

County/Municipality/Organization: Niagara County Soil & Water Conservation District

Name of Project or Activity: Twelve Mile Creek Agricultural BMP Implementation Project

Project Contact Information

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Project Location

Municipality (City/Town/Village): Cambria, Wilson, Porter, NY	County: Niagara
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Time Duration: 5/07 - 5/08 Completed On-going Planned

Type of Project (check all that apply)

<input checked="" type="checkbox"/> Implementation Project (check which type →)	<input type="checkbox"/> Wastewater treatment and infrastructure	<input type="checkbox"/> Coastal remediation and restoration	<input checked="" type="checkbox"/> Sustainable use / Strategic planning (Protection and Conservation)
	<input type="checkbox"/> Coastal Education	<input type="checkbox"/> Other (specify):	
<input type="checkbox"/> Research Project			

Source of Funding (check all that apply, i.e. there could be more than one funding source)

<input type="checkbox"/> Municipal	<input type="checkbox"/> County	<input checked="" type="checkbox"/> State	<input type="checkbox"/> Federal	<input type="checkbox"/> LOCI	<input checked="" type="checkbox"/> Other (specify): landowner
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Summary of Project (include problem being addressed, techniques or methods used, expected outcomes, outcomes if completed, and progress/status if on-going)

The Twelve Mile Creek Agricultural BMP Implementation Project is a cooperative effort between the Niagara County Soil and Water Conservation District (NCSWCD) and the Natural Resources Conservation Service (NRCS). The Twelve Mile Creek and Twelve Mile Creek to Eighteen Mile Creek watersheds (04130001.020 and 04130001.030) drain approximately 63,500 acres of land from the Towns of Porter, Wilson, Newfane, Lewiston and Cambria in Niagara County into Lake Ontario. Several streams important to fisheries in the county drain the watershed and include the East and West Branches of Twelve Mile Creek and Hopkins Creek as well as many direct drainage areas to the Lake Ontario. Land use in the watershed is primarily agricultural but also consists of woodlands, wetlands, abandoned farmland, the Village of Wilson and a State park. Specific impairments from non-point source pollution (ie. Nitrate and phosphorus) have been documented through water quality monitoring of the watershed.

These two watersheds have been combined in the County AEM strategy, and are identified as one unit in the Niagara Water Quality Strategy. This geographic area is ranked as the number two priority in the county AEM strategy. The AEM tiered planning for the watershed was initiated in 2000 and is continually being updated. To date there have been 186 Tier I's, 102 Tier II's, 7 Tier IIIA's, 2 Tier IV's and 6 Tier V's completed in the watershed. The overall goal of the AEM process is to document and prioritize water quality impairments and to identify specific farm practices contributing to these impairments. The Tier I, II and IIIA planning has been completed on each of the farms included in this project and the identified problems are being addressed by this grant application. This project is one step in a phased approach in the watershed. The problems being addressed in this application include uncontrolled manure laden runoff from barnyards, sedimentation of streams through highly disturbed heavy use areas and barnyards, silage leachate runoff, and cattle access to the stream. These farms

are creating a threat to water quality in Twelve Mile Creek and direct drainage areas in the watershed. This proposal offers the most economic and effective solution to remediate the problems identified on these farms by the implementation of several Best Management Practices (BMPs). A description of the farms and proposed BMPs are as follows:

Alexander-Kutis Beef Farm

The proposed BMPs planned for the Alexander-Kutis Beef Farm, in the Town of Cambria, include a barnyard water management system, fencing and a stream crossing. The storm water run-off from an existing barnyard is not contained at the farm and additional roof water from the adjacent barn drains onto the barnyard. Manure is not contained on the pad during scraping operations due to lack of curbing. During rainfall events the runoff is uncontrolled and runs directly into Twelve Mile Creek, located 200 feet west of the barnyard. The run-off from this area impacts the local water quality with nutrient and sediment load. The proposed management system consists of the installation of concrete curbing around the barnyard to contain manure during scraping operations and a roof system to prevent the rain water from contacting the manure, which will eliminate approximately 270,000 gallons of contaminated runoff from the area each year. The fencing at the farm is planned to prevent cattle access to over 800 lineal feet of the creek. The creek runs directly through the pasture at the farm and the cattle have uncontrolled access to the creek and have disturbed the creek bed and banks. The fence will run along both the north and south sides of the creek to eliminate cattle access and provide a buffer to the creek. A stream crossing will be constructed to provide access to the pasture along the north side of the creek. The planned BMP's will tremendously reduce nutrient and sediment loading from the farm, and thereby benefit water quality to an important fishing stream within the county. The improvements will allow for the containment of manure on the existing concrete barnyard and will prevent rain water from contacting any surfaces containing manure, thereby keeping the storm water clean. In addition, a riparian buffer will be created for the stream, cattle access to the stream will be eliminated, and a stream crossing will provide protection to the stream at the point where the cattle will cross, making this project an ideal candidate for the US Department of Agriculture CREP program.

Fleckenstein Beef Farm

The proposed BMP planned for the Fleckenstein Beef Farm, in the Town of Porter, is a barnyard water management system. The storm water run-off from an existing barnyard is not controlled or treated at the farm. Manure is not contained on the pad during scraping operations due to lack of curbing. During rainfall events the runoff is uncontrolled and runs into an adjacent ditch, which provides a direct conduit to Twelve Mile Creek, located 250 feet west of the barnyard. The run-off from this area impacts the local water quality with nutrient and sediment load. The proposed system consists of extending the concrete barnyard to provide sufficient area to accommodate the cattle on the barnyard, the installation of concrete curbing around the barnyard to contain manure during scraping operations and a roof covering system to prevent the rain water from contacting the manure, which will eliminate approximately 75,000 gallons of contaminated runoff from the area each year.

Freck Beef Farm

The proposed BMP planned for the Freck Beef Farm, in the Town of Porter, is a barnyard water management system. The storm water run-off from an existing soil and stone barnyard is not controlled or treated at the farm. Manure is unable to be removed from the area because there is no hard surface area that can be scraped. During rainfall events the barnyard becomes very muddy from direct rainfall and the runoff from the adjacent barn roof, which amplifies the problem. The contaminated runoff discharges into the roadside ditch which is adjacent to the barnyard, and provides a direct conduit to Twelve Mile Creek, located 700 feet east of the barnyard. The run-off from this area impacts the local water quality with nutrient and sediment load. The proposed system consists of relocating the barnyard away from the road ditch, constructing a paved barnyard with concrete curbing to contain manure on the barnyard and the installation of a roof covering system to prevent the rain water from contacting the manure. The project will eliminate approximately 220,000 gallons of contaminated runoff from the existing barnyard each year.

Muck Cattle Farm

A silage leachate management system is planned for the Muck Farm in the Town of Wilson. The concentrated leachate and the storm water runoff from the existing bunk silo is not controlled or treated. The existing configuration of the bunk silo at this farm allows leachate from the silage bunker to flow into a clean water ditch located adjacent to the bunk. This ditch drains directly into Twelve Mile

Creek. The project will consist of installing paved curbing and swales to direct runoff to a low flow collection pad where the concentrated leachate will be collected and stored in a concrete tank. The high flows (diluted runoff) during rain events will be routed through a wastewater treatment strip to treat the runoff prior to discharging it into the clean water ditch. The system will improve water quality by removing the 13,000 gallons of concentrated leachate from the drainage ditch and storing it until it can be diluted with manure waste and spread onto cropland and by treating the 263,000 gallons of rainfall run-off from the bunk silo through a wastewater treatment strip.

Pinehurst Dairy Farm

A silage leachate management system is planned for the Pinehurst Dairy Farm in the Town of Wilson. The existing silage storage area consists of a 250' by 150' stone base. The area is rough and does not allow the easy removal of spilled silage and does not provide for the collection of concentrated leachate and storm water runoff from the area. The uncontrolled runoff drains into an unnamed water course located 20 feet from the low end of the storage area, which drains directly into Lake Ontario. The project will consist of paving the silage storage area to allow the removal of spilled silage and collection of concentrated leachate as well as the collection and routing of storm water runoff through a vegetated filter strip. The system will improve water quality by eliminating the discharge of concentrated leachate into the adjacent stream, and treating 912,000 gallons of rainfall run-off from the bunk silo through a wastewater treatment strip.

Wills Dairy Farm

The proposed BMP planned for the Wills Dairy Farm, in the Town of Porter, is a barnyard water management system. An existing concrete area is located at the south end of two barns. The area is used to scrape manure from both barns to an existing concrete manure pump tank. Concrete blocks (2'x2'x4') have been placed along the edge of the concrete to contain the manure on the pad. The joints between the blocks are not water tight and allow manure and liquid to seep through the cracks and into Twelve Mile Creek which is located 20 feet to the south. The project will consist of the installation of a water tight, concrete curb around the entire paved area to eliminate the seepage of manure laden water into the adjacent creek. This BMP will reduce nutrient loading from the farm, and thereby benefit water quality to an important fishing stream within the county, by preventing over 100,000 gallons of manure laden runoff from entering the stream each year. The improvements will allow for complete containment of manure, and manure laden storm water on the existing concrete barnyard and will prevent contamination from reaching the creek.