

## **Chapter 6:**

# **Strategy for Implementing and Evaluating the Effectiveness of Stormwater Management Measures**

**Introduction**

The New Jersey Stormwater Management Rules (N.J.A.C. 7:8) require that a regional stormwater management plan include a strategy for the implementation of the recommended stormwater management measures. The management measures have been separated into two distinct components that will differ in their implementation. Part A defines the regulatory actions that will be adopted into the Areawide Water Quality Plan to address identified stormwater problems. Part B identifies and prioritizes specific management projects that have been quantified as to their potential in pollutant reduction, stream flow reduction, cost, and other characteristics. Since Part A is contains the management measures that will be adopted into the Areawide Water Quality Plan, this chapter will focus on the strategy for implementing and evaluating the effectiveness of the stormwater management measures contained in Part A.

**Adoption and Modifications of Ordinances**

Since Part A of the Plan requires the adoption or modification of three ordinances, the Stormwater Management Control Ordinance, the Low/No Phosphorus Fertilizer Ordinance, and the Coal Tar Reduction Ordinance, this portion of the plan will be implemented by each municipality upon the adoption of the Plan into the Areawide Water Quality Plan. Each municipality will review the ordinances and a take the necessary actions to adopt these ordinances. The Union County Department of Engineering and Public Works will work with the municipalities to incorporate each ordinance into their municipal code. As the long-term monitoring program, the Union County Department of Engineering and Public Works will track the adoption of these ordinances to assure that this measure is implemented.

*Monitoring Agency: Union County Department of Engineering and Public Works*

*Schedule: Ordinances will be adopted within one year of adoption of the Plan into the Areawide Water Quality Plan*

*Implementation Costs: Minimal – staff time to review ordinances*

*Funding Sources: None are needed*

**MS4 Permit Educational Mandate Focus**

Part A of the plan also requires each municipality to focus additional educational efforts on promoting groundwater recharge through disconnection of impervious surfaces and infiltrating the runoff from the two-year design storm. Each municipality will also have to review their current educational materials and modify these materials to emphasize promoting groundwater recharge. Rutgers has provided the municipalities will an educational tool, RU Disconnection Manual, to help with this effort. Additionally, the Union County Department of Engineering and Public Works and Rutgers continue to be available to help these municipalities move forward with this effort. As part of the long-term monitoring plan, the Union County Department of Engineering and Public Works will document the efforts of each municipality as they move forward in implementing this management measure.

Monitoring Agency: Union County Department of Engineering and Public Works  
Schedule: Modifications in education materials will be made and implemented within one year of adoption of the Plan into the Areawide Water Quality Plan  
Implementation Costs: Minimal – staff time to review update educational materials  
Funding Sources: None are needed

### **Terminal Catch Basin Cleaning**

Finally, Part A of the Plan requires additional catch basin inspection and cleaning as necessary. This will require each municipality to adjust their standard operating procedures for catch basin cleaning. Inspection documentation will be maintained by the municipalities for the terminal catch basins as these are most likely to present the greatest impact on water quality if not properly maintained.

Monitoring Agency: Individual municipalities and NJDEP NJPDES Permitting  
Schedule: Modifications in standard operating procedures will be made and implemented within one year of adoption of the Plan into the Areawide Water Quality Plan  
Implementation Costs: Minimal – staff time to conduct additional inspections and catch basin cleaning as needed.  
Funding Sources: None are needed

### **Long-term monitoring program**

The implementation of the management measures outlined in Plan A and Plan B will result in water quality improvements while minimizing flooding and promoting groundwater recharge. Both modeling and monitoring can be conducted to quantify these improvements. Several models were developed for this plan including a hydrologic model of the watershed, a hydraulic model of the streams and tributaries in the watershed, and an aerial loading model of nonpoint source loads for the watershed. As improvements are made, these models can be used to predict improvements in water quality, flooding, and groundwater recharge.

Additionally, monitoring can be conducted to also quantify the improvements to the Robinson's Branch and its watershed that result from the implementation of the Plan. NJDEP does maintain four ambient biomonitoring sites on the Robinson's Branch. These sites can provide information on improvement in water quality. Moreover, water quality samples can be collected throughout the system and analyzed for various pollutants that are a concern within the watershed such as nutrients, bacteria and sediment. The USGS also maintains two water quality stations within the watershed (See Robinson's Branch C&A Section IIM). Finally, flow gages can be installed in the system to determine if the implementation of management measures has reduced flooding. The municipalities, Union County Department of Engineering and Public Works, Rutgers University, and other project partners will work together to solicit funding to collect water quality data and the deploy flow gages. These actions should begin within one year of adoption of the Plan into the Areawide Water Quality Plan.

One possible approach would be to begin implementing management measures from Plan A and Plan B in one or two subwatersheds within the basin. Then monitoring the water quality, flooding and groundwater recharge within these basins to document improvements that have resulted from the implementation of management measures. It is crucial to show how the implementation of a regional plan can result in water quality, flooding and groundwater improvements, not just for the stakeholders in the Robinson's Branch Watershed but for all the residents of New Jersey. Only through the proper documentation of results will other stakeholder groups embrace these plans and begin moving forward with their development and ultimately, their implementation.

### **Adaptive Management**

Five years after the adoption of the Plan into the Areawide Water Quality Plan, a detailed evaluation will be conducted to quantify the improvements attained in the watershed with respect to water quality, flooding and groundwater recharge. Based upon this evaluation, the design and performance standards in the Plan can be modified to further refine the recommendations for management measures, which are needed to ultimately attain the goal of the Plan. The project partners will work together to secure funding for this effort.