

Chapter 3

Milestone 3 The Robinsons Branch Regional Stormwater Management Plan

Drainage Area Specific Water Quality, Quantity, and Recharge Objectives

**Completed by the
Rutgers Cooperative Extension
Water Resources Program
Under the guidance of Christopher C. Obropta, Ph.D., P.E.**



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Drainage Area Specific Water Quality, Quantity, and Recharge
Objectives**

August 7, 2006

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Introduction

The third milestone of the Robinson's Branch Regional Stormwater Management Plan, regulated by N.J.A.C. 7:8-3.5, is to set "drainage area-specific water quality, groundwater recharge and water quantity objectives" that are consistent with the goals of stormwater management planning in N.J.A.C. 7:8-2.3 (other planning agencies, commissions and governmental entities), and address each of the stormwater-related pollutant sources and pollutants ranked under N.J.A.C. 7:8-3.4 (Milestone 2, or the Characterization and Assessment).

The objectives stated here will address the elimination, reduction or minimization of stormwater-related impacts associated with new or existing land uses. The objectives do take into consideration environmental, social, and economic factors.

The objectives for major development will provide, at a minimum, the protection that would be achieved through the application of N.J.A.C. 7:8-5, Design and Performance Standards for Stormwater Management Measures. Reference to the applicable Design and Performance Standards from N.J.A.C. 7:8-5 will be noted along with the drainage area-specific design and performance standards that will constitute Milestone 4 of the Robinson's Branch Regional Stormwater Management Plan.

If a TMDL is established pursuant to N.J.A.C. 7:15 for a waterbody or waterbody segment in the Robinson's Branch Regional Stormwater Management Planning Area, drainage area-specific objectives will incorporate the planning established in the TMDL for stormwater sources of pollution. Waterbodies or segments of waterbodies that are listed on the Integrated List of Impaired Waterbodies, requiring compliance with the Clean Water Act for one or more designated uses, have been included in the objectives listed here.

The tasks that will fulfill the Robinson's Branch Regional Stormwater Management Plan requirement for Milestone 3 are outlined in Table 1.

Table 1: Milestone 3 of the Robinson's Branch Regional Stormwater Management Plan task requirement

TASK
Task 1: Identification of water quality objectives
Task 2: Identification of water quantity objectives
Task 3: Identification of area groundwater recharge objectives
Task 4: Identification of other SW-related objectives, if any
Task 5: Submit Revised Scope of Work, if necessary

Water Quality Objectives

1) Address Fecal Coliform loading to Sublist 5 Waterbodies

- a) Goal: To reduce, eliminate or minimize loading of fecal coliform contamination to the following waterbodies
- b) Site specific areas:
 - i) Hetfield by gabions, resident geese
 - ii) Bottom of Clark Reservoir, resident geese
 - iii) Clark High School, resident geese
 - iv) Watershed-wide evaluation of sanitary sewer integrity
- c) Methods to be evaluated:
 - i) Placement of Buffers
 - ii) Pet waste ordinances consistency
 - iii) Geese deterrents
 - iv) Catch basin cleaning
 - v) Street cleaning
 - vi) Park management plans
 - vii) Ordinances

2) Address Total Suspended Solid Loading to the Robinson's Branch

- a) Goal: To reduce, eliminate or minimize the transport of total suspended solids to impacted waterways
- b) Site specific areas:
 - i) Winding Brook at West Broad Street (Scotch Plains)
 - ii) Winding Brook at Parkwood Drive(Scotch Plains)
 - iii) Winding Brook at Inverness Drive(Scotch Plains)
 - iv) Winding Brook at Raritan Road, downstream from Shackamaxon Lake(Scotch Plains)
 - v) Branch22-11 at Cooper Street and Stoneleigh Drive (Scotch Plains)
 - vi) Branch 22 behind Highlander Drive (Scotch Plains)
 - vii) Pumpkin Patch along Oak Ridge Golf Course (Clark)
 - viii) Milton Lake scalloping (Rahway)
 - ix) Milton Lake Park, downstream, along Lake Road and lakeside Drive (Rahway)
 - x) Pumpkin Patch at Amherst (Woodbridge)
 - xi) Tamaques Pond (Westfield)
 - xii) Pumpkin Patch at Deerwood Drive (Clark)
 - xiii) Terrill Road (garage in Scotch Plains)

- xiv) Watchung Avenue
- xv) Highlander Drive

- c) Methods to be evaluated:
 - i) Erosion control measures, including deflectors
 - a. Note: Killam Erosion Study in Scotch Plains will be incorporated into RSWMP
 - ii) Vegetative Filters
 - iii) Manufactured treatment devices
 - iv) Wet ponds
 - v) Catch basin cleaning
 - vi) Street cleaning
 - vii) Ordinances

3) Address Nutrient Loading to the Robinson's Branch

- a) Goal: To reduce, eliminate or minimize the transport of phosphorus and nitrogen to impacted waterways.
- b) Site Specific Areas:
 - i) Hetfield by gabions, resident geese
 - ii) Bottom of Clark Reservoir, resident geese
 - iii) Clark High School, resident geese
 - iv) Drainage of Clark Public Works into the reservoir
- c) Methods to be evaluated:
 - i) Placement of Buffers
 - ii) Geese deterrents
 - iii) Fertilizer ordinances
 - iv) Erosion controls
 - viii) No mow zones at parks
 - ix) Ordinances

Water Quantity Objectives

4) Address Areas of Flooding

- a) Goal: To eliminate, reduce or minimize the effects of flooding of the Robinson's Branch
- b) Site Specific Areas:
 - i) Fox Road and Rahway Road in Rahway
 - ii) Raritan Road and Clover Lane (old Terry Lou Zoo)

- iii) West Broad Street, White Oak to Hetfield
- iv) Lamberts Mill
- v) Pumpkin Patch, backwater effect from Robinson's Branch
- vi) Cushing (Plainfield) retention area within trees; flooding on Wald Drive
- vii) Upstream of Goodman's Crossing on Tussel Lane by apartments
- viii) Knottingham and Rahway Avenue from Shawdowlawn/Shackamaxon (inlets back up, upstream has been routed through underground cement channels)
- ix) evaluate potential remediation for areas of unnatural constriction (i.e. between Irving Street Bridge and Esterbrook Avenue and between Jefferson Avenue and Inwood Place)

c) Methods to be evaluated:

- i) Increasing bridge opening to allow for a greater volume of water to pass downstream.
- ii) Detention of water upstream/ controlled outflow
 - including land use evaluation upstream of Shackamaxon Lake
- iii) Infiltration of precipitation to reduce volume of water reaching the stream at critical flooding times.
- iv) Modification of impoundments to control outflow
 - possibly to include Shackamaxon Lake, Milton Lake and the Clark Reservoir
- v) Explore potential of watershed to receive FEMA funding to remove houses in worst danger within the floodplain
- vi) Eliminate increase in net fill; adopt zero net fill policy
- vii) Upstream infiltration through impervious disconnection, vegetative swales, bioretention systems
- viii) Ordinances

5) Address Recharge to Aquifer and Baseflow Maintenance

a) Goal: To reduce, eliminate or minimize the routing of stormwater that short circuits infiltration for the purposes of aquifer recharge or stream baseflow maintenance.

b) Site Specific Areas:

- i) Residential development
- ii) Golf Courses
- iii) Parks

c) Methods to be evaluated:

- i) Impervious disconnection
- ii) Vegetative swales
- iii) Bioretention systems