

10. Implementation Plan and Milestones

The implementation plan refers to how the agricultural and stormwater BMPs discussed in Chapters 7 and 8 will be implemented in the watershed over time. The planning time horizon for implementing the plan is 10 years. The implementation plan will be discussed in several timeframes: 1-2 years; 5 years; and 10 years. Milestones are measurements of the expected decreases in pollutant loads from implementing these BMPs. The implementation plan and milestones are discussed together in different timeframes during the planning time horizon.

10.1. Implementation Plan and Milestones in First Two Years

During the first two years after the Plan is adopted, the four municipalities in the watershed should:

- Educate residents, farmers and businesses on water quality of the Neshanic River and responsible stewardship in land use and management;
- Establish concrete steps for implementing the New Jersey State Rules for improving water quality and/or preventing water quality from continuous deterioration. These rules include the New Jersey Pollutant Discharge Elimination System Stormwater Regulation Program rules (N.J.A.C. 7:14A), the Stormwater Management Rules (N.J.A.C. 7:8), the Flood Hazard Area Control Act rules (N.J.A.C. 7:13), the Freshwater Wetlands Protection Act Rules (N.J.A.C. 7:7A), the Criteria and Standards for Animal Waste Management (N.J.A.C. 2:91) and the newly enacted Fertilizer Control Law for commercial and residential lawn care and management.
- Refine their open space and farmland preservation plan that addresses the protection of hydrologically sensitive areas from future developments.
- Develop the municipal ordinance on OSDS inspection, maintenance and operation that requires a 3-year certification program.
- Work with federal, state and county governmental agencies, universities, non-governmental and non-profit agencies and local environmental consulting firms to apply and secure the necessary funding and technical assistance needed to implement the proposed BMP projects in the watershed.

Table 10.1 describes the implementation goals, expected pollutant load reduction in TP and sediment and the implementation costs in the first two years of the plan implementation. The implementation goal is expressed as a percentage of full implementation and in physical units, such as acres and feet. For example, 25 percent of livestock exclusion fence, which is equivalent to 6,166 feet, must be installed to reduce livestock access to streams in the watershed. The inspection of all OSDSs in the watershed must be conducted in the first two years of the plan implementation. The expected load reductions for TP and sediment assume BMP projects are implemented individually. The expected total load reduction from all BMP projects is 1,770 pounds for TP and 75 tons for sediment. In reality, several BMP projects might be implemented in the same field, and therefore the load reduction level could make the load reductions smaller than the sum of the expected load reductions from all BMPs. However, if all the BMP projects are implemented in high priority areas, the load reduction could be even greater than the load

reduction given in Table 10.1, which is estimated from average reduction rates. The total implementation cost is estimated at \$3.4 million.

Table 10.1: Implementation goals, expected pollutant load reductions and implementation costs of BMP projects for the first two years of plan implementation

Types of BMP Projects		Implementation Goal		Reduction Goal		Implementation Costs	
				TP (lbs.)	Sed. (tons)	\$	%
		%	Unit				
1	Cover Crops	10	401 acres	78	8	126,318	3.7
2	Prescribed Grazing	10	89 acres	38	2	39,623	1.2
3	Livestock Access Control	25	6,166 feet	228	13	71,128	2.1
4	Contour Farming	25	462 acres	127	18	53,817	1.6
5	Nutrient Management	25	1,911 acres	869	0	222,887	6.6
6	Conservation Buffers in Agricultural Lands	10	99 acres	370	25	595,501	17.6
7	Livestock Waste Storage and Composting Structure	20	1 units	0	0	90,000	2.7
8	Manure Application Incorporation Technology	25	83 acres	0	0	12,870	0.4
9	Rain Gardens	0.1	4 units	0	0	14,712	0.4
10	Road Ditches	0.1	1 units	0	0	20,046	0.6
11	Detention Basin Retrofitting	5	8 units	55	7	227,150	6.7
12	Vegetative Buffers in Developed Lands	10	2,760 feet	4	2	13,366	0.4
13	OSDS Inspection	100	1,490 units	0	0	223,500	6.6
14	Failed OSDS Retrofitting	25	112 units	0	0	1,676,250	49.5
Total				1,770	75	3,387,166	100.0

The first two-year implementation of the BMP projects and regulatory framework as well as the education and outreach efforts would achieve the following milestones for pollutant reduction goals and attainment of water quality standards:

- Prevent the continuous deterioration in water quality and watershed hydrology;
- Reduce annual TP load by 1,770 pounds, which is close to 30 percent of the required annual load reduction in TP;
- Reduce annual sediment load by 75 tons, which is equivalent to 50 percent of the required annual load reduction in sediment; and
- Reduce annual pathogenic loads by 5 percent of the goal.

10.2. Implementation Plan and Milestones in First Five Years

Table 10.2 shows the cumulative implementation goals, expected pollutant load reduction in TP and sediment and implementation costs during the first five years of plan implementation. In addition to expanding the BMP projects started in the first two years of implementation, the first five years involves substantial work to reduce pathogenic loads to the streams, including retrofitting all failed OSDSs in HSAs found through OSDS inspection, completing regular OSDS maintenance, establishing and operating the small regional animal waste storage and composting

structure facilities and improving manure application efficiency. A total cumulative cost of plan implementation for the first five years is \$8 million.

Table 10.2: Implementation goals, expected pollutant load reductions and implementation costs of BMP projects in first five years of plan implementation

Types of BMP Projects		Implementation Goal		Reduction Goal		Implementation Costs	
				TP (lbs.)	Sed. (tons)	\$	%
		%	Unit				
1	Cover Crops	25	1,003 acres	196	20	315,795	3.9
2	Prescribed Grazing	25	223 acres	95	4	99,057	1.2
3	Livestock Access Control	50	12,332 feet	456	26	142,256	1.8
4	Contour Farming	50	923 acres	253	36	107,634	1.3
5	Nutrient Management	50	3,823 acres	1,739	0	445,774	5.6
6	Conservation Buffers in Agricultural Lands	25	247 acres	925	63	1,488,751	18.5
7	Livestock Waste Storage and Composting Structure	60	3 units	0	0	270,000	3.4
8	Manure Application Incorporation Technology	50	165 acres	0	0	25,740	0.3
9	Rain Gardens	0.5	18 units	0	0	73,559	0.9
10	Road Ditches	0.5	4 units	1	0	100,228	1.2
11	Detention Basin Retrofitting	15	23 units	166	21	681,450	8.5
12	Vegetative Buffers in Developed Lands	25	6,901 feet	10	5	33,414	0.4
13	OSDS Inspection and Maintenance	100	1,490 units	0	0	894,000	11.1
14	Failed OSDS Retrofitting	50	224 units	0	0	3,352,500	41.7
Total				3,842	175	8,030,157	100.0

The first five-year implementation of the BMP projects and regulatory framework as well as the education and outreach efforts would achieve the following milestones for pollutant reduction goals and attainment of water quality standards:

- Improve the water quality and watershed hydrology;
- Reduce annual TP load by 3,800 pounds, which is equivalent to 60 percent of the required annual load reduction for TP;
- Reduce sediment load by 175 tons, which exceeds the required annual load reduction in sediment; and
- Reduce annual load of pathogens by 60 percent of the goal.

10.3. Implementation Plan and Milestones in First Ten Years

Table 10.3 gives the cumulative implementation goals, estimated costs and expected pollutant load reduction for TP and sediment during the first ten years of plan implementation. In the second five years, the BMP projects implemented during the first five years are expanded to cover more areas of the watershed. Total cost of accomplishing the implementation goal for the first ten years is \$14.6 million.

Table 10.3: Implementation goals, expected pollutant load reductions and implementation costs of BMP projects in 10 years

Types of BMP Projects		Implementation Goal		Reduction Goal		Implementation Costs	
				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 in 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 in 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

The ten-year implementation of the BMP projects and regulatory framework as well as the education and outreach efforts would achieve the following milestones toward achieving pollutant reduction goals and attaining water quality standards:

- Continuously improve water quality and restore watershed hydrology;
- Reduce annual TP load by 6,000 pounds, which exceeds the required annual load reduction in TP and attains the water quality standard for TP;
- Reduce annual sediment load by 324 tons, which exceeds the required annual load reduction in sediment and attains the water quality standard for TSS;
- Achieve 89 percent of the required annual load reduction for pathogens and attain the water quality standard for pathogens.