
**IDENTIFICATION AND DESCRIPTION OF
MANAGEMENT PRACTICES,
APPROACHES AND STRATEGIES FOR
WATERSHED PROTECTION AND
RESTORATION & IMPLEMENTATION
STRATEGY AND SCHEDULE**

Identification and Description of Management Practices, Approaches and Strategies for Watershed Protection and Restoration & Implementation Strategy and Schedule

This planning matrix, known more formally as the *Identification and Description of Management Practices, Approaches and Strategies for Watershed Protection and Restoration & Implementation Strategy and Schedule*, represents the culmination of deep research into the current conditions of Oatka Creek, both in the stream itself and across its surrounding watershed. The matrix shows specific steps and strategies needed to complete an action, the groups responsible for completing the actions, and the timeline by which the tasks must be completed.

The matrix includes priority assignments, actions, objectives, steps, strategies, anticipated reductions and water quality improvements, benefits, related issues, lead organizations, potential funding sources, long- and short-term measures, approximate cost, and regulatory approvals in the following areas of concern for Oatka Creek:

- Coordination, collaboration, and partnership recommendations
- Agriculture
- Stormwater management and erosion control
- Forestry and silviculture management
- On-Site Wastewater Management Systems (OWTS)
- Wastewater Treatment Systems and Management
- Hazardous Waste Management
- Roads and Highways
- Wetlands, Riparian Zones, and Floodplains
- Reduce nutrient inputs and contaminants to surface waters
- Natural resource and habitat protection
- Regulatory management

The *Identification and Description of Management Practices, Approaches and Strategies for Watershed Protection and Restoration & Implementation Strategy and Schedule* was reviewed by the PAC on April 17, 2014 and subsequently revised prior to prioritization by the Oatka Creek Watershed Committee on May 19, 2014. The PAC then reviewed the final draft of the *Identification and Description of Management Practices, Approaches and Strategies for Watershed Protection and Restoration & Implementation Strategy and Schedule*, Watershed Management Plan introduction, and draft Intermunicipal Organization Memorandum of Understanding (IO MoU) at the July 16, 2014 meeting. The draft Watershed Management Plan was then reviewed and revised based on input from the second Public Meeting on August 28, 2014 and approved September 25, 2014.

Recommendations have been developed in order to address a number of areas of concern. The matrix in this section represents the culmination of years of deep research into the current conditions of Oatka Creek. The matrix includes recommendations that are presented in the *Regulatory and Programmatic Environment Report* section, and shows specific steps and strategies needed to complete an action, the groups responsible for completing the actions, and the timeline by which the tasks must be completed.

The matrix includes priority assignments, actions, objectives, steps, strategies, anticipated reductions and water quality improvements, benefits, related issues, lead organizations, potential funding sources, long- and short-term measures, approximate cost, and regulatory approvals in the following areas of concern for Oatka Creek:

Coordination, Collaboration & Partnership Recommendations – This set of recommendations addresses the need for improved collaboration amongst watershed municipalities, citizens and stakeholders; addresses the need for continuous water resource related monitoring activities; and

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identifies specific educational opportunities that exist. The strongest recommendations are to present information on achievements in watershed planning to municipal boards and to develop an intermunicipal organization. Shared practice allows for better design, better maintenance, and economic incentives that can deliver higher performance and lower cost.

Agriculture – Farming can have a negative effect on water quality through erosion of crop land, sedimentation, and runoff contaminated with fertilizers or animal wastes. This section includes some of the highest prioritized actions of all the recommendations in the watershed, including the creation of riparian buffer zones around streams adjacent to agricultural land, the encouragement of farm participation in NYS Agricultural Environmental Management (AEM) program and the development of Comprehensive Nutrient Management Plans (CNMPs) tailored to all farms in the watershed.

Stormwater Management & Erosion Control – Stormwater runoff contains pollutants such as nutrients, pathogens, sediment, toxic contaminants, and oil and grease, resulting in water quality problems. This section's highest recommendation is to restore severely eroded streambank segments, focusing on restoring these critical processes that form, connect, and sustain habitats. Protecting these stream banks is vital to controlling sediment loading and maintaining the rock structures. Vegetation helps prevent erosion. Thus the other highest priority in this category is the revision of land use laws to require new developments to maintain the volume of runoff at predevelopment levels by using structural controls and pollution prevention strategies.

Forestry and silviculture management – Loss of large trees to the creek and poor maintenance of existing trees along the creek edge highlights one of the top overall recommendations in the watershed: the encouragement of private landowners to apply sound forest management practices based on the NYS Forestry Best Management Practices for Water Quality guide. Sustainable forestry balances preserving the integrity of our forests with economic development and maintaining our diverse wildlife population while minimizing damage to the agriculture and rural communities. An array of tools is available from the New York State Cooperative Forest Management Program.

On-Site Wastewater Management Systems (OWTS) – The number one source of nonpoint source pollution in New York State is on-site wastewater treatment systems. The highest recommendation in this category is to secure a funding stream to bring substandard septic systems into compliance, based on the classification of substandard OWTS. Substandard OWTS are defined as systems that are piped directly to surface waters, in close proximity to the surface or groundwater, or discharging directly to the surface.

Wastewater Treatment Plant Systems (WWTPS) – One of the highest overall recommendations for the Oatka Creek watershed is to upgrade some WWTPs to tertiary treatment or consider closing and transferring sanitary flows. Further specific recommendations pertaining to wastewater treatment systems and management can be found in the Identification and Description of Management Practices, Approaches and Strategies for Watershed Protection and Restoration & Implementation Strategy and Schedule section.

Hazardous Waste Management – Highly-ranked priorities in the Oatka Creek watershed are determining the location of inactive or unpermitted landfills; implementing a watershed-wide hazardous waste pick-up or drop-off; and preventing discharge of pharmaceuticals through community collection programs and by promoting best management practices and process changes at health care institutions, livestock and food industries, and other manufacturers. Educating the public and providing an opportunity to safely dispose of hazardous products keeps dangerous wastes out of landfills, lowering the environmental risks associated with improper disposal.

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Roads and Highways – The highest-ranked priority in this section is educating municipal and county highway departments on ditch and culvert design and stream bank stabilization methods. Paved development has the highest coefficient of runoff, and thus highway departments have a very important role in preserving watershed quality.

Wetlands, Riparian Zones, and Floodplains – Floodplains act as a check valve for streams; they allow water to be slowed down, to dissipate energy after a rainstorm or snow melt. The original analysis of the 100-year base flood elevation developed for the *Oatka Creek Watershed Characterization Report* indicated that 4.4% of the total land areas within the Oatka Creek watershed are within this zone, known as a Special Flood Hazard Area (SFHA). FEMA’s 2014 draft Discovery report indicates an average annualized loss of \$5.7B concentrated around Oatka Creek, Black Creek, the Genesee River, and Spring Creek, making this a critical recommendation area both environmentally and economically. The highest recommendation under this heading is for all municipalities that do not presently deal sufficiently with flood plain development within local law to adopt ordinances prohibiting development in 100-year floodplain, and further restricting the location of barnyards and manure pits.

Regulatory management – The highest recommendation is for the enforcement of the aforementioned floodplain development controls. Two other highly prioritized regulatory recommendations pertain to the building blocks of local land use: zoning and comprehensive plans. The highest recommendation is to adopt stream buffer setbacks to reduce the amount of harmful runoff and sedimentation caused by land use activities, achieved through an environmental protection overlay district (EPOD) or setbacks from waterbodies within the zoning code. Another highly prioritized action is the drafting (or revision) of comprehensive plans in municipalities without one, emphasizing the protection of local water resources and recognizing the importance of watershed planning efforts within the Oatka Creek watershed and other neighboring watersheds within the municipality. A number of municipalities within the watershed are utilizing obsolete or incomplete comprehensive plans.

Nutrient and contaminant inputs to surface waters – Continuing the emphasis on nutrient loading and sediment reduction strategies, this section covers recommendations ranging from the highest prioritized action, the development of nutrient and sediment reduction strategies for Oatka Creek sub-watersheds, to community outreach about green chemistry, safe disposal of household hazardous waste, and the assessment of contaminants present in fish and wildlife populations.

Natural Resource and Habitat Protection – The highest ranked priority is the preparation and implementation of a comprehensive invasive species management plan as well as leadership and support for further research and monitoring to improve early detection and management of invasive species. The Finger Lakes PRISM (Partnership for Regional Invasive Species Management) is a cooperative partnership in central New York focused on reducing the introduction, spread, and impact of invasive species through coordinated education, detection, prevention and control measures.

Priority	Action	Objective	Steps (e.g., feasibility, design, permitting, construction)	Strategy	Anticipated Reductions	WQ Improvements	Benefits	Related Issue(s)	Lead and Potential Responsible Organization(s) (including sponsor, partners)	Potential Funding Sources	Measures/Targets (e.g., short-, medium-, or long-term)	Approximate Cost	Regulatory Approvals
Coordination, Collaboration & Partnership Recommendations													
High	Short presentation to municipal boards on watershed plan	coordination, collaboration, partnership	prepare presentation highlighting achievements thus far, future opportunities and areas for improvement	Get on the agenda to discuss in all Oatka Creek Watershed municipalities	N/A	potentially high	educating a broad range of people to help carry out best practices	water quality, education	G/FLRPC, WQCC, OCWC, SCMC, FLOWPA, SWCD	Environmental Protection Fund	100% within one year	\$9,500	N/A
High	Development of an Intermunicipal Organization (IO)	coordination, collaboration, partnership	final MOU, municipal presentations, municipal approval	Intermunicipal Organization (IO) Memorandum of Understanding (see Appendix)	N/A	potentially high	facilitate partnership across political boundaries to promote the ecological vitality of the Oatka Creek Watershed	water quality, education	OCWC, Monroe, Genesee, Livingston, and Wyoming Counties and municipal governments that geographically fall within the Oatka Creek Watershed	Local Government Efficiency Program	all municipalities signed on to MOU	\$2,500	all municipalities signed on to MOU
Medium	Provide opportunities for citizens to volunteer for specific projects	coordination, collaboration, partnership	coordination with OCWC, WQCC, SCMC	Get on the agenda to discuss at OCWC, WQCC, SCMC meetings	project-dependent	project-dependent	project-dependent	water quality	OCWC, FLOWPA, SWCD, SCMC	N/A	Increase number of volunteers by 10% within a year	\$2,500	N/A
Medium	Increase participation in volunteer monitoring program such as NYSDEC's WAVE program	strengthen local capacity for successful management and protection of watersheds by empowering volunteers	Training to be held in Wayne and Wyoming Counties in May and June of 2014	recruit participants with chemical, physical, and biological sciences background	N/A	potentially high	enable citizen scientists to collect biological data for assessment of water quality on wadeable streams	water quality	NYSDEC WAVE program, CCE, OCWC, WQCC, SWCD, SCMC	NYSDEC, CFA	Increase number of volunteers by 10% within 1 year	N/A	N/A
Medium	Identify stakeholders with respect to specific priority issues, such as local roads management, and facilitate funding applications to support joint projects	coordination, collaboration, partnership	coordination with OCWC, WQCC, SCMC	Develop benchmarks and criteria for measuring progress	project-dependent	project-dependent	project-dependent	water quality	G/FLRPC, OCWC, FLOWPA, SCMC	Local Government Efficiency Program	Identify 3 significant joint projects and seek funding within one year	\$1,500	N/A
Low	Apply for funding to implement local 2009 New York State Open Space Conservation Plan Priority Projects (or 2014 plan, currently in draft form; this or any subsequent draft)	protect priority projects	Bergen Swamp, Genesee River Corridor, The Genesee Valley Greenway (GVG), Ecological Corridors, Exceptional Forest Communities, Grassland Preservation and Restoration (specifically in the Towns of Covington and Middlebury in Wyoming County)	a combination of state and local acquisition, land use regulation, smart development decisions, land owner incentives and other conservation tools used in various combinations, will be needed to succeed in conserving these open space resources for the long term	project-dependent	potentially high	project-dependent	open space, water quality, recreation	NYSDEC, G/FLRPC, OCWC, FLOWPA, SCMC, Bergen Swamp Preservation Society	CFA, NYS Environmental Protection Fund Title 9 funding to local governments	one priority project per year	\$20,000-\$2M	possible
Low	Initiate a process to further engage the County WQCCs and the Stormwater Coalition, including brief presentation about the county water quality strategies and current projects of the committee; b) identification of common goals and efforts; and c) application for joint funding to conduct work across the watershed	coordination, collaboration, partnership	coordination with OCWC, WQCC, SCMC	Get on the agenda to discuss at OCWC, WQCC, SCMC meetings	N/A	advance county water quality strategies	advance county water quality strategies	water quality, education	WQCC, OCWC, SWCD, SCMC, FLOWPA	Local Government Efficiency Program	100% within one year	\$2,500	all municipalities signed on to MOU
Agriculture													
Highest (*Top 5 overall)	Create and maintain riparian buffer zones for streams adjacent to agricultural land starting with the critical areas	Town of Chili, Village of Scottsville, Town of Wheatland, Town of Bergen, Town of Bethany, Town of Byron, Town of LeRoy, Village of LeRoy, Town of Pavilion, Town of Stafford, Town of Caledonia, Village of Caledonia, Town of Covington, Town of Gainesville, Town of Orangeville, Town of Perry, Town of Middlebury, Town of Warsaw, Village of Warsaw, Village of Wyoming	reduce heavy use pastured/barnyard areas in the riparian buffer in the Pearl Creek (30.1%) and White Creek (30.4%) subwatersheds, the two most impaired tributaries to Oatka Creek.	implement agricultural best management practices	potentially high	potentially high	water erosion control, wind erosion control, improved soil tilth, improved water quality and stream health	agriculture, stormwater, drinking water, water quality, sediment	USDA, NRCS, SWCD, CCE, landowners	cost-sharing for this program may be available through the Conservation Reserve Program	x% of defined critical areas within 10 years	\$1,000,000	municipalities
High	Encourage all farms throughout the watershed to participate in AEM and implement BMPs	implement agricultural best management practices	Tier 1, 2, 3 and 3A , 4, 5 AEM plans	complete farm planning on all AEM farms	based on plan adoption	potentially high	improve profitability and competitiveness of farms while protecting the environment	agriculture, development, sustainability	SWCD, CCE, USDA, NRCS, landowners, academic institutions	NYS DAM, NRCS, SWCD	% of farms in AEM program tiers 3-5	determined by tier	determined by tier

Priority	Action	Objective	Steps (e.g., feasibility, design, permitting, construction)	Strategy	Anticipated Reductions	WQ Improvements	Benefits	Related Issue(s)	Lead and Potential Responsible Organization(s) (including sponsor, partners)	Potential Funding Sources	Measures/Targets (e.g., short-, medium-, or long-term)	Approximate Cost	Regulatory Approvals
High	Encourage all farms in the Oatka Creek watershed to develop a Comprehensive Nutrient Management Plan (CNMP) that meets the provisions of NRCS/New York State Standard 590	A Comprehensive Nutrient Management Plan includes specific recommendations tailored to individual producers and the conditions of soil type, drainage, cropping practices, and livestock density.	Encourage farms that need the plan to do it - look for funding to do this	Practices are selected based on site-specific conditions of soil type, topography, drainage, cropping practices, and livestock density.	based on plan adoption	potentially high	balance nutrients entering and leaving farms	agriculture, stormwater, drinking water, water quality, nutrient loading, pathogens, education, sustainability	SWCD, CCE, USDA, NRCS, landowners, certified planners, private consultants, Cornell Nutrient Management Spear Program	NYS Agricultural Nonpoint Source Abatement & Control Grant Program	% of farms in AEM program tier 2	\$20/acre without soil testing	N/A
Medium	Preserve high quality and unique agricultural areas by guiding non-agricultural development into other areas of the watershed	Town of Chili, Town of Riga, Village of Scottsville, Town of Wheatland, Town of Bergen, Town of Bethany, Town of Byron, Town of LeRoy, Village of LeRoy, Town of Pavilion, Town of Stafford, Town of Caledonia, Village of Caledonia, Town of Covington, Town of Gainesville, Town of Orangeville, Town of Perry, Town of Middlebury, Town of Warsaw, Village of Warsaw, Village of Wyoming	actively identify and protect prime soils, encourage cluster development and transfer/purchase of development rights (TDR/PDR), update subdivision standards	Create land use policies and zoning regulations that support the economic viability of agriculture	potentially high	potentially high	NYSDAM PDR program will not only protect water quality but also protect farmland	agriculture, development, sustainability	WQCC, SWCD, County Farmland Protection Boards, municipalities, G/FLRPC, City of Rochester	NYSDAM, NRCS, SWCD	acres of farmland recovered	N/A	municipalities, NYSDAM
Medium	Implement vegetated filter strips (edge of field solutions) where appropriate	define and protect critical areas	help farms enter AEM program to take advantage of this technology	slow runoff from fields, trapping and filtering sediment, nutrients, pesticides and other potential pollutants before they reach surface waters	based on plan adoption	project-dependent	lower nutrient loadings	agriculture, stormwater, drinking water, water quality, sediment	USDA, NRCS, SWCD, CCE, landowners	cost-sharing for this program may be available through the Conservation Reserve Program	x% of defined critical areas within 10 years	\$1,000,000	N/A
Medium	Identify or develop and distribute public information materials that discuss agricultural issues of concern to the entire watershed community	Develop educational materials for agricultural producers and the community at large	research available materials and customize to suit Oatka Creek	illustrate the factors affecting farm size, regulatory and voluntary measures to control agricultural pollution, and the relationships between agriculture and other amenities such as open space	N/A	potentially high	educating a broad range of people to help carry out best practices	agriculture, tourism, comprehensive planning, education	OCWC, agricultural boards, SWCD, counties, American Farmland Trust	NYSDAM, NRCS, SWCD	3 articles submitted to various media per year	\$2,000	N/A
Medium	Document and disseminate successful strategies for nutrient management, manure handling, and erosion control	develop educational materials for agricultural producers and the community at large	research available materials and customize to suit Oatka Creek	Consider publishing reports in trade journals for the dairy industry.	N/A	potentially high	educating a broad range of people to help carry out best practices	agriculture, stormwater, drinking water, water quality, nutrient loading, pathogens, sediment, education, sustainability	SWCD, CCE, USDA, NRCS, landowners, academic institutions, Nutrient Management Spear Program	NYSDAM, NRCS, SWCD	Distribute information to farms participating in AEM type programs within 2 years	\$1,500	N/A
Low	Promote nutritional management as a tool to optimize feed efficiency and ultimately reduce nutrient content of animal waste	implement agricultural best management practices	reduction of P in dairy rations to levels recommended by the National Research Council, fitting P ratio into management plan	proactive agricultural and environmental management	The 2002 statewide P balance decreased from +7.2 to +4.3 lb/acre when improvements in dairy nutrition were taken into account	potentially high	balance nutrients entering and leaving farms	agriculture, stormwater, drinking water, water quality, nutrient loading, pathogens, education, sustainability	SWCD, CCE, USDA, NRCS, landowners, Cornell Nutrient Management Spear Program	Nutrient management (590) cost sharing may be available through USDA NRCS Environmental Quality Incentives Program (EQIP) or Ag Nonpoint Source programs	100% of livestock operations by 2016	\$35,000	N/A
Low	Ensure appropriate point source permits for nutrients are implemented and enforced for CAFOs within watershed	implement agricultural best management practices	research current point source permits for nutrients	decrease nutrient loadings	potentially high	project-dependent	lower nutrient loadings	agriculture, stormwater, drinking water, water quality, sediment	NYSDEC, SWCD	Environmental Protection Fund	CAFO farms kept up to date with annual DEC and EPA CAFO compliance reporting requirements	unknown	N/A
Low	Consider the feasibility of technologies that reduce the mass of animal waste material to be handled, particularly collaborative anaerobic digesters	capture livestock waste and convert to energy for heat and/or electricity; on-farm digestion would be preferred and the nutrients should stay in the same watershed they are generated in as much as possible	feasibility studies	Utilize NYSERDA PON 2828 \$2 million in New York State Renewable Portfolio Standard (RPS) funding available through 2015 to support the installation and operation of Anaerobic Digester Gas (ADG)-to-Electricity Systems	project-dependent	project-dependent	potentially high	agriculture, stormwater, drinking water, tourism, water quality, nutrient loading, pathogens, sustainability	NYSERDA, NYSDAM, SWCD, WQCC, CCE, Cornell Manure Management, landowners	NYSERDA PON 2828 \$2 million in New York State Renewable Portfolio Standard (RPS) funding is available through 2015 to support the installation and operation of Anaerobic Digester Gas (ADG)-to-Electricity Systems	number of farms using waste for power by 2020	engineering and project development \$300,000	N/A

Priority	Action	Objective	Steps (e.g., feasibility, design, permitting, construction)	Strategy	Anticipated Reductions	WQ Improvements	Benefits	Related Issue(s)	Lead and Potential Responsible Organization(s) (including sponsor, partners)	Potential Funding Sources	Measures/Targets (e.g., short-, medium-, or long-term)	Approximate Cost	Regulatory Approvals
Low	Expand agricultural and soil health initiatives that provide technical assistance and incentives to implement practices such as cover cropping, nutrient management, conservation tillage, conservation cropping systems	improve profitability and competitiveness of farms while protecting the environment	research existing institutional offerings and body of research	utilize research done by Monroe, Genesee, Livingston, and Wyoming County SWCDs, Cornell nutrient management, soil science, etc.	potentially high	potentially high	Improve soil health to increase infiltration/water retention capacity; reduce stormwater runoff	agriculture, stormwater, drinking water, tourism, water quality, nutrient loading, pathogens, sustainability	NRCS, SWCDs, NYSDAM, CCE, Cornell Nutrient Management Spear Program	cost-sharing for this program may be available through the Conservation Reserve Program, GLRI	one priority project per year	\$50,000	N/A
	Install exclusion fencing to keep livestock from critical areas, including streams and other water bodies	implement agricultural best management practices	identify critical areas	AEM program	based on plan adoption	potentially high	improved water quality and stream health	agriculture, stormwater, drinking water, water quality, sediment	NRCS, SWCD, landowners	cost-sharing for this program may be available through the Conservation Reserve Program, GLRI	100% of critical areas protected by 2020	3-5 strand HT is the minimum allowed by NRCS standards for critical area fencing for all livestock other than dairy cows; rates run \$1.80-\$2.50 for foot depending on post spacing	N/A
	Plant cover crops in regions with high leaching potential where nutrients need to be controlled.	implement agricultural best management practices	select cover crop types and varieties adapted to the region	Cover crops recycle nutrients that might otherwise be lost to leaching during the winter and spring.	Past research has shown that fields with winter cover plowed under in the spring have 55 percent less water runoff and 50 percent less soil loss annually than do fields with no winter cover	potentially high	water erosion control, wind erosion control, improved soil tilth, improved crop yield	agriculture, stormwater, drinking water, water quality, nutrient loading, pathogens, education, sustainability	SWCD, CCE, USDA, NRCS, landowners	Nutrient management (590) cost sharing may be available through USDA NRCS Environmental Quality Incentives Program (EQIP) or Ag Nonpoint Source programs	Identify 3 significant joint projects and seek funding within one year	\$40-\$70-per-acre range	N/A

Stormwater Management & Erosion Control

Highest (*Top 5 overall)	Restore very severe streambank segments using ecologically-based stream restoration	focus on restoring processes that form, connect, and sustain habitats	debris removal, develop inventory and assessment protocol, prioritize remediation efforts, identify potential solutions including stream corridor/watershed management techniques and/or in-stream restoration techniques, train volunteer assessors	by highest Erosion Potential Index Number	reduced erosion, sedimentation	potentially very high	Ecologically-based stream restoration uses a mosaic of in-stream, riparian and watershed management and restoration techniques to reduce or eliminate stress on streams and improve ecosystem functions.	agriculture, stormwater, drinking water, water quality, sediment	SWCD, CCE, Great Lakes Commission, landowners, municipalities	GLRI	3 miles/year for 10 years	\$50-\$100/foot	N/A
	Require new developments to maintain the volume of runoff at predevelopment levels by using structural controls and pollution prevention strategies	Town of Chili, Town of Riga, Village of Scottsville, Town of Wheatland, Town of Bergen, Town of Bethany, Town of Byron, Town of LeRoy, Village of LeRoy, Town of Pavilion, Town of Stafford, Town of Caledonia, Village of Caledonia, Town of Covington, Town of Gainesville, Town of Orangeville, Town of Perry, Town of Middlebury, Town of Warsaw, Village of Warsaw, Village of Wyoming	Provide municipalities with draft language.	Integrate into all zoning, subdivision, and/or site plan review controls	reduction of the total water quality volume by application of green infrastructure techniques and stormwater best management practices	reduction of sedimentation and runoff	Minimizing erosion to protect habitat and reduce stress on natural water systems by preserving steep slopes in a natural, vegetated state.	development, stormwater, drinking water, water quality, comprehensive planning	GFLRPC, county planning, municipalities	stormwater management fees calculated using a formula based on the square footage of impervious surface per lot	20% in 5 years of ones that presently do not have controls	combine with other tasks that revise local codes for efficiency. In combination with other local codes. \$15,000	municipal
	adoption of a Stormwater Management & Erosion Control Local Law and the enforcement of performance standards	Integrate into all zoning, subdivision, and/or site plan review controls: Town of Bergen, Town of Byron, Town of LeRoy, Village of LeRoy, Town of Covington, Town of Gainesville, Town of Orangeville, Town of Perry, Town of Middlebury, Town of Warsaw, Village of Warsaw, Village of Wyoming	Provide municipalities with draft language for zoning laws.	Sample Local Law for Stormwater Management and Erosion & Sediment Control	reduction of the total water quality volume by application of green infrastructure techniques and stormwater best management practices	reduction of erosion and sedimentation	reduction of large, impermeable parking lots and buildings to contribute more since they generate a disproportionate amount of runoff	development, stormwater, drinking water, water quality, comprehensive planning	GFLRPC, county planning, municipalities	GLRI	20% in 5 years of municipalities that presently do not have controls	\$50,000	municipal
Medium	Update and apply for funding (e.g. Great Lake funding) for <i>Identification and Analysis of the Riparian Corridor in the Black & Oatka Creek Watersheds</i>	Maintain consistent and regular testing for comparison and monitoring	coordination with OCWC, WQCC, SCMC	Review and update existing streambank erosion assessments. Monitor and remediate (streambank stabilization) existing prioritized sites	N/A	necessary data	data to evaluate the health of the watersheds	coordination, collaboration, partnership	counties, municipalities, G/FLRPC, SWCD, BCWC, OCWC, , SCMC, WQCC, CCE, academic institutions	LWRP, Cleaner Greener Phase II	secure funding by 2016	\$20,000	N/A

Priority	Action	Objective	Steps (e.g., feasibility, design, permitting, construction)	Strategy	Anticipated Reductions	WQ Improvements	Benefits	Related Issue(s)	Lead and Potential Responsible Organization(s) (including sponsor, partners)	Potential Funding Sources	Measures/Targets (e.g., short-, medium-, or long-term)	Approximate Cost	Regulatory Approvals
Medium	Provide education and training of local officials on erosion controls and stormwater management	strengthen local capacity for successful management and protection of watersheds by empowering decisionmakers	coordination with OCWC, WQCC, SCMC	begin with towns with most severely degraded streambank segments	N/A	high	reduced erosion, sedimentation	stormwater, drinking water, water quality, education	NYSDOS, NYSDEC, counties, municipalities, G/FLRPC, SWCD, , SCMC, WQCC, CCE, academic institutions	LWRP, Cleaner Greener Phase II	number of trainings held annually	\$2,500	N/A
Low	Revise land use laws to limit development on slopes greater than 10%	limiting disturbance to consolidated areas of disturbance on the areas of least slope and to minimize changes in grade, cleared area, and volume of cut or fill on the site	Provide municipalities with draft language for zoning laws	Apply to existing natural or constructed slopes. Portions of project sites with slopes up to 20 feet in elevation, measured from toe (a distinct break between a 40% slope and lesser slopes) to top, that are more than 30 feet in any direction from another slope greater than 15% exempt from the requirements, although more restrictive local regulations may apply	reduced runoff	Improved water quality	better site planning, better design standards, conservation of natural areas and sensitive lands, buffering water resources	development, site planning, design standards	GFLRPC, county planning, municipalities	LWRP, Cleaner Greener Phase II	On-going - Long Term	combine with other tasks that revise local codes for efficiency. In combination with other local codes. \$15,000	Each municipality to adopt amendments to zoning law.
Low	Conduct additional research into identification of effective IC within the urbanized areas	Villages of Warsaw, LeRoy, Caledonia and Scottsville	Identify the specific locations where impervious surfaces are contiguous and directly tied to adjacent waterbodies	These particular areas could be targeted for stormwater retrofit and mitigation projects in order to eliminate or reduce the negative impacts that they have on local aquatic health.	reduce impervious cover	Improved water quality	better site planning, better design standards, conservation of natural areas and sensitive lands, buffering water resources	development, comprehensive planning, site planning, design standards	GFLRPC, county planning, municipalities	LWRP, Cleaner Greener Phase II	Identify 3 significant joint projects and seek funding within one year	\$10,000	N/A
Low	Create green infrastructure standards and integrate into site plan review criteria	Assist Town of Chili, Town of Riga, Village of Scottsville, Town of Wheatland, Town of Bergen, Town of Bethany, Town of Byron, Town of LeRoy, Village of LeRoy, Town of Pavilion, Town of Stafford, Town of Caledonia, Village of Caledonia, Town of Covington, Town of Gainesville, Town of Orangeville, Town of Perry, Town of Middlebury, Town of Warsaw, Village of Warsaw, Village of Wyoming	adoption of a Stormwater Management & Erosion Control Local Law and the enforcement of performance standards	Low Impact Development, such as Bioswales (roadside ditches) and bioretention areas (sunken gardens), French drains (retention trenches) and brick and cobblestone streets (pervious pavers); identify existing ponds/basins and retrofit them to enhance their performance and bring them to current standards	reduce impervious cover	potentially high	better site planning, better design standards, conservation of natural areas and sensitive lands, buffering water resources	development, comprehensive planning, site planning, design standards	counties, municipalities, G/FLRPC, SWCD, , SCMC, WQCC, CCE, academic institutions	USEPA, NYSDEC	% pervious surfaces	combine with other tasks that revise local codes for efficiency. In combination with other local codes. \$25,000	municipal

Forestry & Silviculture Management

Highest (*Top 5 overall)	Encourage private landowners to apply sound forest management practices to woodlands: NYS Forestry Best Management Practices for Water Quality	preserving the integrity of our forests balanced with economic development and maintaining our diverse wildlife population while minimizing damage to the agriculture and rural communities	apply forestry best management practices	sustainable forestry management, plan for conservation easements, protecting water quality and the forest and soil resources	project-dependent	project-dependent	Protecting water quality, forest and soil resources are among the most important aspects of a successful and environmentally sustainable timber harvest	stormwater, drinking water, water quality, sediment, education, sustainability	NYSDEC, CCE, Cornell Agroforestry Research Center, GFLRPC, municipalities, landowners	federal Stewardship Incentives, Forestry Incentives, Tree Assistance and Conservation Reserve Programs	Ongoing as appropriate for the program	N/A	N/A
Low	Coordinate with the New York State Cooperative Forest Management Program administered by the NYSDEC	preserving the integrity of our forests balanced with economic development and maintaining our diverse wildlife population while minimizing damage to the agriculture and rural communities	plantation establishment and care, the marking of timber, marketing assistance and silvicultural treatment of immature stands	sustainable forestry management, plan for conservation easements, protecting water quality and the forest and soil resources	project-dependent	project-dependent	increasing contact between landowners and professional foresters promotes wise stewardship of forest land	stormwater, drinking water, water quality, sediment, education, sustainability	NYSDEC, CCE, Cornell Agroforestry Research Center, GFLRPC, municipalities, landowners	federal Stewardship Incentives, Forestry Incentives, Tree Assistance and Conservation Reserve Programs	Ongoing as appropriate for the program	\$3,000	N/A

On-Site Wastewater Management Systems (OWTS)

High	Secure a funding stream to bring substandard septic systems into compliance	Identification and assessment of on-site waste water systems	research funding opportunities	Classify substandard OWTS. Substandard OWTS are defined as systems that are piped directly to surface waters, in close proximity to the surface or groundwater, or discharging directly to the surface	10% of phosphorus in Oatka Creek	potentially high	Reduce nutrient and pathogen runoff into groundwater and surface waters	OWTS, water quality, drinking water, education, pathogens	NYSDOH, SWCD, WQCC, county health department, county planning department	Clean Water State Revolving Fund (CWSRF)	x number of systems improved by 2016	unknown	N/A
Medium	Revise land use laws to require infiltration rates (perc. tests) for new development in areas without public sewer service	elevate quality of future OWTS, consider in relation to agricultural practices, land uses, and development	Require identification of Karst ideas in SEQR and site plan review process, using already available bedrock geology maps	consider that there are soils with not enough perc, soils that have too much perc	potentially high	water quality restoration	Carefully directing development in soils with high runoff potential	site planning, design standards, open space	NYSDOH, SWCD, WQCC, county health department, county planning department	LWRP, Cleaner Greener Phase II	Medium Term	\$25,000	Each municipality to adopt amendments to zoning law
Medium	Implement and promote programs to encourage homeowners to adopt best practices for septic system maintenance	educating a broad range of people to help carry out best practices	identify experts in OWTS and organize sessions	Contractors and others associated with septic system design and construction, municipal officials (elected, planning, zoning), homeowners	N/A	high	Reduce nutrient and pathogen runoff into groundwater and surface waters	OWTS, water quality, drinking water, nutrient loading, pathogens, education	NYSDOH, SWCD, WQCC, county health department, county planning department	unknown	50 homeowners and 30 professionals trained within 4 years	\$5,000	N/A

Priority	Action	Objective	Steps (e.g., feasibility, design, permitting, construction)	Strategy	Anticipated Reductions	WQ Improvements	Benefits	Related Issue(s)	Lead and Potential Responsible Organization(s) (including sponsor, partners)	Potential Funding Sources	Measures/Targets (e.g., short-, medium-, or long-term)	Approximate Cost	Regulatory Approvals
Low	Hold educational/ training sessions targeted towards OWTS installers, owners, and municipal officials	elevate quality of future OWTS	identify experts in OWTS and organize sessions	Contractors and others associated with septic system design and construction, municipal officials (elected, planning, zoning), homeowners	N/A	potentially high	Onsite systems are effective when properly designed, installed and maintained.	OWTS, water quality, drinking water, nutrient loading, pathogens, education	G/FLRPC, CCE, SWCD, WQCC, counties, municipalities,	unknown	50 homeowners and 30 professionals trained within 4 years	\$7,500	N/A
Low	Adopt uniform sanitary law throughout the Oatka Creek Watershed based on the Ontario County model or the model Local Law for On-Site Individual Wastewater Treatment	Assist Town of Chili, Town of Riga, Village of Scottsville, Town of Wheatland, Town of Bergen, Town of Bethany, Town of Byron, Town of LeRoy, Village of LeRoy, Town of Pavilion, Town of Stafford, Town of Caledonia, Village of Caledonia, Town of Covington, Town of Gainesville, Town of Orangeville, Town of Perry, Town of Middlebury, Town of Warsaw, Village of Warsaw, Village of Wyoming	Residences within 200 feet of streams should be considered in a critical environmental zone and subject to more frequent inspection. Substandard systems in this zone should be required to install holding tanks until systems can be brought into compliance.	Examine pros and cons of existing uniform sanitary laws in the region and in other collaborative septic programs	potentially very high	potentially very high	Reduce effluent disposal	OWTS, water quality, drinking water, education, pathogens	NYSDOH, SWCD, WQCC, county health department, county planning department	LWRP, Cleaner Greener Phase II	all towns signed onto uniform agreement by 2020	\$15,000	municipalities
Low	Host technology transfer workshops for those responsible for evaluating alternative and innovative OWTS technologies	elevate quality of future OWTS	coordination with PAC, OCWC, WQCC, SCMC	Target audience is local code enforcement officers, design professionals, and representatives of State and County Health Departments	Reduce nutrient and pathogen runoff into groundwater and surface waters	potentially very high	Onsite systems are effective when properly designed, installed and maintained.	OWTS, water quality, drinking water, education, pathogens	NYSDOH, SWCD, WQCC, county health department, county planning department, CCE	OTN	Workshop offered watershed-wide annually through 2016	\$12,000	N/A

Waste Water Treatment Plant Systems (WWTPS)

Highest (*Top 5 overall)	Upgrade WWTP to tertiary treatment or consider closing and transferring sanitary flows	Village of LeRoy, Village of Warsaw, Town of Pavilion	evaluate existing wastewater infrastructure issues	Five-Year Capital Improvement Plan (CIP)	potentially high	potentially high	Reduce nutrient and pathogen runoff into groundwater and surface waters	water quality, comprehensive planning	G/FLRPC, WQCC, OCWC, SCMC, FLOWPA, SWCD	Clean Water State Revolving Fund (CWSRF)	upgrades complete by 2020	\$60,000	NYSDEC, municipalities, counties
Medium	locate and identify combined sewer overflows (CSOs)	CSOs are a major or contributing cause to precluded, impaired, stressed or threatened best usage in many receiving waters	identify regional experts in CSOs, such as Onondaga County's Save the Rain program	comprehensive stormwater management plan	high	CSOs may contribute significantly to receiving water degradation	project-dependent	water quality, drinking water, nutrient loading, pathogens, education, sustainability, infrastructure	G/FLRPC, WQCC, , OCWC, SCMC, FLOWPA, SWCD	Clean Water State Revolving Fund (CWSRF)	upgrades complete by 2020	unknown	NYSDEC, municipalities, counties
Medium	Educate the general public on the role, process, accomplishments, needs, and future strategy of sewer districts and wastewater treatment facilities.	educating a broad range of people to help carry out best practices	identify experts in WWTPs, such as Ithaca WWTP operator Dan Ramer	stakeholder discussions to consider the potential for the effects of increased population growth and associated increased point source loading	N/A	N/A	educating a broad range of people to help carry out best practices	OWTS, water quality, drinking water, nutrient loading, pathogens, education, sustainability, infrastructure	NYSDEC, , CCE, SWCD, WQCC, educational institutions, wastewater treatment facilities, , county health departments, county planning departments, municipalities	LWRP, Cleaner Greener Phase II	Target high priority communities beginning in year 1. Offer assistance and materials as appropriate.	\$10,000	N/A
Medium	Complete a characterization of WWTP effluent to assess levels of contaminants that are discharged	Assessment/Research	Quantify contaminant levels discharged from WWTPs	stakeholder discussions to consider the potential for the effects of increased population growth and associated increased point source loading	N/A	N/A	project-dependent	water quality, drinking water, nutrient loading, pathogens, education, sustainability, infrastructure	NYSDOH, NYSDEC	Clean Water State Revolving Fund (CWSRF)	complete characterization	\$50,000	N/A

Hazardous Waste Management

Medium	Conduct a study to determine the location of inactive or unpermitted landfills, dumps and hazardous material storage, as well as mined lands and petroleum bulk storage facilities	Determine dates of operation, the type of materials disposed at each and the vulnerability of water resources	develop inventory and assessment protocol, prioritize remediation efforts, identify potential solutions	Expand on list of Oatka Creek DEC Hazardous Waste Sites in Characterization Table 4.26	unknown	project-dependent	project-dependent	drinking water, water quality, pathogens, fertilizers, pesticides, organic compounds	USEPA, USGS, NYSDEC, SWCD, WQCC, GLOW Region Solid Waste Management Committee	NYSDEC	100% of counties and municipalities surveyed	\$40,000	N/A
Medium	Implement watershed-wide pickup of hazardous wastes and obsolete/canceled use pesticides using the "Clean Sweep" model	reduce hazardous wastes in watershed	schedule pickups and publicize	coordination with OCWC, WQCC, SCMC	potentially high	potentially high	By providing the public with an opportunity to safely dispose of such hazardous products, we keep these products out of landfills and lower the environmental risks associated with such improper disposal.	agriculture, stormwater, drinking water, water quality, fertilizers, pesticides, organic compounds	NYSDEC, SWCD, CCE, landowners	NYSDEC administers state assistance programs for household hazardous waste (HHW) programs. Funding is provided on a 50% reimbursement rate for eligible costs.	regular program for hazardous waste disposal	\$120,000	N/A
Medium	Prevent discharge of pharmaceuticals through community collection programs and by promoting best management practices and process changes at health care institutions, livestock and food industries, and other manufacturers	Education/Outreach	work with community partners to identify pharmaceutical drop off programs and locations	Promote new drop-off at Monroe County EcoPark Special Collections	discharges of pharmaceutical chemicals and by-products are reduced	lower toxic chemical burden in organisms in watershed	less potential harmful impacts from chemicals	drinking water, fish, wildlife, human health	NYSDEC, NYSDOH, communities, OCWC, WQCC	unknown	reduced chemical discharges into air, water, soil	unknown	N/A

Priority	Action	Objective	Steps (e.g., feasibility, design, permitting, construction)	Strategy	Anticipated Reductions	WQ Improvements	Benefits	Related Issue(s)	Lead and Potential Responsible Organization(s) (including sponsor, partners)	Potential Funding Sources	Measures/Targets (e.g., short-, medium-, or long-term)	Approximate Cost	Regulatory Approvals
Low	Distribute hazardous spills information throughout the watershed to various community groups, fire departments, chamber of commerce, citizens, municipalities with names and numbers of the agencies and staff in charge and who has appropriate jurisdiction in emergency situations	strengthen local capacity for successful management and protection of watersheds by empowering decisionmakers	identify experts in hazardous waste management and organize sessions	organize sessions	N/A	N/A	strengthen local capacity for successful management and protection of watersheds by empowering decisionmakers	drinking water, water quality, organic compounds, education	NYSDEC, county planning department, county health department, SWCD, WQCC, emergency management organizations (EMOs)	unknown	number of trainings held annually	\$2,500	N/A
Low	Identify or develop public educational materials to describe landfill issues, such as the difference between old and new types of landfills, threats to public health and water quality, and the need to ensure that sites are closed properly	educating a broad range of people to help carry out best practices	research available materials and customize to suit Oatka Creek	utilize and distribute research, organize training sessions	N/A	N/A	strengthen local capacity for successful management and protection of watersheds by empowering decisionmakers	drinking water, water quality, pathogens, fertilizers, pesticides, organic compounds, education	USEPA, USGS, NYSDEC, counties	unknown	Identify resources and share locations on web site and with collaborating agencies (6 months).	\$3,000	N/A
Low	All wells to be tested with any transfer of property regardless of mortgage/sale requirements	Reduce number of contaminated wells	provide draft language (Schuyler County model) and have counties provide support/funding for this testing	reduction in contaminants	see reductions	Improved water quality	Reduce potential for groundwater contamination	drinking water, water quality, organic compounds, education	WQCC, SWCD	County funded	Medium Term	TBD	County Legislation

Roads and Highways

Medium	Educate municipal and county highway departments on ditch and culvert design and stream bank stabilization methods.	Education of DOT's, Highway superintendents	Provide education to those working on ditch, culverts and streams	reduced runoff, sedimentation	project-dependent	Improved water quality	reduced erosion, sedimentation	design standards	SWCD, NYSDOT, County DOT, Highway Superintendents	604(b), WQIP	Medium Term	\$5,000/year	N/A
Medium	Require special vegetative measures such as hydroseeding and mulching of roadside swales based on purchasing and sharing of hydroseeder and training and education of municipal, county, and state highway departments	repair cut, bare, and collapsing banks, exposed roots, and blow-out holes in ditch bottoms and gully erosion	assessment of most severe sites	Initial hydroseeding should occur on the very severe sites, based on a roadbank inventory	estimated soil erosion rates of 100 to 200 tons per bankside mile	potentially high	reduced erosion, sedimentation	development, stormwater, drinking water, water quality, sediment, comprehensive planning	NYSDOT, counties, municipalities	604(b), WQIP	20% of very severe ditches/year	\$150,000	N/A
Medium	Increase training for highway officials in erosion control, hydroseeding, and road deicing	Education of DOT's, Highway superintendents, and Soil and Water conservation	Provide education to those working on ditch, culverts and streams	reduced runoff, sedimentation	project-dependent	project-dependent	reduced erosion, sedimentation	education	G/FLRPC, NYSDOT, counties, municipalities	604(b), WQIP	Medium Term	\$5,000/year	N/A
Medium	Install recreational access to stream at bridge crossings with new construction or repair	increase pedestrian connectivity to recreational areas	coordinate with NYSDOT to determine construction schedule and advocate for recreational access	Increase the connectivity of parks, trails, and natural areas to form a well-established network of interconnected green space	N/A	unknown	recreation, connectivity, green matrix, network	development, comprehensive planning, site planning, design standards	NYSDOT, counties, municipalities, tourism boards, PAC, NYS Parks and Trails	LWRP, Cleaner Greener Phase II, NYSDOT Scenic Byways	N/A	unknown	NYSDOT, municipalities
Low	Conduct a follow-up salt survey study to determine the location of salt storage and application practices in the Oatka Creek Watershed	reduce the threat to the chemical and physical characteristics of the creek and reduce pollution of groundwater	develop (or assess previous) survey, identify municipal and private salt storage facilities, gather responses	reduce impact of salt application, mixing, or storing on Oatka Creek	potentially high	potentially high	reduction of threat to the chemical and physical characteristics of the creek and reduce pollution of groundwater	water quality	G/FLRPC, NYSDOT, counties, municipalities	LWRP, Cleaner Greener Phase II	long-term reduction of salt-only road de-icing, shift to more holistic approach	\$15,000	N/A
Low	Use sensible de-icing material application procedure (e.g. intersections, posting of signs, driver education)	Develop guidelines and implement sensible deicing procedures	educate on best management practices for winter maintenance, including a salt management plan, development of an anti-icing strategy, and precision application techniques	Focus on hydrologically-connected roads – roads that are designed to contribute surface flow directly to a drainage channel – which have the greatest potential to deliver road-derived contaminants to streams	potentially high	potentially high	balancing cost with temperature at application	stormwater, drinking water, water quality, education	NYSDOT, counties, municipalities, highway departments	604(b), WQIP	long-term reduction of salt-only road de-icing, shift to more holistic approach	depends on materials used	highway departments

Wetlands, Riparian Zones, and Floodplains

High	All municipalities that do not presently deal sufficiently with flood plain development within local law should adopt ordinances prohibiting development in 100-year floodplain and restrict location of barnyards and manure pits	Assist Town of Chili, Town of Riga, Village of Scottsville, Town of Wheatland, Town of Bergen, Town of Bethany, Town of Byron, Town of LeRoy, Village of LeRoy, Town of Pavilion, Town of Stafford, Town of Caledonia, Village of Caledonia, Town of Covington, Town of Gainesville, Town of Orangeville, Town of Perry, Town of Middlebury, Town of Warsaw, Village of Warsaw, Village of Wyoming	draft language, request review by NYSDAM if there is concern about conflict with existing Right to Farm law	reduce loss caused by floods and prevent animal waste from entering water bodies	potentially high	Improved water quality and diminished losses	Improved water quality and diminished losses	agriculture, development, stormwater, drinking water, water quality, organic compounds, fertilizers, pesticides, heavy metals, nutrient loading, pathogens, sediment, comprehensive planning	municipalities, landowners	EPA, 604(b), WQIP	20% within 5 years	combine with other tasks that revise local codes for efficiency. In combination with other local codes. \$15,000	Adoption and enforcement of strategy by each municipality and/or each county.
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Priority	Action	Objective	Steps (e.g., feasibility, design, permitting, construction)	Strategy	Anticipated Reductions	WQ Improvements	Benefits	Related Issue(s)	Lead and Potential Responsible Organization(s) (including sponsor, partners)	Potential Funding Sources	Measures/Targets (e.g., short-, medium-, or long-term)	Approximate Cost	Regulatory Approvals
Medium	Inventory all wetlands in watershed to establish priorities. Restore degraded wetlands (based on watershed-wide analysis of potential benefit to water quality, habitat, and hydrology)	Inventory all wetlands in watershed to establish priorities	prioritize wetlands for restoration	develop inventory and assessment protocol, prioritize remediation efforts, train volunteer assessors	absorb the forces of flood and tidal erosion to prevent loss of upland soil	potentially high	Protection of the areas surrounding wetlands improves the functions of the wetland	agriculture, development, stormwater, drinking water, water quality, organic compounds, fertilizers, pesticides, heavy metals, nutrient loading, pathogens, sediment, comprehensive planning	NYSDEC, USEPA, SWCD, NRCS	Environmental Protection Fund	20 acres/year at \$5,000/acre	\$50,000	N/A
Regulatory Management													
Highest (*Top 5 overall)	Enforce floodplain development regulations	Reduce loss caused by floods.	Flood/Hazard mitigation strategy and code enforcement	Reduction of loss due to flood as well as erosion and sedimentation due to flooding	see reductions	Improved water quality and diminished losses	Improved water quality and diminished losses	agriculture, development, stormwater, drinking water, water quality, organic compounds, fertilizers, pesticides, heavy metals, nutrient loading, pathogens, sediment, comprehensive planning	County Emergency Management Councils, County Planning	EPA, 604(b), WQIP	Medium Term	TBD	Adoption and enforcement of strategy by each municipality and/or each county.
High	Adopt stream buffer / riparian setback regulations.	Town of Chili, Town of Riga, Village of Scottsville, Town of Wheatland, Town of Bergen, Town of Bethany, Town of Byron, Town of LeRoy, Village of LeRoy, Town of Pavilion, Town of Stafford, Town of Caledonia, Village of Caledonia, Town of Covington, Town of Gainesville, Town of Orangeville, Town of Perry, Town of Middlebury, Town of Warsaw, Village of Warsaw, Village of Wyoming	Provide municipalities with draft language for zoning laws.	Reduce the amount of harmful runoff and sedimentation caused by land use activities.	potentially high	Improved water quality	reduced erosion, sedimentation	Site Planning, design standards and Ag planning	G/FLRPC, County planning offices, municipal planning boards, Agricultural Protection Boards	LWRP, 604(b), WQIP, GLRI	Medium Term	combine with other tasks that revise local codes for efficiency. In combination with other local codes. \$15,000	Each municipality to adopt amendments to zoning law.
Medium	Draft (or revise) a comprehensive plan emphasizing the protection of local water resources and recognizing the importance of watershed planning efforts within the Oatka Creek watershed and other neighboring watersheds within the municipality	Assist Town of Bergen, Village of LeRoy, Town of LeRoy, Town of Pavilion, Town of Caledonia, Village of Caledonia, Town of Covington, Town of Gainesville, Town of Perry, Town of Middlebury, Town of Warsaw, Village of Warsaw, Village of Wyoming	charrettes, gather widespread public input, draft initial comprehensive plan as strategic document that sets out the broad goals and vision of the community	adoption of a comprehensive plan	N/A	potentially high	public engagement with plan development process and solidification of watershed management and related topics such as water quality, stormwater management, and erosion and sediment control as municipal priorities	water quality, comprehensive planning	G/FLRPC, counties, municipalities	NYSERDA Cleaner Greener Communities program	updated comprehensive plans and zoning	\$5,000-\$100,000	municipalities
Medium	Counties and municipalities should consider agricultural protection and preservation while addressing associated land conservation and water quality concerns though various county, state and federal programs	review existing regional programs, collaboratives, and case studies for guidance	PAC should help to develop methods to assist in implementation of plans	conservation easements, viewshed analysis, scenic preservation, rural design guidelines, tax districts	potentially high	potentially high	strengthen local capacity for successful management and protection of watersheds by empowering decisionmakers	agriculture, development, tourism, comprehensive planning, sustainability, economic development	counties, municipalities	NYSDAM	Updated farmland and agricultural protection plans	\$25,000	N/A
Low	All municipalities that have land use control ordinances should require review of disturbances within 100 ft of all natural wetlands and all municipalities should prohibit discharge of stormwater to wetlands without prior treatment	Assist Town of Chili, Town of Riga, Village of Scottsville, Town of Wheatland, Town of Bergen, Town of Bethany, Town of Byron, Town of LeRoy, Village of LeRoy, Town of Pavilion, Town of Stafford, Town of Caledonia, Village of Caledonia, Town of Covington, Town of Gainesville, Town of Orangeville, Town of Perry, Town of Middlebury, Town of Warsaw, Village of Warsaw, Village of Wyoming	preservation of wetlands as natural habitat for many species of plants and animals and for critical flood and stormwater control functions	evaluate through GIS and EAF Mapper by parcel, integrate into all zoning, subdivision, and/or site plan review controls	absorb the forces of flood and tidal erosion to prevent loss of upland soil	potentially high	Protection of the areas surrounding wetlands improves the functions of the wetland	agriculture, development, stormwater, drinking water, water quality, organic compounds, fertilizers, pesticides	municipalities, landowners	N/A	all municipalities with wetlands adjacent to riparian corridors	N/A	municipalities
Low	Each municipality and county agency should educate themselves about specifics of federal and state regulations and programs, and funding as they relate to nonpoint source pollution and water quality.	strengthen local capacity for successful management and protection of watersheds by empowering decisionmakers	coordination with PAC, OCWC, WQCC, SCMC	Representative of each municipality attend 2-3 workshops per year	potentially high depending on funding acquired	project-dependent	strengthen local capacity for successful management and protection of watersheds by empowering decisionmakers	agriculture, development, stormwater, drinking water, water quality, OWTS, wastewater treatment, water quality standards, education	, OCWC, FLOWPA, county, municipalities	unknown	Representative of each municipality attend 2-3 workshops per year	\$300 per municipality per year	N/A

Priority	Action	Objective	Steps (e.g., feasibility, design, permitting, construction)	Strategy	Anticipated Reductions	WQ Improvements	Benefits	Related Issue(s)	Lead and Potential Responsible Organization(s) (including sponsor, partners)	Potential Funding Sources	Measures/Targets (e.g., short-, medium-, or long-term)	Approximate Cost	Regulatory Approvals
Low	All municipal elected officials, enforcement officers, highway superintendents, boards, and related professional staff should attend training on Stormwater Phase II state and federal regulations	strengthen local capacity for successful management and protection of watersheds by empowering decisionmakers	coordination with PAC, OCWC, WQCC, SCMC	Representative of each municipality attend 4 workshops per year	N/A	project-dependent	strengthen local capacity for successful management and protection of watersheds by empowering decisionmakers	agriculture, development, stormwater, runoff, drinking water, water quality, sediment, erosion	county, municipalities	unknown	Four workshops a year	\$6,000	N/A
Low	Municipalities consider adoption of aquifer protection laws.	Protect the drinking water from harmful contaminants.	Provide municipalities with draft language for land use law.	Protected water	Less water quality issues	Improved water quality	Improved water quality	water quality, comprehensive planning	G/FLRPC, County planning offices, municipal planning boards	LWRP, Cleaner Greener Phase II	Medium Term	Combine with other recommended land use law updates	Each municipality to adopt an aquifer protection law.
Low	Municipalities should encourage alternative agricultural uses of land within comprehensive planning and zoning structure	Update comprehensive plans and zoning to reflect this	review existing regional programs, collaboratives, and case studies for guidance	cluster subdivisions, LEED-ND	N/A	potentially high	public engagement with plan development process and solidification of watershed management and related topics such as water quality, stormwater management, and erosion and sediment control as municipal priorities	agriculture, development, tourism, comprehensive planning, sustainability, economic development	counties, municipalities	NYSERDA Cleaner Greener Communities program	updated comprehensive plans and zoning	\$5,000-\$100,000	municipalities, counties, NYSDAM
Low	open space conservation	site planning, design standards	site plan standards, decrease minimum lot sizes, increase density, cluster subdivisions, buffing water courses	Develop site plan standards including minimum lot size, increased density, cluster subdivision, and water course setback standards and options	Stormwater runoff, sediment, nutrients, reduce habitat fragmentation and degradation	potentially high	conservation of open space and farmland, water quality restoration	development, open space, local laws, design standards	County planning, regional planning, municipalities, PAC, Genesee Land Trust	LWRP	Developed land, farmland, residential density, infrastructure, water quality	\$200,000	local law updates

Nutrient and contaminant inputs to surface waters

High	Develop nutrient and sediment reduction strategies for sub-watersheds	Monitoring/Planning	coordination with PAC, OCWC, WQCC, SCMC	regular monitoring of phosphorus and suspended solids	Stormwater runoff, sediment, nutrients	potentially high	Reduced nutrient and sediment loadings	water quality, sediment	NYSDEC, SWCD, PAC, OCWC, WQCC, SCMC	GLRI	% reduction	\$75,000	N/A
Medium	Identify areas of contaminated sediments and groundwater, and quantify discharge to Oatka Creek	Monitoring/Planning	Remediation of contaminated areas	Develop benchmarks and criteria for measuring progress	Stormwater runoff, sediment, nutrients	advance county water quality strategies	Reduced nutrient and sediment loadings	water quality, sediment	NYSDEC, research institutions	unknown	development of database	\$150,000	N/A
Medium	Ensure safe disposal of e-waste and household hazardous waste through community education and collection programs, and the promotion of product stewardship initiatives	educating a broad range of people to help carry out best practices	Promote proper waste disposal	organize annual (or more frequent) events	reduction of pollutants entering Oatka Creek	advance county water quality strategies	improved water quality and stream health	water quality, collaboration, education	NYSDEC, OCWC, WQCC, SWCD, FLOWPA, G/FLRPC, SCMC, academic institutions, Monroe County Environmental Services, GLOW	Environmental Protection Fund	# of participants	N/A	unknown
Low	Assess concentrations and significance of contaminants such as pesticides, trace metals, and persistent organic pollutants in fish, wildlife, and vulnerable fish-consuming populations	Monitoring/Planning	Better understanding of legacy and emerging contaminant exposure levels, and the sub-watershed and temporal trends of contaminants	recruit participants with chemical, physical, and biological sciences background	N/A	potentially high	improved water quality and stream health	water quality, collaboration	NYSDEC, NYSDOH, NYSERDA, academic institutions	Environmental Protection Fund	development of database	unknown	N/A
Low	Ensure information about no P fertilizers is distributed and known	educating a broad range of people to help carry out best practices	research available materials and customize to suit Oatka Creek	distribute widely through Oatka Creek watershed	N/A	potentially high	strengthen local capacity for successful management and protection of watersheds by empowering decisionmakers	water quality, nutrient loading, education	CCE, Planning, SWCDs	Environmental Protection Fund	web hits, events attended, # participants	\$2,500	N/A
Low	Provide outreach and education to community, schools, and other institutions on green chemistry, green engineering, and other pollution prevention practices	Education/Outreach	Pollution prevention practices are implemented by target groups	distribute widely through Oatka Creek watershed	N/A	potentially high	strengthen local capacity for successful management and protection of watersheds by empowering decisionmakers	water quality, collaboration, education	NYSDEC, NYSPPI, SWCD, WQCC	Environmental Protection Fund	web hits, events attended, # participants	\$2,500	N/A

Natural Resource and Habitat Protection

Medium	Prepare and implement a comprehensive invasive species management plan	Early detection of species may prevent full invasion	Target highly probable areas	join the New York State Invasive Species Task Force, OCWC leadership receive training on Invasive Species Identification and Reporting for http://www.nyimapinvasives.org/	N/A	potentially high	Prevent ecosystem function disruption - e.g., disruption of native species	water quality, sustainability	Invasive Species Taskforce NYSDEC, Partnerships for Regional Invasive Species Management (PRISM), OCWC, WQCC, SWCD, FLOWPA, G/FLRPC, Invasive Species Research Institute (ISRI)	EPA, 604(b), WQIP	reduction in new invasives per year	\$50,000	N/A
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Priority	Action	Objective	Steps (e.g., feasibility, design, permitting, construction)	Strategy	Anticipated Reductions	WQ Improvements	Benefits	Related Issue(s)	Lead and Potential Responsible Organization(s) (including sponsor, partners)	Potential Funding Sources	Measures/Targets (e.g., short-, medium-, or long-term)	Approximate Cost	Regulatory Approvals
Low	Establish a permanent leadership structure to coordinate invasive species efforts	Early detection of species may prevent full invasion	Target highly probable areas	join the New York State Invasive Species Task Force, OCWC leadership receive training on Invasive Species Identification and Reporting for http://www.nyimapinvasives.org/	N/A	N/A	Prevent ecosystem function disruption - e.g., disruption of native species	water quality, sustainability	Invasive Species Taskforce NYSDEC, Partnerships for Regional Invasive Species Management (PRISM), OCWC, EPA, 604(b), WQIP WQCC, SWCD, FLOWPA, G/FLRPC, Invasive Species Research Institute (ISRI)		reduction in new invasives per year	\$5,000	N/A

Appendix
OATKA CREEK WATERSHED MANAGEMENT PLAN
MEMORANDUM OF UNDERSTANDING
FOR OATKA CREEK WATERSHED MUNICIPALITIES

This Memorandum of Understanding is among the four counties (Genesee, Livingston, Monroe and Wyoming) and municipal governments with jurisdictions that geographically fall within the Oatka Creek Watershed in the Finger Lakes Region of New York.

I. INTRODUCTION & BACKGROUND:

The Oatka Creek Watershed Management Plan was funded by a Local Waterfront Revitalization Grant (LWRP) through New York State Department of State. The work of the Oatka Creek Watershed Management Plan was overseen by a Project Advisory Committee and coordinated with the Oatka Creek Watershed Committee. With the culmination of the Oatka Creek Watershed Management Plan, it is in the best interest of the water quality of Oatka Creek to form an intermunicipal organization of the four counties and municipal governments within the Oatka Creek Watershed to implement the recommendations of the Oatka Creek Watershed Management Plan.

II. RECITALS:

1. Each of the parties of this MOU is a local government or County having jurisdiction over a portion of the watershed of Oatka Creek.
2. The geographic boundaries of the Intermunicipal Organization shall be the entire Oatka Creek Watershed.
3. The parties desire to recognize that an intermunicipal organization can best facilitate partnership across political boundaries to promote the ecological vitality of the Oatka Creek Watershed.
4. It is to the parties' mutual advantage and benefit to develop and implement cooperative restoration and protection efforts throughout the watershed, and to promote a regional alliance among local governments and county programs.
5. The parties hereto plan to continue exploring joint local, state, federal and other funding opportunities; and to obtain public support for programs that implement the mission and goals of the Oatka Creek Watershed Management Plan.
6. The parties hereto recognize the value of using common resources effectively.
7. The parties hereto desire to be proactive in addressing watershed-based issues which affect areas beyond traditional political boundaries.
8. The parties hereto wish to communicate and coordinate on local, state and federal policies and programs that affect water quality in Oatka Creek.
9. The parties agree to share information and coordinate efforts to comply with regulatory requirements.
10. The parties hereto find that promoting stewardship of the Oatka Creek Watershed resources is in the public interest and for the common benefit of all within the Oatka Creek Watershed. The parties hereto desire to educate the communities in the Oatka Creek Watershed about the importance of watershed stewardship.

III. GENERAL PROVISIONS:

1. Definitions. As used in this MOU, the following words and phrases shall have the meanings set forth below unless the context clearly indicates otherwise.
 - a) "MOU" shall mean this memorandum of understanding.
 - b) "Member" or "members" shall mean the representatives from the local governments and four counties encompassed in the Oatka Creek Watershed.
 - c) "Watershed" shall mean the entire Oatka Creek Watershed. A map depicting the boundaries of the watershed is appended hereto.
2. Purpose. This MOU is to affirm each member's commitment to the mission, goals and objectives of the Oatka Creek Watershed Management Plan.
3. Establishment of the Intermunicipal Organization. There is hereby established the Oatka Creek Intermunicipal Organization. The geographic boundaries of the organization will be the Oatka Creek Watershed.

4. Vision. Watershed stakeholders, municipalities and government agencies will work together through implementation of the Oatka Creek Watershed Management Plan to maintain the common goal of clean water and sustainable watershed management for the future of the Oatka Creek Watershed. Sustainable watershed management must include local involvement in planning and the management of natural resources and be the shared responsibility of all stakeholders and watershed residents.
5. Organization Membership.
 - a) Each of the four counties and municipal governments shall appoint one member to participate in regular meetings and report actions to their local government.
 - b) One representative from the regional planning board (Genesee/Finger Lakes Regional Planning Council), one representative from each county Soil and Water Conservation District and one representative from the Oatka Creek Watershed Committee may be ex officio members of the organization.
 - c) Membership: The total membership of the organization shall be constituted by the members appointed by the parties to this agreement. If a party to this agreement fails to appoint a member, then the count of total membership shall not include such member.
6. Voting: Each party to this MOU shall have one member and one vote.
7. Quorum. A majority of the members of the organization shall constitute a quorum for the purposes of transacting business.
8. Officers:
 - a) On an annual basis, the organization shall elect by popular vote a chairperson, vice chairperson, and Treasurer, and Secretary.
 - b) The Chairperson shall call and preside over meetings.
 - c) The Vice Chairperson shall serve in the absence of the Chairperson
 - d) The Treasurer shall maintain books tracking all organization funds, if any, and make reports on organization finances at each meeting.
 - e) The Secretary shall take and distribute minutes of meetings and be responsible for the organization's correspondence.
9. Meeting Organization: All meetings shall be conducted according to Robert's Rules of Order, most current edition.
10. An annual plan of work, based on projects and initiatives in accordance with the Oatka Creek Watershed Management Plan, shall be approved by a quorum vote of organization members.

IV. AGREEMENT:

Intermunicipal Organization members agree to:

1. Work together to protect the water quality of Oatka Creek, which in turn protects the quality of life for residents and the economic viability of the region.
2. Participate in regular Intermunicipal Organization meetings.
3. Work to implement recommendations of the Oatka Creek Watershed Management Plan's goals and objectives.
4. Participate in and provide watershed stakeholders with meaningful training opportunities.
5. Seek funding opportunities to meet the goals and objectives of the Oatka Creek Watershed Management Plan.
6. Strive to update the Oatka Creek Watershed Management Plan at least every 10 years.

V. EFFECTIVE DATE:

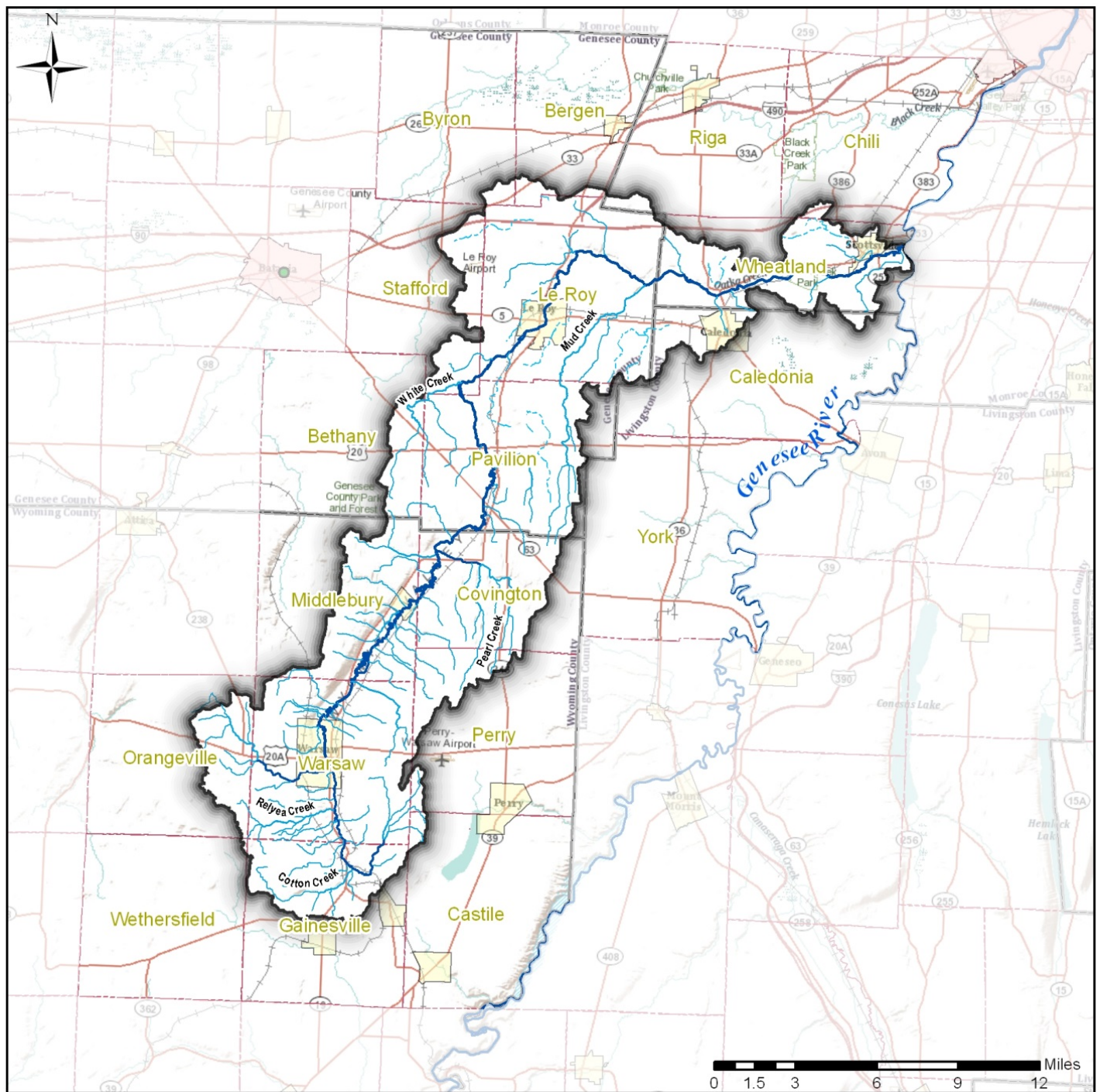
This MOU shall become effective on the date of signature below. This MOU is ongoing unless it is terminated by a member upon written notice to the remaining membership of this Intermunicipal Organization. This MOU may be amended at any time by mutual accord.

Signed:

Dates

Witness:

Adapted from the Seneca Lake Watershed MoU



Municipalities of the Oatka Creek Watershed

(See Section 2.2, Municipalities in *Oatka Creek Watershed Management Plan: Characterization Report*. 2012.
<http://gflrpc.org/Publications/BlackOatka/Characterization/OatkaCreekWatershed/FinalOatkaCharacterization.pdf>)