

Chapter 2

The Robinson's Branch Regional Stormwater Plan: Characterization and Assessment Executive Summary

Introduction

In accordance with N.J.A.C.7:8-3.4(a), the Regional Stormwater Management Plan shall contain a Characterization and Assessment that covers aspects of stormwater and its management of that area contained within the boundaries of the Robinson's Branch Watershed. The characterization and assessment is intended to capture the properties existing and future land use and infrastructure and define the effects on the quality, quantity and the recharge of the stormwater within the watershed.

The "Characterization and Assessment of the Regional Stormwater Management Planning Area for the Robinson's Branch Watershed" is a separate document from this plan and can currently be found at:

<http://www.water.rutgers.edu/Projects/Robinsons/Robinsons.htm> .

Along with mapping and modeling, surveillance of the watershed was essential for defining the characteristics of the watershed. Members of the Rutgers Water Resource Program joined municipal engineers, environmental commission members and others in evaluating site specific criteria.

Maps

An extensive series of maps were prepared for the Characterization and Assessment. These maps illustrated such characteristics as the watershed boundary, existing land uses, soil erodibility, the location of wetlands, the flood hazard zone, groundwater recharge areas and other attributes of the watershed.

Models

Models were used to analyze the response of the watershed to various water quality and water quantity inputs. The hydrologic and hydraulic models of specific areas were created by the Water Resources Program at Rutgers University for the use of the Robinson's Branch Regional Stormwater Committee.

The hydrologic model, HEC-HMS, was used to define the rainfall-runoff patterns that would be expected to be found in the subbasins of the watershed. Design storms developed by the United States Department of Agriculture were used to determine flow response patterns in the watershed. These flows could then be used in a HEC-RAS model.

The HEC-RAS model uses elevations, stream cross sections, and the output of the HEC-HMS models to determine the water surface elevation expected within the stream corridor.

An aerial loading analysis was used to understand the relation of the land use and the nonpoint source pollutant loading to the stream. Build out conditions were also evaluated in this manner for their effect on this type of nonpoint pollutant loading.

Ranking

Ultimately, all water quality, water quantity and groundwater recharge issues were ranked according to the degree of threat to water quality or water quantity in the watershed.