New Jersey Department of Environmental Protection
Division of Watershed Protection and Restoration
Water Quality Restoration Grants to mitigate
Nonpoint Source Pollution 2020-2022

A. Watershed Plans:

1. WQR-2020-SJRCD-00053 $200,414

South Jersey Resource Conservation and Development Council
Lower Delaware

The main goal of this project is to develop an NJDEP-approved Watershed Implementation Plan for the Chestnut Branch Watershed so that various water quality impairments (listed on 303d and TMDLs) can be effectively addressed. The Chestnut Branch Watershed (HUC14- 02040202130030) is a priority watershed within the Lower Delaware region. Rowan University will lead the effort to prepare detailed hydrologic and water quality models that estimate loadings from the various subwatersheds and determine the impact of proposed remediation and best management practices.

The Rowan-led modeling will likely exceed the efforts performed for most watershed plans, offering a unique opportunity to evaluate the benefits of higher-level modeling in the development of 9-element watershed plans. The project partners intend to utilize previous evaluations and field studies to focus their watershed visual assessment and guide the development of BMP recommendations. All information will be included in the Watershed Implementation Plan. The partners plan to include local stakeholders, especially local and county governments, throughout this process.

2. WQR-2020-South Jersey Land & Water-00098 $180,169

South Jersey Land & Water Trust
Lower Delaware

The Oldmans and Raccoon Creeks watersheds are impaired and listed as priorities by the NJDEP. With significant development pressure in the area, it is critical that a comprehensive Watershed Plan be available to address the existing impairments and provide a framework for protecting the water resources of these watersheds. South Jersey Land and Water Trust and its partners will build on the 2009 Oldmans Creek Watershed and Protection Plan prepared by the Rutgers Water Resources Program and the 2008 Raccoon Creek Watershed Characterization and Assessment Report prepared by the Camden and Gloucester Soil Conservation Districts by creating a NJDEP approved 9-element Watershed Implementation Plan.

The goal of this project is to develop watershed restoration and protection plans for the Oldmans and Raccoon Creek watersheds to attain the required reductions in TMDLs. The plans will include the nine elements required by EPA and will address issues throughout the entire watershed, while leveraging work already completed by the Rutgers RCE Water Resources Program and Camden County Soil Conservation District.

3. The WQR-2020-Rutgers -00001 $467,872

Rutgers, The State University of New Jersey
Lower Delaware

The study area will be the Rancocas Creek Watershed upstream of Route 295, which is approximately 315 square miles. This area consists of 40 HUC14s, and of these 40 HUC14s, 12 have been identified as high or medium-priority by the NJDEP. This Watershed Restoration Protection Plan (WRPP) will focus on 21 municipalities that are completely or mostly contained within the Rancocas Creek watershed study area. The Rutgers Cooperative Extension (RCE) Water Resources Program has already completed green infrastructure feasibility studies for nine of these 21 municipalities.

The goal of this project is to develop a Watershed Restoration Protection Plan (WRPP) for the Rancocas Creek Watershed that identifies opportunities to reduce pollutant loading to the waterway and reduce localized flooding. The study area will be the Rancocas Creek Watershed, upstream of Route 295, which is approximately 315 square miles. The plan will have the nine components as required by EPA and will address issues throughout the entire watershed which encompasses 21 municipalities. A strong focus will be placed on the 12 priority HUC14s that have been identified by NJDEP.

B. Lake Plans:

4. WQR-2020-Frankford Township-00062 $137,025

Greater Culver Lake Watershed Conservation Foundation
Upper Delaware

The accelerated eutrophication of the Paulins Kill ecosystem has been linked to the nonpoint source influx of bio-available orthophosphate, as well as dissolved inorganic, dissolved organic and soluble reactive forms of phosphorus. In the non-sewered communities located in the headwaters of the Paulins Kill, septic systems are often a major source of the bio-available forms of phosphorus responsible for mid-summer harmful algae blooms (HABs). This phosphorus is generated by both properly operating as well as failing septic systems.

The goal of this project is to demonstrate the ability to significantly decrease septic-related phosphorus loading using easy to install, operate, and maintain septic system modification technology. The project's objectives are: 1) installation of the Wastewater Conditioning System (WWCS) in 10 homes within the Culver Lake watershed, 2) monitor the performance of the WWCSs for two years, 3) quantify the reduction in phosphorus loading, 4) use the phosphorus load reduction data attributable to the 10 WWCS installations to compute the potential watershed-wide reduction in phosphorus loading, and 5) synthesize and discuss the project's results in a report that fully documents attainment of the project's stated goal.

5. WQR-2020-Newark-00064 $286,400

City of Newark
Northeast

A water issue present in the Pequannock Watershed is in the form of harmful algae blooms (HABs). On July 2, 2018, Newark sampled algae at Echo Lake in excess of 2,000 cells, which prompted public access closure as the water body was chemically treated. Similarly, a cyanobacteria bloom was

observed and quantified by NJDEP's Bureau of Freshwater & Biological Monitoring (BFBM) on October 30, 2019, at the Canistear Reservoir. Samples indicated a cyanobacteria cell count of 8.7 million cells/ml and microcystin concentration of 423 ug/l. The Bureau of Safe Drinking Water was notified and BFBM recommended advisory warning signs be posted at the Canistear boat launch area. Per the work authorized in March 2020 through March 2023, ultrasonic algal control units were installed to provide full coverage to the surface of Echo Lake, and partial coverage to the Canistear and Charlotteburg Reservoirs.

The goal of this project is to implement near-term control of harmful algae blooms through the continued use of ultrasonic equipment. Additional data will be collected to paint a comprehensive picture of the source of HAB outbreaks. The ultrasonic control system, that was installed as part of NJDEP's HAB RFP#1, has been effective in maintaining low levels of toxins associated with blue-green algae. The wireless capabilities of the unit allow the user to monitor and analyze collected data in real time using web-based software. Using these data, the user or operator can predict algal blooms and make decisions accordingly. The ultrasonic technology does not break the cell wall of the algae or cyanobacteria, and as such, algal toxins are not released into the water. Furthermore, the ultrasonic technology has been proven to be safe for fish, plants, zooplankton, insects, and humans.

C. Durhernal Lake:

6. WQR-2020-WMUA-00057 $300,000

Western Monmouth Utilities Authority
Raritan

The Department has concluded that Duhernal Lake is eutrophic and in need of a phosphorus TMDL to attain compliance with the Surface Water Quality Standards (SWQS). A combination of controls for point and nonpoint source phosphorus loadings throughout the watershed is necessary. This project will seek the attainment of the SWQS in Duhernal Lake and evaluate implementation measures for reducing nonpoint and point source pollutant loadings throughout the Duhernal Lake watershed. The resulting plan will prescribe the steps that must be taken in this watershed to provide for attainment of the SWQS in Duhernal Lake in support of the Department's TMDL initiative. The outcome of the project will be a watershed plan for the restoration of water quality and attainment of the SWQS in Duhernal Lake.

D. Implementation of approved Watershed Plans:

7. WQR-2020-NJRCD-00029 $490,983.9

North Jersey RC&D Area, Inc.
Upper Delaware

Musconetcong River Watershed Protection Plan: Hampton to Bloomsbury
Alexauken Creek Watershed Protection Plan
North Jersey RC&D will administer the AgAssist and EQIP-Assist Programs in areas NJDEP identified as high and medium-priority watersheds. The priority watersheds selected include those with approved Watershed Based Plans (Musconetcong and Alexauken) and those with identified total phosphorus and/or E.coli impairments (reference map). The AgAssist "E-Coli

Reduction" and EQIP-Assist Program will be administered in priority watersheds with E-Coli impairments. The AgAssist "Phosphorus Reduction" Program will be administered in priority watersheds with total phosphorus impairments. Agricultural BMPs funded through each program will address impairments within each watershed and result in water quality improvements.

NJRCD will advertise the AgAssist programs via social media, direct mailers, partner organizations, and local meetings with landowners within priority watersheds. Agricultural producers will be invited to apply online or via paper application. Applications will be reviewed by NJRCD staff on a rolling basis. An NJRCD staff member will visit each farm, assess resources concerns and conservation needs, and determine eligibility for funding. This outreach and funding approach ensures that all farmers are aware of the opportunity and have equal opportunity to use the funding.

Farmers who meet program eligibility requirements will be accepted into the program. NJRCD staff will develop a detailed landowner agreement including information about approved cost-share funding, farmer responsibilities, conservation commitments, and an anticipated implementation timeline. NJRCD staff and project consultants will provide technical assistance to accelerate project completion and ensure a successful transition to conservation practices by guiding their implementation and maintenance.

In most cases, farmers will be eligible for financial assistance following project completion. NJRCD staff will visit the site, document the improvements, discuss maintenance requirements, and collect receipts to verify project costs and farmer contributions. Once all project requirements are met, NJRCD will issue a payment; where funding is made available upfront, producers will sign a contract and agree to meet program requirements and participate in annual site visits/project update meetings.

8. WQR-2020-SCMUA-00020 $609,434.98

Sussex County Municipal Utilities Authority
Upper Delaware

Clove Brook Watershed Restoration Plan
Papakating Creek Watershed Restoration Plan

In 2009, the Sussex County Municipal Utilities Authority-Wallkill River Watershed Management Group (WRWMG) finalized the development of a NJDEP-approved Watershed Restoration Plan for the Papakating Creek and Clove Brook Watersheds. Through extensive stream monitoring, WRWMG identified streambank erosion, stormwater road runoff, and agricultural runoff from excessive nutrient applications and improper livestock manure management as the primary sources of impairments within the Papakating Creek and Clove Brook Watersheds.

In order to address nonpoint source pollutant loading to the Papakating Creek/Clove Brook Watersheds and implement practices that will address anticipated climate change impacts in New Jersey, such as increased precipitation intensity, the WRWMG proposes to: install riparian forested buffers along the Papakating Creek at Wantage Township's Woodbourne Park and Berry Road properties, enhance the Clove Brook riparian forest buffer at Sussex Borough's T.J. Dunn Community Park and Brookside Park, install green stormwater management infrastructure in Sussex Borough's town center to reduce nonpoint source pollutant loading to the Clove Brook, continue agreement with

USDA-NRCS in order to plan, design, and implement Agricultural Best Management Practices in Sussex County.

E. Restoration projects:

9. WQR-2020-PembTwp.-00080 $192,310

Pemberton Township
Lower Delaware

A Pemberton Township tributary of the North Branch (NB) of Rancocas Creek is experiencing significant erosion which has destabilized both stream banks, degraded downstream water quality, and is threatening to undermine a surrounding township park. The area of concern consists of a 300 linear foot section off Scrapetown Road where erosion has been documented for at least five years.

The township will install an Envirolok system—a natural bank stabilization mechanism promoting vegetative growth. Streambank stabilization in this area, a headwater of the Rancocas Creek NB, will have a significant impact on downstream water quality and encourage growth of native species and preserve the surrounding West End Park area. This project will lead to improvements in water quality within an overburdened community and safeguard against future health and safety issues for users of the park system, provide Green Infrastructure to the surrounding and upstream Environmental Justice Community, maintain park amenities currently threatened by erosive forces by stabilizing the stream channel with sustainable armoring conducive to the development of natural flora and fauna and protection of public safety.

F. Rancocas Creek Stormwater Management Project:

10. WQR-2020-BCHD-00105 $150,000

Burlington County Health Department
Lower Delaware

The goal of this proposal is to complete the Rancocas Creek Stormwater Management Project in partnership with the Rutgers Cooperative Extension Water Resources Program. This project will focus on the Smithville Lake watershed and the North Branch of the Rancocas Creek in Eastampton. The project will develop to develop and implement a stormwater management and watershed plan and subsequently implement green infrastructure best management practices to control runoff from impervious surfaces, stream bank restoration, and retention basin retrofits.

G. Statewide Community Water Monitoring Program:

11. WQR-2020-The Watershed Institute-00018 $300,000

The Watershed Institute
Statewide

The main goal of the New Jersey Watershed Watch Network is to produce a comprehensive condition assessment of New Jersey's waterways. The Network will achieve this by harnessing the existing power of Community Water Monitoring organizations and fostering new ones to produce

water quality data of known and sufficient quality. To that end, the Network has five specific goals: facilitate the flow of communication and information between and among community water monitoring programs and the NJDEP, increase quality of volunteer-collected data, develop and maintain consistent methods between volunteer programs, expand the geographic range of HUC-14 monitoring coverage, improve sustainability of volunteer monitoring programs to continue monitoring activities which are independent of government-run monitoring programs.

12. WQR-2020-HRI-00058 $90,000
Hackensack River Keeper
Northeast

Hackensack Riverkeeper will continue to conduct the Urban Watershed Education Program (UWEP) at locations in the Newark Bay Complex (this includes the Hackensack River, Newark Bay, Arthur Kill, and Hudson River) for a three-year period (2024-2026). The organization will conduct a total of eight (8) programs per school year. Each school's program will consist of three (3) day sessions with 24 students per program for three (3) years (totaling 24 education programs reaching 576 students).

This watershed education program is targeted to middle school students. Each UWEP includes one classroom day and two field days. The main topics covered include nonpoint source pollution, climate change, CSO infrastructure, water quality testing, local legacy pollutants, local fish consumption advisories, fish anatomy, casting technique, and fishing etiquette.

H. Green Infrastructure Projects in Environmental Justice Communities:

13. WQR-2020-Camden Community Partners-00100 $1,506,131
Camden Community Partnership
Lower Delaware

The goal of the Harrison and State Stormwater Infrastructure and Complete Streets (H&S SICS) is to address an interwoven set of environmental justice issues that contribute to water pollution, flooding, and livability issues that degrade both human and watershed welfare in Camden City's Cramer Hill neighborhood. H&S SICS will include elements of Green Stormwater Infrastructure (GSI) - a series of streetside bioretention basins - to maximize community and environmental benefits, gray stormwater infrastructure to augment the GSI for CSO and flooding mitigation, and complete streets elements to improve pedestrian safety and regional multi-modal mobility. The project's GSI element thus represents the H&S SICS lead priority.

The project will minimize the project area's contribution to water pollution in the Cooper River, both directly through removal of stormwater from the collection system, and indirectly by its contribution to CSO reduction at Camden City's C28 Outfall. The project will also design and construct a series of bioretention basins along the Harrison-State corridor sufficient to capture 1.25 inches of rainfall occurring variably over a two-hour storm event over the approximately 4-acre project catchment area.
An objective of the project is to improve water quality in the Cooper River through removal of Total Suspended Solids (TSS) and Nutrients (N, P) that would otherwise drain to the Cooper River.

14. WQR-2020-Rutgers -00046 $1,165,898

Rutgers, The State University of New Jersey

Northeast

This project will result in 31 green infrastructure installations placed along Fairmont Avenue, Springfield Avenue, Bergen Street, and 16th Avenue—an approximately 15-acre neighborhood near the border of the Central and South Wards of Newark. This project includes bioretention systems such as stormwater planters, curb extensions, and rain gardens. The project also includes a series of enhanced tree pits. The drainage area for these practices is 2.3 acres and will capture, treat, and infiltrate 2.7 million gallons of stormwater per year. These projects will manage stormwater runoff, help reduce stormwater flows to the combined sewer system, and provide microhabitats for birds and pollinators while adding to the aesthetics of the neighborhood.

Outreach activities will begin within the 2nd month of the project. Prerequisite design and printing of project materials (including doorknockers, banner, flyers, mailers and presentation stacks) will be done during the first month of the project. Throughout the entire project timeline, NewarkDIG will oversee communication with residents, business owners, and organizations directly adjacent to the property and in the greater affected area to inform them of design plans, potential disruptions, project benefits and job/workforce opportunities. Concurrent engagement is planned to increase the general knowledge of stormwater concerns and the benefits of green stormwater infrastructure.

15. WQR-2020-Jersey C-00073 $770,724

City of Jersey City

Northeast

This proposal is to expand Jersey City's green infrastructure initiative by partnering with Rutgers Cooperative Extension Water Resources Program to implement the following shovel-ready green infrastructure projects: installation of Martin Luther King Drive tree trenches and incorporation of green infrastructure into curb extensions at MLK Drive and Bramhall Street.

Jersey City is an environmentally overburdened community the proposal will focus on priority environmental issues, including efforts to reduce nonpoint source water pollution, reduce CSOs, and flooding in places that are at a disproportionately high risk of environmental injustice.

16. WQR-2020-The Nature Conservancy-00078 $354,893.08

The Nature Conservancy

Northeast

This project will implement a community-based green infrastructure initiative in the City of Paterson. This initiative seeks to install stormwater management features that will reduce the frequency of combined sewer overflows, sewer backups into private properties, nuisance flooding, as well as decrease the surcharging of sanitary sewers in the city. The success of the initiative will be evaluated by the number of green infrastructure practices that are installed and the reduction in the gallons of stormwater entering the combined sewer system. Additionally, the pounds of pollutants removed will be calculated for each green infrastructure practice that is installed.

The Fair Street Green Street Green Infrastructure Implementation Project, which has been identified as a high priority project to address CSO issues and restore the environment of this neighborhood. The proposed project will serve as a demonstration, or model, for how green infrastructure can be located throughout Paterson to provide nuisance flood relief, improve water quality, and beautify local neighborhoods. Paterson has 24 CSOs that discharge to the Passaic River. To eliminate CSOs, the Paterson has completed a long-term control plan (LTCP), which calls for using green infrastructure as one of the methods to reduce stormwater runoff entering the combined sewer system.

17. WQR-2020-Town of Secaucus-00049 $154,600

Town of Secaucus

Northeast

This project will result in the installation of rain gardens on Centre Avenue (located near the Town Hall Annex and other municipal buildings) where stormwater often builds up, causing flooding and contributing to the impaired water quality of the Hackensack River watershed. According to the EPA, the current condition of the Hackensack River watershed in the project location (State Waterbody ID: NJ02030103180090-01) is impaired for aquatic life and shellfish consumption. Impairment status for drinking water is unknown. As documented in the latest Integrated Report, contaminants identified in this watershed include dioxins, low oxygen, metals, PCBs, pesticides, and toxic organic chemicals. Green infrastructure design strategies will be deployed to reduce stormwater flooding and the amount of nonpoint source pollution impacting the Hackensack River.

The goals of the project are to reduce flooding in Secaucus caused by stormwater, improve stormwater filtration by green technology retrofit of rain gardens, reduce nonpoint source pollution runoff into the Hackensack River, raise awareness of the benefits of this and other local green infrastructure projects. The goals are to be achieved by constructing four rain gardens and retrofit them with green technology to filter stormwater pollutants, complete monitoring activities and prepare final reports and by a green infrastructure educational campaign.

Once complete, the rain gardens will increase the town's capacity to capture stormwater. The project will have a measurable impact on nonpoint source pollution reduction, specifically by reducing the volume of stormwater entering the Hackensack River watershed.

18. WQR-2020-Hoboken-00002 $562,060.07

City of Hoboken

Northeast

The goal of this project is to construct six green/gray tanks that target existing flooding hotspots to improve stormwater management and delay discharge to Hoboken’s combined sewer system. This will lead to fewer combined sewer overflows (CSOs) in Hoboken and a reduction in nonpoint source pollution impacting the Hudson River. The six tanks to be constructed with the requested funding will total 22,000 gallons in capacity, or 10% of the total Delay/Store/Discharge goal of the City of Hoboken.

Nonpoint source pollution originating in Hoboken is a significant contributor to the current impairment status of the Lower Hudson River. Hoboken's low elevation and coastal location results in routine flooding, sewage backups, and CSO events during wet weather, stemming from multiple source conditions: high tides, low topography, surface runoff, significant impervious surfaces, antiquated sewer infrastructure, and insufficient pumping capacity. When excess stormwater inundates the combined sewer system, CSOs release runoff and untreated or partially treated sewerage into the Hudson River, contributing to water quality impairment. In Hoboken, CSO events occur an average of five times per month and Hoboken's Long Term Control Plan seeks to lower this frequency to four times per year. Additionally, the source conditions that cause flooding, sewage backups, and CSO events often combine to pose the highest flood and public health risks to low-income and minority communities, which are predominantly concentrated in the areas of Hoboken where the planned improvements are located.

19. WQR-2020-Trenton-00104 $562,060.07
City of Trenton
Upper Delaware

The goal of this project is to install green infrastructure throughout the City of Trenton. Green infrastructure provides cost effective, sustainable solutions for addressing environmental health issues in urban communities through improved stormwater management, while also emphasizing the use of natural systems and energy efficient technologies. Increasing the amount of green area in the city will make Trenton more resilient to flooding and other climate change impacts such as the heat island effect. The project will also provide improved air and water quality for the residents and the indigenous ecosystem.

A robust network of green, native habitat will help push back against environmental degradation and the accelerated species extinction currently underway. Through strategic integration of trees and pervious surfacing within the developed infrastructure of the community, this project will provide a desperately needed green aspect to the downtown area. These measures will serve the community by retaining and filtering stormwater, while also providing a wealth of ancillary benefits such as water conservation, water reuse, wildlife habitat creation, increased plant diversity, open green space, improved air quality, and heat-island effect reduction.

Specific projects include street tree inventory of selected neighborhoods, removal of concrete in selected sidewalks to allow for the construction of long continuous stretches of planting beds with enhanced soil, improving the viability of street trees through an increase in water and oxygen infiltration into the soil. It is anticipated that 45 trees will be planted within the parking lot demonstration project and 62 trees along 4 blocks, to create a continuous network of trees in the downtown project area, implementation of water catchment systems at four existing community or school gardens of at least 500 gallons each, restructuring of the Trenton City Hall parking lot will provide a visual and physical demonstration of how parking lots should be reconfigured to reduce runoff, increase water quality and reduce temperature.

I. Climate change resilience projects:

20. WQR-2020-NY/NJ Baykeeper-00024 $220,000
NY/NJ Baykeeper

Atlantic Coast

The goals of the Naval Weapons Station Earle (NWSE)Living Shoreline Project Phase 2 are to reduce the impact of climate change and promote climate resilience by continuing to stabilize the Raritan Bay and Ware Creek shorelines and increase biodiversity with additional bottom habitat. The project also seeks to quantitively measure how the presence of a living shoreline supports increased biodiversity of associated marine species. The project will place an additional 500 oyster castles at the site. Based on data and observations from 2016 to present, partners anticipate continued placement of oyster castles at this location will increase sedimentation on the shoreward side of the installation and dampen the energy of waves approaching the shoreline, which will reduce the impact of climate change, promote climate resilience, and reduce erosion of the intertidal Spartina alterniflora marsh. The addition of 3 dimensional structures set with juvenile oysters will further increase habitat and increase species diversity. This project restores natural resources and improves habitats for local and transitory avian species, such as osprey and black crown night heron that utilize the Atlantic Flyway. This project also restores natural habitat for several species of marine life including razorback turtles, horseshoe crabs, diamondback terrapins, and various fish species.

The goals of the Naval Weapons Station Earle Living Shoreline Project Phase 2 are to: reduce the impact of climate change and promote climate resilience given increasing storm intensity, temperature, and sea-level rise by continuing to stabilize the Raritan Bay and Ware Creek shorelines and increase biodiversity with additional bottom habitat and quantitively measure how the presence of a living shoreline supports increased biodiversity of associated marine species.

21. WQR-2020-BBP/OCC-00082 $300,000
Barnegat Bay Partnership/Ocean County College
Atlantic Coast

The primary goal of this project is to improve littoral habitat and increase climate change resiliency of a public open space parcel in an overburdened community through the replacement of a hardened shoreline with installation of a living shoreline. A secondary goal is to increase public awareness of the benefits of living shorelines.

This project aims to improve the long-term resiliency of a recently acquired open space at the mouth of Jeffreys Creek and the Toms River in Ocean Gate, Ocean County, by developing a conceptual plan for shoreline stabilization of the entire site (approximately 1300 linear feet) and restoring a priority portion (approximately 300 linear feet) of the rip-rapped and bulkheaded shoreline. By replacing the hardened shoreline with a living shoreline, we will restore the littoral habitat that was previously lost, while enhancing the site's ability to respond to sea level rise. The overall design of the shoreline restoration will also consider increasing storm intensity and erosional processes and will seek to reduce the sedimentation that currently occurs at the mouth of the creek.

J. Animal Waste Management Plans:

22. WQR-2020-NJ Department of Agricult-00028 $399,024.9
NJ Department of Agriculture

Upper Delaware

The overall goal is the implementation of Animal Waste Management Plans (AWMPs) on livestock farms within 100-feet of a waterbody. This proposal includes three complementary goals that will result in improved water quality and a reduction in livestock impacts to the study watershed: AWMP outreach and development, AWMP implementation and BMP installation, and BMP installation at the DeGroot Dairy Farm.

Papakating Creek runs through north-central Sussex County and flows into the Wallkill River east of Sussex Borough. The Papakating Creek is a tributary to the Wallkill River. This watershed is approximately 60.6 square miles in area, and has three major tributaries, which include the West Branch Papakating Creek, the Neepaulakating Creek and Clove Brook. Drainage into the Papakating Creek and its tributaries is largely from rural farming areas and forests with a few low-density residential developments. The NJDEP has determined that phosphorus and fecal coliform are the main impacts to this watershed. Possible contributors are livestock agriculture and low-density residential development.

New Jersey's Animal Waste Management regulations adopted in 2009 require the implementation of an Animal Waste Management Plans (AWMP) on livestock farms by 2012. An AWMP, in part, identifies options to address water quality impacts through Best Management Practices (BMPs). Farms with 8 or more Animal Units or that land apply over 142 tons of manure are required to develop and maintain an AWMP. A BMP is a method, measure, or practice that is implemented to prevent or reduce surface and ground water pollution originating on-farm. A BMP may be used to correct existing problems and to prevent future potential degradation of water resources.