

**Village of Caledonia**  
Oatka Creek Watershed

<i>BMP #</i>	Best Management Practices (BMP)	Existing Means of Implementation (law, regulation, practice, etc)	Implementation
			2-full, 1-partial, 0-not at all, n/a-not applicable
<b>Section 1: Development</b>			
<i>Existing Developments</i>			
1-01	Identify retrofit opportunities such as addition of stormwater ponds to older developments or construction of wastewater treatment systems to replace older septic systems		0
1-02	Identify habitat and natural conveyance system restoration opportunities		0
1-03	Establish retention/detention areas		0
1-04	Acquire additional land for locating treatment facilities		0
1-05	Encourage homeowners to place compost piles away from waterbodies and roadways	<b>Practice:</b> 1999-2003 GLOW Composting Education Demonstration Sites set up with informational brochures	2
1-06	Encourage proper use and disposal of lawn and other household chemicals	<b>Practice:</b> 1995, 1999, 2003, 2006 GLOW Region Solid Waste Management Committee, in cooperation with GLOW Region Soil and Water Conservation, Farm Bureau and Cornell Cooperative Extension offices, farm pesticide collection programs; Household Hazardous Waste programs held regularly	2
1-07	Institute turf management practices on golf courses and parks and recreation areas		0
1-08	Undertake storm drain stenciling	<b>Practice:</b> conducted in both watersheds at various points in time; MS4s and stormdrains are relatively limited in upper reaches and in rural towns, however	2
1-09	Encourage volunteer programs, such as adopt-a-highways and adopt-a-stream, etc.		0
1-10	Include high percentage of indigenous plants in new landscaping on privately-owned properties (excluding arboretums, horticultural gardens, and sites requiring turf grasses)	<b>Practice:</b> SWCD tree and shrub sale, occurs on an annual basis; hardy varieties of native species are provided to the public at low-cost	2
1-11	Encourage water conservation		0
1-12	Develop outreach programs targeted at specific problems related to water quality management & resource conservation	<b>Practice:</b> CCE, SWCD and the two watershed groups have been developing several distinct programs regarding water quality, including (but not limited to) septic system outreach, erosion and sediment control workshops, agricultural BMPs, watershed planning and household hazardous waste	2

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1-13	Encourage proper control of pet wastes		0
1-14	Encourage continued operation of private storm water runoff control structures		0
1-15	Discourage feeding of waterfowl		0
1-16	Discourage the introduction of exotic aquatic species (Eurasian water milfoil, zebra mussels, water chestnut, loosestrife, hogweed, etc		0
1-17	Encourage continued (periodic) operation and maintenance of private septic disposal systems		0
1-18	Effective and consistent application and enforcement of stormwater regulations & requirements		0
1-19	Require certification of existing on site septic systems for property transfers or building expansions.	<b>Livingston County Sanitary Code, Article II, Sec. 7(a-d):</b> [Inspections to occur at time of construction and at property transfer]	2
1-20	Require entire property (existing as well as proposed) to be included in stormwater analysis/calculation.		0
1-21	Use of drainage districts		0
<i>New Development and Substantial Redevelopment</i>			
1-22	Minimize the amount of land disturbed and the duration of disturbance		0
1-23	Preserve natural features and conform substantially with the natural boundaries and alignment of waterbodies	<b>Z.O. 215-39</b> - The purpose of the Land Conservation District is to delineate those areas with special or unusual conditions of topography, drainage, floodplain or other natural conditions which serve their ecological purpose best in their natural state. <b>S of L. 186-21. E</b> - The Planning Board, shall wherever possible, establish the preservation of natural features (such as trees and waterways etc).	2
1-24	Retain and protect trees and other natural vegetation on and near disturbed sites	<b>Z.O. 215-39</b> - The purpose of the Land Conservation District is to delineate those areas with special or unusual conditions of topography, drainage, floodplain or other natural conditions which serve their ecological purpose best in their natural state. <b>S of L. 186-21. E</b> - The Planning Board, shall wherever possible, establish the preservation of natural features (such as trees and waterways etc).	2
1-25	Account for topography and soil type in efforts to minimize erosion potential	<b>S of L. 186-21. C(1)</b> - In cases where the planning board finds that due to topography, the land is not suitable for development, they may waiver development.	2

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1-26	Maintain runoff rates similar to pre-construction levels	<b>S of L. 186-20. A</b> - The subdivider may be required by the planning board to carry away surface water that may exist prior to or as a result of the subdivision.	2
1-27	Minimize the creation of impervious areas [encourage permeable surface]		0
1-28	Control increased runoff caused by changed surface conditions to minimize the danger of flooding, erosion, sedimentation and pollutants entering waterbodies prior to, during and after construction		0
1-29	Use temporary vegetation, silt barriers, and mulching to protect exposed and critical areas during development including timeline requirements (i.e. two weeks of no activity would need to be seeded)		0
1-30	Redistribute topsoil within the boundaries of the disturbed land for seeding and planting		0
1-31	Stabilize disturbed soils as soon as possible		0
1-32	Minimize the use of cut and fill operations. Conform such operations to topography and soils to minimize erosion potential and adequately accommodate runoff		0
1-33	Use appropriate solid and hazardous waste generation and disposal practices including source controls and recycling		0
1-34	Encourage construction site management techniques which include erosion control practices (follow SWPPPs) and the proper handling and disposal of pesticides and petroleum products and containers		0
1-35	Ensure proper operation and maintenance of runoff management facilities		0
1-36	Target training for contractors, developers, inspectors and zoning and planning officials.		0

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1-37	Require tree surveys and/or cutting plans.		0
1-38	Develop priority list for BMP's - use of vegetative low areas for retention/infiltration.		0
1-39	Encourage cluster development/conservation subdivisions		0
1-40	Require connection to and/or extension of existing water & sewer if project is within 500 feet of existing infrastructure	<b>Livingston County Sanitary Code, Article II, Sec. 3(c):</b> No individual sewage treatment system shall be installed on property accessible to a public or municipal sanitary sewer.	2
1-41	Enact limits on driveway grades.		0
1-42	For redevelopment, employ regulations that provide for technologically advanced (on and off) site wastewater treatment systems to optimize efficiencies and address "challenging" sites		0
1-43	Implement Federal/State Stormwater (SPDES) Phase II requirements including MS4 and Construction Permits as well as Municipal and Industrial Discharge Permits	<b>Practice:</b> Construction site and Construction Permit inspection conducted by the county SWCD at the request of NYSDEC; G/FLRPC continues to assist municipalities with other aspects of Phase II Stormwater compliance	2
1-44	Discourage development in flood plain and/or development below base flood elevation		0
<b>Section 2: Forestry and Agriculture</b>			
<i>Forestry</i>			
2-01	Consider potential water quality impacts when selecting silviculture system (yarding system, site preparation, pesticides employment, etc)		0
2-02	Consider harvesting practices	<b>Practice:</b> SWCD in conjunction with DEC offers woodlot management outreach services to land owners	2
2-03	Seasonal preference for logging operations		0
2-04	Have specialists (geologist, soil scientist, geotechnical engineer, wildland hydrologist) review plans in high erosion hazard areas		0

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2-05	Preplan harvest areas, skid trails, and access so as to be on stable soils, avoiding steep gradients, multiple stream crossings, poor drainage areas, etc.		0
2-06	Limit grades of access roads.		0
2-07	Require stabilization of roads/drives to forestry site.		0
2-08	Employ natural topography and contour for design of road network		0
2-09	Require stormwater controls for increased runoff from ground cover modification		0
2-10	Consider site restoration		0
<i>Agriculture</i>			
2-11	Use Agricultural Environmental Management (AEM)	<b>Practice:</b> Livingston County 5 year AEM Strategic Plan	2
2-12	Require farms seeking agricultural value assessment to participate in AEM	Does not apply: Legality of such a practice questioned by regional SWCD managers	n/a
2-13	Concentrated Animal Feeding Operations (CAFO) regulations and permits being followed	<b>Practice:</b> Enforced by NYSDEC; See also county SWCD AEM Five Year Plan	2
2-14	Use of Comprehensive Nutrient Management Plans	<b>Practice:</b> Livingston County 5 year AEM Strategic Plan, Genesee River watersheds, page 16, Desired Future Conditions: Identify and reduce nutrient and sediment loading from watershed by implementation of various BMP's and development of needed nutrient management plans	2
2-15	Barnyard runoff controls	<b>Practice:</b> Livingston County 5 year AEM Strategic Plan, Genesee River watersheds, page 16, Desired Future Conditions: Identify and reduce nutrient and sediment loading from watershed by implementation of various BMP's and development of needed nutrient management plans	2
2-16	Grazing in environmentally sensitive areas (e.g. streams)	<b>Practice:</b> Caring for Creeks, EPF Ag NPS Abatement grants	2
2-17	Use of agricultural protection such as Agricultural Districts, agricultural preservation ordinances and practices, right to farm laws, and Agricultural and Farmland Protection Plans	<b>Ag. Districts Present</b>	2

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2-18	Existing Open Space Plans	<b>Livingston County Environmental Management Council (EMC) Natural Resource Inventories (NRIs):</b> The EMC will utilize these data to assist municipalities, developers, and the private sector in land development planning. County NRI information will include bedrock geology, soil resources, hydrology, unique natural and cultural features, geology, land use, transportation, community facilities and services, population, wetlands, and floodplains.	2
<b>Section 3: Waterways and Wetlands</b>			
<i>Modified Waterways</i>			
3-01	Develop an operation and maintenance program for existing modified streams that includes identification of opportunities and actions to restore habitat and the physical and chemical characteristics of these streams.		0
3-02	Improve stream quality by controlling instream sedimentation and selectively clearing debris	<b>Practice:</b> SWCD has inventoried entire section of the Oatka Creek and has identified 43 locations for tree removal	2
3-03	Establish or reestablish riparian buffers	<b>Practice:</b> SWCD works in conjunction with land owners, farmers in particular	2
3-04	Prevent animal wastes from entering waterbodies. Examples may include: animal control ordinances and/or practices that pertain to animal waste disposal; waterfowl abatement programs.	<b>Practice:</b> SWCD/NRCD comprehensive nutrient management plans, bunker storage systems, etc.	2
3-05	Attempt vegetative stabilization before undertaking structural measures	<b>Practice:</b> SWCD has used vegetated systems, such as downed trees and logs, to stabilize severely eroded banks	2
3-06	Schedule the periodic maintenance of sediment control measures, and inspect and repair them as needed in conformance with established schedule.	<b>Practice:</b> SWCD is always looking for opportunities to devise check dams; maintains several that are in operation	2

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3-07	Protect streambanks through direct nonstructural means, such as new vegetation or protection of existing vegetation; direct structural means, such as revetments and bulkheads; indirect nonstructural means, such as regulating irrigation near streambanks or rerouting overbank drainage; or indirect structural means, such as deflecting channel flow away from streambanks with dikes, board fences and gabions	<b>Practice:</b> SWCD has used vegetated systems, such as downed trees and logs, to stabilize severely eroded banks; other innovative approaches are developed on a case-by-case, site-specific basis	2
3-08	Use setbacks to minimize disturbance of land adjacent to streambanks and shorelines		0
3-09	Prevent discharges to waterbodies in amounts that would adversely affect the taste, color or odor of the waters, or would impair the waters for their best usages		0
<i>Wetlands and Riparian Area Management and Restoration</i>			
3-10	Consider wetlands and riparian areas and their non-point source (nps) control potential	<b>Practice:</b> guiding principle of SWCD operations, as exemplified in efforts in the field as well as education and outreach programs	2
3-11	Identify existing functions of those wetland and riparian areas with significant nps control potential when implementing nps management practices. Do not alter wetlands or riparian areas to improve their water quality at the expense of their other functions		0
3-12	Conduct permitting, licensing, certification and nonregulatory nps pollution activities in a manner that protects wetland functions		0
3-13	Special zoning considerations to protect wetland areas		0

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3-14	Use appropriate pretreatment practices such as vegetated systems or detention or retention basins to prevent adverse impacts to wetland functions that affect nps pollution abatement from hydrologic changes, sedimentation, or contaminants		0
3-15	All projects should require wetlands certification.		0
<b>Section 4: Recreation</b>			
<i>Docks and Launches</i>			
4-01	Required site planning and approval for docks and launches		0
4-02	Use of naturally resistant non-treated wood for docks		0
4-03	Docks constructed to allow for free-flow of water beneath them to prevent erosion and sedimentation along shoreline		0
4-04	Limit size of docks		0
4-05	Maintenance of dock - application of preservatives and paints		0
4-06	Consideration of access to dock and launches to mitigate erosion		0
<i>Golf Courses</i>			
4-07	Pesticide storage - covered, locked concrete or steel building with adequate ventilation and metal shelving, no floor drains, and berm or sill to contain spills		0
4-08	Pesticide mixing and loading - use of chemical mixing center and proper operation and maintenance		0
4-09	Solvents and Degreasers - separate solvent collection systems such as solvent wash baths		0
4-10	Solvents and Degreasers - consideration of storage, use (contained), and disposal		0

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4-11	Fertilizer Storage - covered fertilizer storage areas with curbs or berms to prevent water from entering. Secondary containment should be used even where not required		0
4-12	Fertilizer Loading: Make specific accommodations for fertilizer loading and mixing so that spills may be collected and managed. Examples include covered, impermeable surfaces intended for mixing; sloped surfaces that direct spills toward a liquid-tight sump for recovery; provision of appropriate cleaning materials, such as cat litter or sand.		0
4-13	Disposal of grass clippings: Grass clippings should remain on the surface in order to provide a natural source of organic matter and nutrients. If this is not preferred, clippings should be spread lightly in the rough or other unmanaged areas away from surface waters, outside of aquatic buffer zones.		0
4-14	Used Oil, antifreeze and lead acid batteries - collection and recycling		0
4-15	Gasoline, Diesel fuel - compliance with DEC regulations for above-ground and below ground tanks, closing of stormwater drains in immediate vicinity of fueling point		0
4-16	General Equipment Washing: Minimize the use of detergents or degreasers; high pressure systems are used to decrease water usage; If less than 500 gallons per day, wastewater from equipment washing may drain to a grassed retention area or swale away from receiving waterbodies; otherwise discharges should be directed to a municipal treatment system		0
4-17	Encourage use of vegetated buffers near aquatic areas, such as streams, ponds, lakes and wetlands		0

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<b>Section 5: Roads and Bridges</b>			
<i>Existing Roads and Bridges</i>			
5-01	Conduct road and bridge maintenance (de-icing material usage and storage, pot-hole repair, bridge washing, scraping and painting, etc) according to best management practices	<b>Practice:</b> the department has a very small jurisdiction, however several key BMPs are being practiced; limited salting, hydroseeding conducted when necessary, etc.	2
5-02	Conduct right-of-way activities (mowing, brush removal, pesticide and fertilizer use, etc) - according to best management practices	Practice: limited area to be covered, including one ditch/intermittent stream; however, department approaches the area with sensitivity	2
5-03	Include high percentage of indigenous plants in new landscaping on public-owned properties (excluding arboretums, horticultural gardens, and site requiring turf grasses)	Practice: disease-resistant species and native species are always chosen	2
5-04	Implement a regular inspection and maintenance plan of existing structures	<b>Practice:</b> catch basins are vacuumed out regularly; only 3 culverts in the village; no other facilities	2
5-05	Develop and identify erosion/sediment control areas (examples include steep slopes, easily erodible soils, and nearby sensitive areas) and retrofit opportunities	<b>Does not apply:</b> area is relatively flat and free of erosion issues	n/a
5-06	Incorporate alternatives to traditional de-icing practices, including adjusting mix rates, using non-salt and non-sand alternatives	<b>Practice:</b> various alternatives have been tested and are currently used, including the additive 'Iceban'; otherwise, 100% salt is used in the village	2
<i>New Roads and Bridges (Road Rehabilitation Only)</i>			
5-07	Minimize the amount of land disturbed and the duration of disturbance		0
5-08	Preserve natural features and conform substantially with the natural boundaries and alignment of waterbodies	<b>Z.O. 215-39</b> - The purpose of the Land Conservation District is to delineate those areas with special or unusual conditions of topography, drainage, floodplain or other natural conditions which serve their ecological purpose best in their natural state. <b>S of L. 186-21. E</b> - The Planning Board, shall wherever possible, establish the preservation of natural features (such as trees and waterways etc).	2

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5-09	Retain and protect trees and other natural vegetation on and near disturbed sites	<b>Z.O. 215-39</b> - The purpose of the Land Conservation District is to delineate those areas with special or unusual conditions of topography, drainage, floodplain or other natural conditions which serve their ecological purpose best in their natural state. <b>S of L. 186-21. E</b> - The Planning Board, shall wherever possible, establish the preservation of natural features (such as trees and waterways etc).	2
5-10	Retain additional runoff sites		0
5-11	Minimize the creation of impervious areas		0
5-12	Treat increased runoff caused by changed surface conditions to minimize the danger of flooding, erosion and pollutants entering waterbodies prior to, during and after construction		0
5-13	Use temporary vegetation and mulching to protect exposed and critical areas during development		0
5-14	Redistribute topsoil within the boundaries of the disturbed land for seeding and planting	<b>Practice:</b> topsoil and seeding is done ASAP after land altering activities	2
5-15	Stabilize disturbed soils as soon as possible	<b>Practice:</b> topsoil and seeding is done ASAP after land altering activities	2
5-16	Minimize the use of cut and fill operations. Conform such operations to topography and soils to minimize erosion potential and adequately accommodate runoff	<b>Does not apply</b>	n/a
5-17	Control erosion and sedimentation prior to, during and after site preparation and construction	<b>Practice:</b> topsoil and seeding is done ASAP after land altering activities	2
5-18	Require long term stormwater management plan.		0
5-19	Require long term sedimentation control & maintenance.	<b>Practice:</b> Stormwater Phase II Pre/Post Regulations are required; SWCD will inspect implementation at the request of the DEC or constituent municipalities	1
<i>All Roads and Bridges</i>			
5-20	Target existing public holdings, such as parks, for removing unnecessary impervious surfaces		0

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5-21	Incorporate New York State Department of Transportation design and guidance documents, standard specifications, and procedural manuals ( <i>Highway Design Manual, Environmental Procedures Manual, Maintenance Guidelines</i> , etc) into local laws and operating procedures	<b>Practice:</b> superintendent is familiar with the documents	1
5-22	Ensure application of appropriate solid and hazardous waste generation and disposal practices including source controls and recycling	<b>Practice:</b> standard operating procedure	2
5-23	Ensure proper operation and maintenance of runoff management facilities	<b>Practice:</b> limited number of facilities; all are easily maintained	2
5-24	Participate in Cornell Local Roads Program activities and training	New employee/not familiar with the program	0
5-25	Target training programs at highway officials, contractors, construction workers, inspectors, zoning and planning officials		0
5-26	Target training and outreach programs about the proper handling of materials, leakage and spill prevention and spill response procedures at maintenance staff and workers	<b>Practice:</b> mandatory OSHA training seminars	2
5-27	Culvert maintenance: Culverts are routinely inspected and maintained so that they will remain unobstructed, allowing for the free flow of water during storm events. Blockages resulting from sedimentation, debris, excessive vegetation and structural failure are issues to be aware of.	<b>Practice:</b> 3 culverts within the village limits; all are easily maintained	2
5-28	Culvert sizing for existing land use	<b>Practice:</b> 3 culverts within the village limits; all are easily maintained	2
5-29	Culvert sizing for changes in upstream land use and imperviousness	<b>Practice:</b> 3 culverts within the village limits; all are easily maintained	2
<b>Section 6: Onsite Wastewater Treatment Systems</b>			
6-01	Conduct regular inspections of OWTS at a frequency adequate to determine failure and undertake required maintenance		0

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6-02	Institute setback guidelines		0
6-03	Promulgate plumbing codes that require practices that are compatible with OWTS		0
6-04	Target outreach programs at homeowners, contractors and developers	<b>Practice:</b> Cornell Cooperative Extension, Soil and Water Conservation Districts, Livingston County Health Dept. all conduct education and outreach programs and/or offer technical assistance	2
6-05	Inspection of all OWTS at property transfer or within 1 year prior to transfer	<b>Livingston County Sanitary Code, Article II, Sec. 7(a-d):</b> [Inspections to occur at time of construction and at property transfer]	2
6-06	Require all properties within 500' of municipal service to connect.	<b>Livingston County Sanitary Code, Article II, Sec. 3(c):</b> No individual sewage treatment system shall be installed on property accessible to a public or municipal sanitary sewer.	2
6-07	Set goals for effluent limits (nitrogen, phosphorous, BOD, etc)		0