



## Section 319

# NONPOINT SOURCE PROGRAM SUCCESS STORY

# New Jersey

## Agricultural Nonpoint Source Controls Improve Water Quality in Walkill River at Hamburg

### Waterbodies Improved

Nutrients in stormwater runoff from agricultural areas impaired New Jersey's Walkill River. As a result, the New Jersey Department of Environmental Protection (NJDEP) added two assessment units of the Walkill River to the state's Clean Water Act (CWA) section 303(d) list of impaired waters for phosphorus—"Martin's Road to Hamburg" (in 2000) and "Hamburg to Ogdensburg" (in 2002). To address the problem, local, state and federal partners collaborated to implement agricultural best management practices (BMPs) such as pasture, integrated crop and manure management. Water quality improved, prompting NJDEP to remove both assessment units from the impaired waters list—"Hamburg to Ogdensburg" in 2008 and "Martin's Road to Hamburg" in 2010.

### Problem

The Walkill River watershed (Figure 1) is in Sussex County in northwestern New Jersey. The headwaters of the Walkill River begin at Lake Mohawk in Sparta Township. The river flows north into New York, eventually emptying into the Hudson River. The New Jersey portion of the Walkill River watershed is a scenic area that receives stormwater runoff from residential, agricultural and steeply sloped forested areas.

NJDEP has collected monitoring data in the 19.8-mile-long "Martin's Road to Hamburg" and 11.03-mile-long "Hamburg to Ogdensburg" Walkill River assessment units for more than 25 years. Between 1985 and 2000, phosphorus levels in these assessment units often exceeded the state's surface water quality standard, which requires that phosphorus levels not exceed 0.1 milligram per liter (mg/L). As a result, NJDEP added both assessment units to the state's CWA section 303(d) list of impaired waters in 2000 and 2002, respectively, for phosphorus impairment.

### Project Highlights

To address the water quality problem, multiple watershed stakeholders partnered to develop the Walkill River Watershed Management Group (WRWMG). Members of the WRWMG include federal, state, county and municipal government officials; representatives from the agricultural,

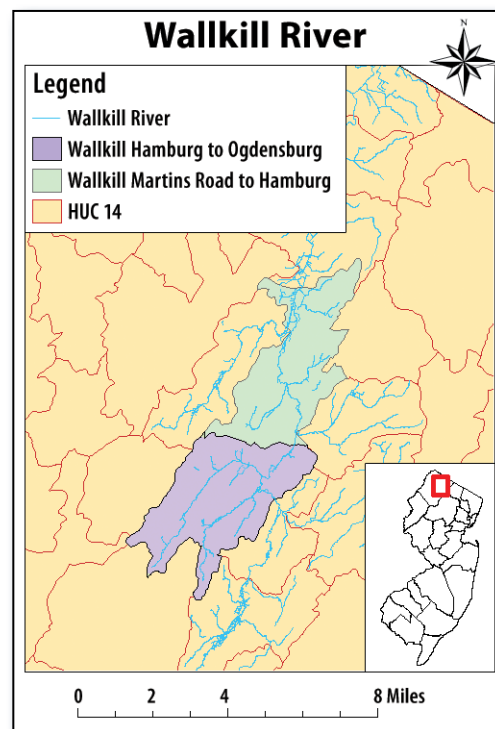


Figure 1. The "Martin's Road to Hamburg" and "Hamburg to Ogdensburg" Walkill River assessment units are in northwestern New Jersey.

lake and educational communities; and interested watershed residents.

In 2000, WRWMG developed a characterization and assessment plan for the watershed management area that includes the Walkill, Pochuck



Figure 2. Some farmers in the watershed installed manure storage facilities like this one.

and Papakating rivers. The initial assessments indicated that runoff from agricultural areas was likely negatively affecting water quality in the Walkkill River watershed. Shortly thereafter, the WRWMG coordinated with North Jersey Resource Conservation & Development Council (NJRC&D) and the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) to begin restoring the Walkkill River watershed. In 2002, the NJRC&D received a CWA section 319(h) grant in partnership with the NRCS to implement agricultural BMPs throughout the Walkkill watershed. From 2003 through 2006, the partners used the grant funds to establish a project steering committee; implement agriculture BMPs such as integrated crop, nutrient and pasture management (Figures 2 and 3); help agricultural landowners transition to organic farming practices; and provide targeted technical training programs about agricultural BMPs for farmers.

## Results

Implementing agricultural BMPs and improving farming practices reduced nutrients in stormwater runoff, allowing water quality to improve in the Walkkill River's "Martin's Road to Hamburg" and "Hamburg to Ogdensburg" assessment units. NJDEP collected 25 samples annually between 2005 and 2008 in the "Martin's Road to Hamburg" segment and determined that the segment met the phosphorus water quality standard of 0.1 mg/L.



Figure 3. Many farmers adopted no-till farming, which requires specialized equipment.

Similarly, monitoring data from the "Hamburg to Ogdensburg" assessment unit indicate that the river no longer exceeds the phosphorus standard. In view of the abundant dataset and the rarity of the observed exceedances, NJDEP determined that both assessment units (30.83 miles total) meet the phosphorus water quality standard. As a result, NJDEP removed them from the state's list of impaired waters for phosphorus—"Hamburg to Ogdensburg" in 2008 and "Martin's Road to Hamburg" in 2010.

## Partners and Funding

In 2002, the NJRC&D received a \$122,000 CWA section 319(h) grant to implement agricultural BMPs throughout the Walkkill watershed. This project also supported the establishment of a project steering committee to guide watershed restoration efforts. The committee included participation from local farmers, the Farm Bureau, NRCS, Rutgers Cooperative Extension, Northeast Organic Farming Association, Sussex Conservation District and Sussex County agricultural organizations. Approximately \$300,000 in state corporate business tax funds supported the development of the WRWMG, which coordinates all watershed work in the Walkkill River watershed. NJDEP has been actively involved in watershed management in the watershed since March 2000 and continues to support restoration efforts by funding the development of watershed plans in the Walkkill River's Papakating and Paulins Kill sub-watersheds.



U.S. Environmental Protection Agency  
Office of Water  
Washington, DC

EPA 841-F-12-001Q  
July 2012

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