbodies, including wetlands, within their town. Planting native flora and fauna will stabilize the stream banks, reduce runoff and erosion and act as a filtration and purification system for any runoff that reaches the waterbody. Marbletown, Rosendale and Rochester all acknowledge the need to control and prevent the alteration of natural floodplains; stream channels and natural protective barriers that reduce flood damage. Rochester proposes achieving this goal through the establishment of local Purchase of Development Rights programs, and Rosendale and Marbletown suggests land use planning to preserve significant and unaltered tracts of land that contain ecological communities and habitats, and open space. Marbletown also has a commission called the Preservation and Investment Commission that will advocate for conservation based development, and educate the public on land protection strategies. Wawarsing, Rosendale and Rochester should consider implementing a board or council to oversee the protection of open space and natural resources. Rosendale included within their plans the goal of restoring degraded habitats wherever possible. Each town should consider including this in their management strategy to improve the environmental quality of the whole town, not just the areas around the waterbodies.

RCIWMP Recommendations

Marbletown, Rochester, Rosendale and Wawarsing need to create a town water budget that will estimate the volume of water that the water table is producing and, has the capacity to produce compared to existing and projected rates of consumption. This will provide the town with an accurate portrayal of the amount of water available to their current residents and the supply available to the future residents. The water budget can help town's determine how changes in impervious surfaces will affect the amount of water available for residents. . The water budget can also provide assistance is the placement of wells because it will identify areas where there are supply problems. The water budget is not limited to municipalities with sewer systems because it focuses on the town's water table, which is how saturated the ground is by water, not how residents use water (Appendix O. Rosendale's Town Plan). Each town's Environmental Conservation Commission can oversee the budget and provide yearly reports back to each town's board. Rochester, Rosendale and Wawarsing need to create an open space plan. Rochester and Wawarsing need to create a biodiversity assessment and maps of the wetlands and floodplains located within the town. Wawarsing also needs to create density maps, land use surveys and maps, a study of the geology and soils found in the town, and a creation of an aquifer map. Wawarsing cannot further their development goals in as sustainable and environmentally friendly manner until they become aware of the unique features of their town. A

part of Marbletown's natural resource objectives was to create a forest plan, which any town with significant amounts of forested land should also do. This will provide town planners and developers with another source of information about the natural resources found in their town. Marbletown, Wawarsing, Rosendale and Rochester should revise their zoning regulations to prevent the spread of impervious surfaces into floodplains and groundwater and aquifer recharge areas. The amendments to the zoning regulations should also include the reduction in use of impervious surfaces when alternatives are unavailable or inappropriate. Also each town's reduction of density where aquifers are located and the use of concentrated nodes instead of strip malls will greatly improve the health of the Rondout Creek Watershed. Rosendale, Rochester, and Wawarsing need to create a management strategy for the protection of wetlands once all of their studies and mapping are completed. One of Rosendale's natural resource objectives is to reduce the amount of pesticides and herbicides that enter the waterbodies located in their town. To accomplish this goal it is recommended that Rosendale and any town with the resources available, offers incentives to any farmers who practice organic agriculture and stop using fertilizers, herbicides and pesticides that degrade the health and quality of the watershed. Marbletown and Rosendale currently follow the MS4 requirements developed by the EPA, and the RCIWMP strongly recommends that Wawarsing and Rochester adopt the MS4 requirements so that the Rondout Creek Watershed is protected as much as possible.

Municipal Resource and Land Use Existing Objectives and RCIWMP Recommendations				
Municipality	**Natural Resource Objectives**	**Land Use Objectives**	**RCIWMP Recommendations**	**Criteria for Evaluating Success**
T/Marbletown	❖ Stabilization of banks through the use of riparian vegetation. ❖ Control the alteration of natural floodplains, stream channels, and natural protective barriers, which can minimize flood damage. ❖ Ensure the protection of native flora and fauna to preserve ecological functioning. ➢ Use of native plants in landscaping ➢ Suitable species selection and species diversity should also be used ❖ Discover ways to reduce wetland fragmentation and preserve buffer zones. ❖ Create program to purchase development rights to sensitive lands. ❖ Preservation and Investment Commission will advocate for conservation based development, educate the public and landowners on land protection strategies. ➢ Provide landowners with conservation funding opportunities ❖ Develop a town forest plan.	❖ Decrease stormwater runoff and pollution from land development to reduce flooding, siltation, stream bank erosion, and maintain the integrity of stream channels ❖ Promote high-density development in development areas. ❖ Development plans in areas sensitive to erosion must include plans to prevent erosion ➢ Prohibit development in high-risk areas. ❖ Require land development activities to follow the requirements of the New York State Department of Environmental Conservation SPDES General Permit for Construction Activities. ❖ Prevention of stormwater runoff from developed areas by maintaining predevelopment conditions. ❖ Continued commuter and residential traffic concentrated on existing high traffic roads.	❖ Continue meeting MS4 requirements ❖ Create a Town Water Budget ➢ Estimates the volume of water that the water table can produce compared to existing and projected rates of consumption. ➢ Designate oversight of budget to the Environmental Conservation Commission. ❖ Reduce density where aquifers are sensitive to development. ❖ Revise zoning regulations to minimize the use of impervious surfaces. ➢ Alternatives to pavement should be adopted if appropriate. ❖ Use concentrated nodes as alternatives to strip malls. ➢ Access to the road from a single site. ❖ Develop timber-harvesting regulations. ❖ Construct buffer zones of 100ft. ❖ Develop a town forest plan	❖ Quarterly reports tracked through municipal CAC ❖ Quarterly reports by the Planning and Zoning Committee. ❖ Citizens are kept up to date on progress.

Municipal Resource and Land Use Existing Objectives and RCIWMP Recommendations				
Municipality	**Natural Resource Objectives**	**Land Use Objectives**	**RCIWMP Recommendations**	**Criteria for Evaluating Success**
T/Rochester	❖ Produce a set of maps of the wetlands and floodplains found in the town. ❖ Establishment of local Purchase of Development Rights programs and/or Transfer of Development Rights programs to preserve farmland and open spaces. ❖ Create standards to protect surface water quality and stream bank protection. ❖ Control the alteration of natural floodplains, stream channels, and natural protective barriers, which can minimize flood damage.	❖ Reduce density where aquifers are sensitive to development. ❖ Build houses and business at the edges of fields. ❖ Use concentrated nodes as alternatives to strip malls. ➢ Access to the road from a single site. ❖ Revise zoning regulations to minimize the use of impervious surfaces. ❖ Continued concentration of high intensity traffic on high intensity roads.	❖ Adopt MS4 requirements and practices ➢ Create stormwater management ordnance(s). ❖ Create a Town Water Budget ➢ Estimates the volume of water that the water table can produce compared to existing and projected rates of consumption. ➢ Designate oversight of budget to the Environmental Conservation Commission. ❖ Promote high-density development in development areas. ❖ Revise logging regulations to ensure residents cannot cut down trees that serve important ecological roles (e.g. riparian vegetation) ❖ Ensure the protection of native flora and fauna to preserve ecological functioning. ➢ Create riparian zones of 100 ft ➢ Use of native plants in landscaping ➢ Suitable species selection and species diversity should also be used ❖ Generate an open space plan and a biodiversity assessment. ➢ Produce a set of maps of the wetlands and floodplains found in the town.	❖ Quarterly reports tracked through municipal CAC ❖ Quarterly reports by the Planning and Zoning Committee ❖ Citizens are kept up to date on progress.

Municipal Resource and Land Use Existing Objectives and RCIWMP Recommendations				
Municipality	**Natural Resource Objectives**	**Land Use Objectives**	**RCIWMP Recommendations**	**Criteria for Evaluating Success**
T/Rosendale	❖ Implement the creation and maintenance of riparian vegetation. ❖ Careful planning of development to minimize biological stress on streams ❖ Preserve significant tracts of ecological communities and habitats. ➢ Land use planning to maintain large uninterrupted and unaltered habitat areas ▪ Safeguard links between habitats on adjacent properties ❖ Restore degraded habitats wherever possible ❖ Prevention of herbicides and pesticides from entering any reservoirs or waterways.	❖ Decrease stormwater runoff and pollution from land development to reduce flooding, siltation, stream bank erosion, and maintain the integrity of stream channels ❖ Facilitate pedestrian centered developments ➢ Connect districts by sidewalks and bike trails. ❖ Concentrate development along existing roads. ➢ Defer construction of new roads in undeveloped areas ➢ Keep balance of land, at least 50 percent, whenever feasible as open space ❖ Minimize areas of impervious surfaces ➢ Increase onsite runoff retention and infiltration. ❖ Utilize zoning map to provide insight into how development can affect existing natural resources and watershed management. ➢ Use to update the Comprehensive Plan and Open Space Planning. ❖ Apply non-regulatory tools to protect open spaces. ❖ Voluntary conservation easements, direct acquisition of land by government or conservancies.	❖ Continue Meeting MS4 requirements. ❖ Create Town Water Budget ➢ Estimates the volume of water that the water table can produce compared to existing and projected rates of consumption. ➢ Designate oversight of budget to the Environmental Conservation Commission ❖ Reduce density where groundwater is sensitive to development. ❖ Create a management strategy for the protection of wetlands ➢ Buffer zones around wetlands and streams of 100 feet. ❖ Amend zoning regulations to prevent the spread of impervious surfaces into floodplains and groundwater recharge areas. ➢ Revise zoning regulations to minimize the use of impervious surfaces. ➢ Alternatives to pavement should be adopted if appropriate. ❖ Promoting the use of organic agriculture practices to limit the use of pesticides and herbicides. ❖ Create an Open Space Plan	❖ Quarterly reports tracked through municipal CAC ❖ Quarterly reports by the Planning and Zoning Committee. ❖ Citizens are kept up to date on progress.

Municipal Resource and Land Use Existing Objectives and RCIWMP Recommendations				
Municipality	**Natural Resource Objectives**	**Land Use Objectives**	**RCIWMP Recommendations**	**Criteria for Evaluating Success**
T/Wawarsing	❖ Preserve agricultural and wooded areas. ❖ Protect natural waterways ❖ Create and maintain riparian buffers.	❖ Promote cluster development and zoning. ❖ Incorporate pedestrian access within hamlets. ❖ Implement conservation subdivision process. ➢ Include information to protect waterways, scenic areas and natural resources. ❖ Encourage smart growth which channels development into areas already served by existing infrastructure. ➢ Include pedestrian access, and bike trails. ▪ Expand bike paths so residents can use bikes for recreation and transportation. ❖ Replace strip malls with concentrated nodes with one entrance. ❖ Require shared driveways, and internal circulation roads to direct and reduce traffic to specific areas. ❖ Locate existing commercial centers within hamlets to reduce traffic and increase pedestrian traffic. ❖ Develop integrated network of local roads instead of multiple cul-de-sacs	❖ Adopt MS4 requirements and practices ➢ Create stormwater management ordnance(s). ❖ Create a Town Water Budget ➢ Estimates the volume of water that the water table can produce compared to existing and projected rates of consumption. ➢ Designate oversight of budget to the Environmental Conservation Commission. ❖ Amend zoning regulations to prevent the spread of impervious surfaces into floodplains and groundwater recharge areas. ➢ Minimize use of impervious surfaces when appropriate. ❖ Develop management plans. ➢ Open Space, Biodiversity Index ❖ Include information into the zoning map to create a more comprehensive tool for planning ❖ Creation of density maps, land use surveys and maps ❖ Commission study of geology and soils present in the town ❖ Authorize creation of aquifer map ➢ Reduce density where groundwater is sensitive to development.	❖ Quarterly reports tracked trough municipal CAC ❖ Quarterly reports by the Planning and Zoning Committee. ❖ Citizens are kept up to date on progress.