8. **Estimated Budget, Sources of Funding and Technical Assistance**

8.1. **Estimated Budget**

Table 8.1 summarizes the size of the applicable area and costs of BMP projects recommended for achieving water quality goals in the watershed.

Table 8.1: Applicable units and costs of recommended BMP projects in Neshanic River Watershed

BMP Project	Applicable Units	Unit Cost ($/unit)	Life span (years)	Total Cost ($)	Annual Cost ($/year)
	Agricultural BMP Projects				
Cover Crops	4,011 acres	315	3	1,263,180	421,060
Prescribed Grazing	892 acres	444	5	396,226	79,245
Livestock Access Control	24,663 feet	11.54	10	284,512	28,451
Contour Farming	1,846 acres	117	3	215,267	71,756
Nutrient Management	9,645 acres	117	3	891,548	297,183
Conservation Buffers on Agricultural Lands	988 acres	6,027	15	5,955,005	397,000
Regional Animal Waste Storage and Composting Structure	5 units	90,000	10	450,000	45,000
Manure Application Incorporation Technology	330 acres	156	1	51,480	51,480
Subtotal for Agricultural BMP Projects				*$9,507,219*	*$1,391,175*
	Stormwater BMP Projects				
Rain Gardens	3,545 units	4,150	15	14,711,750	980,783
Roadside Ditch Retrofitting	853 units	23,500	15	20,045,500	1,336,367
Detention Basin Retrofitting	153 units	29,500	15	4,513,500	300,900
Vegetative Buffers on Developed Lands	27,603 feet	4.84	15	133,657	8,910
Subtotal for Stormwater BMP Projects				*$39,404,407*	*$2,626,960*
	OSDS BMP Projects				
OSDS Inspection and Maintenance	1,490 units	600	3	894,000	298,000
Failed OSDSs Retrofitting	447 units	15,000	15	6,705,000	447,000
Subtotal for OSDS BMP Projects				*$7,599,000*	*$633,250*
Total				*$56,510,626*	*$4,763,136*

There are eight agricultural BMP projects, four stormwater BMP projects and two OSDS BMP projects. The first column lists the recommended BMPs. The second column gives the applicable units in terms of the size of the application area, or length or units to which the BMP could potentially be applied. The third column lists the unit application costs, including BMP installation, maintenance and other costs estimated by the project team from the best available

information about implementing those BMPs in the watershed and surrounding regions. The fourth column is the life span of each BMP, which is used to calculate the annual costs of BMP projects. The second to last column is the total cost of the recommended BMP projects if they are applied to all applicable units in the watershed. It is the product of the applicable unit and the unit cost. The last column is the annual cost, which is the total cost divided by the life span of the BMP.

The total cost of implementing the eight agricultural BMP projects is about $9.5 million, of which more than half is for conservation buffers on agricultural lands. Total cost of the four stormwater BMP projects is estimated to be $39.4 million. Retrofitting roadside swales and ditches in the watershed accounts for half of the costs. Total cost of establishing the comprehensive OSDS inspection and maintenance programs and eliminating the failing OSDSs in the watershed is $7.6 million. Implementing all recommended BMP projects is estimated to cost $56.5 million and is expected to achieve or exceed the load reduction targets for TP, sediment and pathogens and restore the hydrology of the Neshanic River Watershed.

It is probably not realistic to implement all 14 recommended BMP projects at the same time. Natural resource conditions may restrict the application of BMPs to suitable lands in the watershed. Some farms or landowners may resist implementing any BMPs on their lands. For example, although cover crops are suitable for use on 4,011 acres of row-crop fields in the watershed, it is not realistic to expect 100 percent landowner participation to use cover crops. Nevertheless, it may be possible to achieve the required pollutant load reduction by implementing some of the recommended BMP projects in suitable areas. Any implementation plan should balance the physical restrictions of natural resource conditions, stakeholders' willingness and ability to act, and financial feasibility. Table 8.2 gives implementation targets for the recommended BMP projects in terms of the percentage or physical units to which BMP projects are applied and target reductions in TP and sediment. Targets are based on the cost-effectiveness of BMPs, feasibility of implementation and the need to achieve the required reduction targets. Expected annual load reductions in TP and sediment achieved by reaching the targeted reductions are 6,632 pounds and 324 tons, respectively, which should be sufficient to achieve 49 percent reduction in TP and more than 9 percent reduction in sediment. Estimated total implementation cost of achieving the targeted reductions in TP and sediment is $14.6 million. Of the total implementation cost, 52 percent is for inspecting and maintaining OSDSs and retrofitting failing OSDSs in the watershed and 20 percent is for installing conservation buffers on 494 acres of agricultural lands.

The estimated reduction in TP is conservative for several reasons. First, almost all of the BMP projects for reducing the pathogenic loads also reduce TP loads. Second, implementation of the newly enacted Fertilizer Control Law and municipal low-phosphorus ordinances for lawn care should substantially reduce TP loads from urban lands. Third, targeting the application of BMP projects in the Critical Source Areas (CSAs) should reduce pollutant loads much more than the average reduction rates used in the estimates reported in Table 8.2. Third, although quantification of pathogenic load reduction is difficult, the required 89 percent reduction in pathogens (both fecal coliform and *E. coli*) should be achieved by eliminating failing OSDSs, improving manure application and completely excluding livestock from accessing the streams in the watershed.

Table 8.2: Implementation targets and costs for recommended BMP projects in Neshanic River Watershed

Types of BMP Projects		Area Implementation Target		Reduction Target		Implementation Cost	
				TP (lbs)	Sed. (tons)		
		%	Unit			$	%
1	Cover Crops	50	2,006 acres	392	40	631,590	4.3
2	Prescribed Grazing	50	446 acres	190	8	198,113	1.4
3	Livestock Access Control	100	24,663 feet	913	52	284,512	2.0
4	Contour Farming	75	1,385 acres	380	55	161,451	1.1
5	Nutrient Management	75	5,734 acres	2,608		668,661	4.6
6	Conservation Buffers on Agricultural Lands	50	494 acres	1,850	125	2,977,503	20.5
7	Livestock Waste Storage and Composting Structure	100	5 units			450,000	3.1
8	Manure Application Incorporation Technology	75	248 acres			38,610	0.3
9	Rain Gardens	1	35 units			147,118	1.0
10	Road Ditches	1	9 units	2		200,455	1.4
11	Detention Basin Retrofitting	25	39 units	277	35	1,135,750	7.8
12	Vegetative Buffers on Developed Lands	50	13,802 feet	19	10	66,828	0.5
13	OSDS Inspection and Maintenance	100	1,490 units			894,000	6.1
14	Failed OSDS Retrofitting	100	447 units			6,705,000	46.1
Total				6,632	324	14,559,591	100.0

8.2. **Existing Sources of Funding and Technical Assistance**

There are various funding programs landowners, homeowners and businesses can use to implement various BMPs to improve water quality in the watershed. Some programs offer technical and cost share assistance up to 100 percent of the project cost.

8.2.1. Natural Resources Conservation Service

8.2.1.1. Wildlife Habitat Incentives Program (WHIP)

WHIP is a voluntary USDA program for landowners who want to improve or develop fish and wildlife habitat on nonfederal lands. The program provides both technical and financial assistance to establish and enhance habitat for priority species and habitat types. Landowners work with NRCS to prepare and implement a wildlife habitat development plan that becomes the basis for a contract. If a contract is funded through a competitive bidding process, the landowner receives payments for completed practices that create or improve wildlife habitat. There is a $50,000 per year limit ($200,000 total over four years) on WHIP contracts, although most

average around $15,000. Partnering agencies and organizations may provide additional technical and financial assistance.

The NRCS and their wildlife partners in New Jersey have developed a state plan to direct WHIP financial and technical assistance to several areas. Applications are accepted year-round for individual projects that meet one of the following objectives.

- Early Successional Priority Habitat – Create, restore or manage for early successional habitats, such as grasslands, savannahs and emergent wetlands, which provide habitat for declining wildlife species. Emphasis is on establishing native plant species, including species that provide nectar, pollen and larval food sources for pollinators that benefit agriculture in New Jersey.
- Wetland Priority Habitat – Create, restore and manage wetland habitats, including forested wetlands, coastal wetlands and riparian habitats. Stream restoration and enhancement projects are covered under this category. The focus is on land not likely to be funded by the Wetlands Reserve Program.
- Disturbance-dependent Priority Habitat – Manage habitats that depend upon a natural or human-induced disturbance in order to create conditions suitable for regenerating or maintaining these unique habitats. Examples of habitats include Atlantic white cedar forests, scrub/shrub habitats and fire dependent plant communities.
- Bog Turtle Priority Species – Enhance or maintain habitat for this federally threatened species that occurs infrequently on farms throughout most of New Jersey.

Conservation buffers provide water quality and wildlife benefits. WHIP offers producers many opportunities to implement conservation buffers in the watershed. Applications are accepted year-round, which allows producers to apply when it is most convenient for them. On average, payments for conservation practices are 60 - 90 percent of the total cost. One of the most attractive features of the WHIP is that the contract agreement lasts approximately five years. This allows a reasonable time frame for tenant producers to implement conservation buffers. On the negative side, WHIP does not offer annual payments to producers that take land out of production. Conservation buffers fall under the wetland priority habitat objective. This objective focuses on land not likely to be funded by the Wetlands Reserve Program.

8.2.1.2. Environmental Quality Incentives Program (EQIP)

EQIP is a voluntary conservation program for persons engaged in livestock or agricultural production. It offers financial and technical assistance to implement conservation practices on eligible agricultural land. The NRCS professionals work with producers to develop conservation plans for their operation, design conservation practices, and provide guidance in plan implementation.

EQIP is designed to assist producers in adopting conservation practices that address existing resource concerns on farms and improve environmental quality on and off farms. Resource concerns addressed by EQIP include reducing soil erosion and improving soil quality, increasing water quality and quantity, improving air quality and protecting animal and plant species of concern. The NRCS, with input from the State Technical Committee, determines the eligible practices that address state and local resource concerns. The EQIP program provides cost share and technical assistance for almost all eligible agricultural BMPs.

The NRCS FOTGs provide more detailed information on each type of practice and specifications for eligible BMPs. They are localized meaning they apply to the geographic area for which they are prepared.

Applications can be submitted anytime during the year. The first step in the application process is submitting to the local NRCS office a signed application indicating interest in developing a conservation plan. During the annual evaluation period, NRCS makes contract offers to landowners based on approved conservation plans. Plans are ranked based on how well they meet national, state and local environmental objectives as well as their cost-efficiency.

EQIP offers contracts with a minimum term that ends one year after the implementation of the last scheduled practice and a maximum term of ten years. Contracts provide pre-determined program payments to the producer for the implementation of planned practices according to a schedule developed in conjunction with the producer. The schedule identifies the conservation practice extent (amount), date to be installed, and payment. Practices are subject to NRCS technical standards, which are adapted to local conditions. Any deviation from the contract schedule is considered a contract violation unless approved in advance.

Program payment rates in New Jersey are between 45 and 60 percent of the typical cost of implementing the practice, except when the applicant is a beginning farmer or limited resource producer, in which case the rates are between 75 and 90 percent of the typical cost. Payments are made after conservation practices are fully implemented.

Applicants must be compliant with all conservation provisions of the 2002 farm bill and have current crop and producer records on file with USDA’s Farm Service Agency. In addition, applicants must own or control the land, agree to implement specific eligible conservation practices according to the contract schedule, and qualify for farmland assessment.

All the agricultural BMPs proposed here are eligible for EQIP funding. However, there are some implementation barriers. In Hunterdon County, over 40 percent of all farmed acres are operated by tenant farmers; those farmers are ineligible for EQIP funding. On average, half the cost of implementation must be paid by the producer. Many small farms in New Jersey may not be able to pay even half the cost of implementing approved practices. A higher cost-share rate would encourage more farmers to enroll in the program.

8.2.2. Farm Service Agency

8.2.2.1. Conservation Reserve Program (CRP)

The CRP is a voluntary program for agricultural landowners. Successful CRP applicants receive annual rental payments and cost-share assistance to establish long-term, resource conserving covers on eligible farmland. Annual rental payments are made by the Commodity Credit Corporation. Payments are based on the agricultural rental value of the land and provide cost-share assistance for up to 50 percent of the participant's cost of establishing approved conservation practices. Participants enroll in CRP contracts for 10 to 15 years. The Farm Service Agency (FSA) administers CRP. Technical assistance is provided by NRCS, USDA's Cooperative State Research, Education, and Extension Service, state forestry agencies, local soil and water conservation districts and private technical service providers.

Producers can offer land only during CRP general sign-up periods. Environmentally desirable land devoted to certain conservation practices may be enrolled at any time under CRP's continuous sign-up. The latter focuses on smaller portions of a farm field rather than the entire field as does the traditional CRP. There are certain eligibility requirements for the continuous CRP signup.

To be eligible for CRP enrollment, a producer must have owned or operated the land for at least 12 months prior to close of the CRP sign-up period, unless:

- The new owner acquired the land due to the previous owner's death;
- The ownership change occurred due to foreclosure where the owner exercised a timely right or redemption in accordance with state law; or
- The circumstances of the acquisition present adequate assurance to FSA that the new owner did not require the land for the purpose of placing it in CRP.

For land to be eligible for enrollment in the CRP, one of two conditions must be satisfied:

- Cropland (including field margins) must have been planted or considered for planting to an agricultural commodity in four of the previous six crop years from 1996 to 2001, and cropland must be physically and legally capable of being planted in a normal manner to an agricultural commodity; or
- Certain marginal pastureland that is suitable for use as a riparian buffer or for similar water quality purposes.

In addition to the eligible land requirements, cropland must meet one of the following criteria: have a weighted average erosion index of 8 or higher; be expiring CRP acreage; or be located in a national or state CRP conservation priority area.

FSA provides CRP participants with the following:

- Rental Payments - In return for establishing long-term, resource-conserving covers, FSA provides annual rental payments to participants. FSA bases rental rates on the relative productivity of the soils within each county and the average dry land cash rent or cash-rent equivalent. The maximum CRP rental rate for each offer is calculated in advance of enrollment. Producers may offer land at that rate or offer a lower rental rate to increase the likelihood that their offer will be accepted.
- Maintenance Incentive Payments - CRP annual rental payments may include an additional amount up to $4 per acre per year as an incentive to perform certain maintenance obligations.
- Cost-share Assistance - FSA provides cost-share assistance to participants who establish approved cover on eligible cropland. The cost-share amount cannot be more than 50 percent of the participant's costs in establishing approved practices.
- Other Incentives - FSA may offer additional financial incentives of up to 20 percent of the annual payment for certain continuous sign-up practices.

Offers for CRP contracts are ranked according to the Environmental Benefits Index. FSA collects data for each of the affecting factors that determine the relative environmental benefits for the land offered. Each eligible offer is ranked in comparison to all other offers and selections made from that ranking. FSA uses the following affecting factors to assess the environmental benefits that can be achieved by enrolling land in the CRP: wildlife habitat benefits resulting

from covers on contract acreage; water quality benefits from reduced erosion, runoff and leaching; on-farm benefits from reduced erosion; benefits that are likely to endure beyond the contract period; air quality benefits from reduced wind erosion; and cost.

The combination of cost share for practice implementation and annual payment for land taken out of production is attractive to many landowners and farm operators. Unfortunately, the application process and program requirements often discourage interested applicants from submitting bids for enrolling land in the program. Landownership and enrollment for a minimum contract period of 10 years are other obstacles to participation. The application process for farm rental land must involve both the owner and farm operator. The crop history requirement is another hurdle since the farmers may not be able to document the crop history.

8.2.2.2. Conservation Reserve Enhancement Program (CREP)

CREP is a voluntary land retirement program for agricultural producers that protects environmentally sensitive land, decreases erosion, restores wildlife habitat and safeguards ground and surface water.

CREP is a joint, voluntary state-federal conservation program targeted to reducing environmental impacts of agricultural production. The program co-sponsors, NJDA and NJDEP, offer financial incentives to encourage farmers to create stream buffers on existing farmland. Program objectives are to: maintain and improve water quality by reducing agricultural pollutants into streams; enhance farm viability; and contribute to the State's open space goals.

The agricultural community supports the CREP program because it provides a way for New Jersey farmers to be recognized and compensated for their environmental stewardship. The industry also supports the voluntary nature of the program and its ability to enhance farm viability.

Like CRP, farmland enrolled in the CREP is a under rental contract for 10-15 years or placed into both a permanent easement contract and a 10-15 year contract agreement designed to reduce nonpoint source pollution through the preservation of stream buffers and implementation of conservation practices on existing farmland. Through a combination of cost share and incentive payments, the program pays 100 percent of the cost of establishing conservation practices and annual rental and maintenance payments to the landowner. To be eligible for CREP, land must be owned or leased for at least one year prior to enrollment, and must be physically and legally capable of being cropped in a normal manner. Like the CRP, CREP-enrolled land must meet cropping history and other eligibility requirements. Marginal pastureland is eligible for enrollment provided it is suitable for use as a buffer practice. Enrollment is on a continuous basis, permitting farmers and ranchers to join the program at any time.

Eligible CREP practices in New Jersey include Grass Waterways, Establishment of Permanent Vegetative Cover, Filter Strips and Riparian Buffers. Filter strips and forested buffers on farmland are specifically supported by the program. Annual rental rates and cost share for CREP projects are significantly greater than for the traditional and continuous CRP. Like the CRP program, the combination of cost share for practice implementation and annual payment for land taken out of production is attractive to many landowners and farm operators. Unfortunately, the application process and program requirements often discourage interested applicants from

applying to the program. Like the CRP, the application process for rental farm land must involve both the owner and farm operator. Providing a crop history is another hurdle. Another obstacle to potential applicants for this program is the requirement that applicants limit activities on their land for a minimum of ten years. Tenant farmers may have a lease agreement that does not permit them to enroll leased land the CRP. Enrolling in a long-term contract can be a deterrent even for owner-operators.

8.2.3. US Fish & Wildlife Service

8.2.3.1. Partners for Fish and Wildlife (PFW)

PFW, a national program implemented by the U.S. Fish & Wildlife Service, is designed to protect, enhance and restore important fish and wildlife habitats on private lands through partnerships. The PFW program has the potential to protect some of America's most important natural resources. It is a voluntary cost-share program that builds on the strength and interest of committed individuals and organizations to accomplish shared conservation goals. Traditionally, the PFW program focused on wetland restoration. It has been expanded to include aquatic, upland and riparian (natural stream and river bank) restoration. Since the program's New Jersey debut in 1991, the Service's New Jersey Field Office and partners have worked to restore 6,499 acres of wetlands, 3,009 acres of uplands and 49 miles of riparian areas.

Areas with the highest restoration potential in New Jersey include: disturbed coastal and bay salt marshes; grazed and urban riparian areas; farmed or drained wetlands; drained vernal (recurring or temporary) ponds; former cranberry bogs; wetlands in the Hackensack Meadowlands; abandoned mining sites; shrub/dune communities; grasslands; and fragmented forests. Private, county, municipal or tribal lands meeting the program's goals and guidelines are eligible to apply to the PFW program.

Proposed projects are evaluated for their restoration potential and ability to meet the program's goals and guidelines. For qualifying projects, the Service provides plans and recommendations, assistance with implementation and funds for restoration work. Landowners must sign an agreement to maintain a restored site for at least 10 years (commitments of greater than 20 years are preferred). Because of federal funding limitations, cost sharing is an integral part of the program. In-kind services (e.g., labor, machinery, materials) and funds from partners are essential to the PFW program.

The application and contract process for the PFW program is far less involved than many other federal programs and, as such, is attractive to producers and landowners. The in-kind services offered by agencies and communities encourage landowners to implement such practices on their lands. As with other programs, an obstacle for many landowners is the minimum 10-year commitment to maintain the restored site.

8.2.3.2. Bring Back the Natives (BBN)

The BBN program includes projects that restore aquatic species to their historic range, improve and enhance aquatic and riparian habitats to support native fish species, restore the health of aquatic systems to benefit native species in the Nation's waters and watersheds and

develop conservation partnerships between federal and non-federal entities for restoration of aquatic systems.

The BBN is a cooperative effort between the National Fish and Wildlife Foundation (NFWF), U.S. Fish & Wildlife Service, Bureau of Land Management, USDA Forest Service, Bureau of Reclamation and Trout Unlimited to restore native aquatic species and their habitats through local and regional partnerships. The New Jersey Field Office implements this program throughout the state. Under BBN, the Foundation matches federally funded challenge grants with contributions from private foundations, corporations, individuals, state and local governments and non-profit organizations for conservation projects.

Areas with the highest restoration potential in New Jersey include: waterways with dams or spillways currently impeding migratory fish passage; fish nursery areas; grazed and urban riparian areas; native trout streams; state reservoirs; and previously disturbed waterways that support native fish species. Any project meeting the program's goals and guidelines is eligible. In addition to native fish species, BBN provides opportunities to restore habitat for native mussel, invertebrate and amphibian species.

Proposed projects are evaluated for restoration potential, available matching funds and consistency with program's goals and guidelines. The US Fish & Wildlife Service helps develop and submit grant proposals for qualifying projects, but projects selected by the NFWF must match or exceed federal funding with non-federal contributions. Matching funds can be monetary contributions or in-kind services such as labor, machinery or materials. If the NFWF selects the project, the US Fish & Wildlife Service administers the grant and provides technical assistance. The NFWF accepts BBN project proposals on a continuing basis.

BBN funding to successful applicants is given as grants rather than contracts. The application process may discourage landowners from applying to the program. Although, the BBN program is an excellent resource for community projects that improve water quality and restore native habitat, it provides little incentive for producers. Neither rental rates nor cost share for establishment and long-term maintenance costs are provided to producers.

8.2.4. U.S. Environmental Protection Agency

8.2.4.1. Five Star Restoration Challenge Grants

The Five Star Restoration Program (FSRP) brings together students, conservation corps, other youth organizations, citizen groups, corporations, landowners and government agencies to provide environmental education through projects that restore streambanks and wetlands. The program provides challenge grants, technical support and opportunities for information exchange to enable community-based restoration projects.

The FSRP was established by EPA to facilitate collaboration with its partners in advancing education through community-based wetlands restoration projects in watersheds across the U.S. The National Association of Counties, National Fish and Wildlife Foundation, and Wildlife Habitat Council are partners with EPA in this effort. Funding for selected projects in coastal areas is provided by EPA's Office of Wetlands, Oceans and Watersheds, and National Marine Fisheries Service's Community-based Restoration Program.

The FSRP develops knowledge and skills in young people through restoration projects that involve multiple and diverse partners, including local government agencies, elected officials, community groups, businesses, schools, youth organizations and environmental organizations. The objective of the program is to engage five or more partners in each project and contribute funding, land, technical assistance, workforce support or other in-kind services that match the program's funding assistance. Consideration for project funding is based upon the educational and training opportunities for students and at-risk youth, ecological benefits, and social and economic benefits to the community.

EPA's funding levels are modest, averaging about $10,000 per project. However, when combined with the contributions of partners, it is possible to have projects that make a meaningful contribution to communities. It is expected that, at the completion of Five Star projects, each partnership will have experience and a demonstrated record of accomplishment, and will be well-positioned to take on other projects. Having multiple projects over time and space is expected to generate significant benefits for environmental landscapes and advance understanding of the importance of healthy wetlands and streams in communities.

8.2.5. NJ Department of Environmental Protection

8.2.5.1. U.S. E.P.A 319(h) Nonpoint Source Pollution Control Grants

The purpose of this program is to provide grants to regional comprehensive planning or health organizations and coalitions of municipal and county governments and/or local and county environmental commissions, watershed and water resource associations and nonprofit 501(c)(3) organizations. Potential beneficiaries of this program include, but are not limited to: municipal planning departments or boards; health departments or boards; county planning departments; designated water quality management planning agencies; state and regional entities entirely within New Jersey; state governmental agencies; universities and colleges; federal government; interstate agencies of which New Jersey is a member; and intrastate regional entities. Funds are used to conduct nonpoint source management in the 20 watershed management areas in New Jersey through the Section 319(h) federal Clean Water Act. There is approximately $3 million in federal funds available for the program, which can vary depending upon the annual federal budget.

319(h) funding is available for a wide variety of agricultural and stormwater BMPs identified in the watershed restoration plan. An applicant must submit a project that meets the administrative requirements, objectives and project criteria as outlined in the 319(h) grant guidelines outlined by the NJDEP. 319(h) projects are funded as grants. The application process may discourage some landowners from applying to the program. However, it is an option for community-based large scale projects that control NPS and generate multiple water quality benefits.

8.3. **Alternative Funding Sources**

Existing federal and state funding programs offer opportunities to implement various stormwater and agricultural BMPs to reduce pollutant loads and improve water quality. Unfortunately, such programs do not necessarily provide a reliable source of funding for watershed restoration efforts. Given the current budget crises faced by all level of governments,

continued governmental funding is uncertain and the likelihood of less or no funding is high. In general, the demand for funds exceeds the supply of funds for watershed restoration. For that reason, development of alternative funding sources is necessary to ensure the continuation of watershed restoration efforts. To meet the increasing demand for funds in watershed restoration, alternative funding sources are proposed to support the watershed BMPs contained in the proposed plan. These funding sources can be used separately or in combination.

8.3.1. Stormwater Mitigation Fund

Raritan Township currently operates a stormwater mitigation fund that collects funds from new developments on forest land in the township. The funds are used to implement stormwater management projects that mitigate the impacts of increased stormwater runoff. Such programs should be expanded to all new development projects in the watershed that increase impervious land surfaces. The funding amount for each new development will be based on the scale and location of the projects, the ratio of impervious surface to pervious surface in the developments and the use of stormwater management practices in the developments. The expanded stormwater mitigation fund will be used exclusively to implement proposed stormwater BMPs in the watershed.

8.3.2. Stormwater Utility Fund

Just like water and sewer utilities, a stormwater utility fund is a mechanism that allows municipalities to collect a fee from homeowners and businesses that discharge stormwater into the stormwater system. A stormwater utility fund has been authorized and used by many county and municipal governments to finance stormwater management. The Morris County Planning Board (2005) outlined several alternative financial mechanisms that municipalities can use to finance stormwater management. These financial mechanisms include:

- A general fund consisting of property tax revenues, state and federal revenue sharing, municipal state aid, franchise fees, fines/penalties, etc;
- Local improvement assessments imposed on properties that benefit from the improved stormwater management facilities or projects;
- Homeowners associations for improving the stormwater management in residential neighborhoods;
- Fees/Licenses/Permits that cover the cost of permit review, enforcement and the inspection of construction;
- Penalties and fines;
- Bonds for large capital improvement projects/programs;
- Pay-as-you-go sinking fund that is used as an adjunct to revenue bond financing;
- Developer contributions to construct stormwater management facilities within developments that are dedicated to the local government upon completion;
- Developer contributions for off-tract improvements needed to serve their and other developments in complying with stormwater management requirements;
- Developer incentives to use proper stormwater management planning techniques; and

- Stormwater utility fund for operating stormwater management programs, including administration, routine operation and maintenance, renewal/replace, capital improvement and monitoring.

These mechanisms can be used to finance watershed restoration. The Morris County Planning Board (2005) compared the advantages and disadvantages of the mechanisms listed above and concluded that a stormwater utility fund is the most equitable means of generating funds to pay for stormwater management. A stormwater utility fund has proven effective in financing and improving stormwater management in many other states in the U.S. Such a fund has not been authorized in New Jersey. In March 3, 2008, assemblymen John S. Wisniewski and John F. McKeon introduced Assembly Bill No. 2411 to the 213th State Legislature. The purpose of bill was to establish a stormwater utility fund. The bill failed to pass. Additional effort is needed to move the bill through the State Legislature.

Implementation of a stormwater utility fund should not be considered as an additional financial burden on homeowners and businesses, but rather as a financial framework that motivates homeowners and businesses to be better environmental stewards. Credits should be given to homeowners and businesses that invest in stormwater management and control stormwater runoff from their properties. Such credits could offset their payment obligations to the stormwater utility fund. The stormwater utility fund collected from the properties with poor stormwater management practices could be used to finance large capital stormwater improvement projects.

8.3.3. Water Quality Trading

Water quality trading uses the market to efficiently achieve an overall load reduction for water quality and watershed restoration goals. Different stakeholders face different costs for reducing pollutant loads into the streams in the watershed by the same amount. Water quality trading allows the stakeholders facing higher pollutant load reduction costs to meet their regulatory requirement in load reduction by purchasing the equivalent amount of pollution load reduction from other stakeholders who have lower pollutant load reduction costs. A result, the total pollutant load reduction goal for the watershed is achieved at least cost to stakeholders.

Ideally, a water quality trading market operates at large geographic scale, such as the Raritan River Basin. The Neshanic River Watershed may be too small for effective operation of a water quality trading market. However, the economic principle behind water quality trading can be applied to minimize the overall cost of achieving the watershed restoration goal. For example, the unit cost of reducing the phosphorus load from urban land is higher than from agricultural land. One way of apply the economic principle is to collect funds from the stakeholders in urban land and use the funds to pay farmers to implement agricultural BMPs to reduce the equivalent amount of phosphorus load from agricultural land. A regional water quality trading program in the Raritan River Basin would help implement the proposed BMPs in the watershed.

8.3.4. Low-interest or No-interest Loans for Capital Improvement Projects

Implementing some BMPs proposed in the Plan requires a large amount of capital. Examples of such BMPs include the stormwater detention basin retrofitting and OSDSs replacement/retrofitting. Financial arrangements should be available that allow property owners to easily access the financial capital needed to carry out those projects. One way to do it is to provide low-interest or no-interest loans to qualified landowners who are interested in and/or under regulatory obligations to carry out those projects. Such a program would be similar to various incentive programs for renewable energy and energy efficiency under the New Jersey Clean Energy Program run by the Board of Public Utilities. One particular example is the Home Performance with Energy Star program that offers financial incentives on energy efficient improvement packages for private homes such as air sealing, insulation, HVAC (heating, ventilation and air conditioning), DHW (domestic hot water) and other eligible measures. The program offers convenient, zero-interest financing or cash incentives are available to help pay for such home improvements made by participating BPI accredited contractors. There are no application fees or closing costs, and the loans do not require a down payment. As the old energy inefficient homes waste energy and generate larger carbon footprint, the failing OSDSs in private homes causes public health and environmental hazards, and thereby should be addressed in a similar manner. There is currently no such program available to assist homeowners who undertake OSDS retrofitting projects. A funding source needs to be identified and developed to implement such program.