Background
The Township of Hillsborough, New Jersey, a town once comprised of farmland, has undergone land development through the construction of roads, homes, and public and private buildings over the last forty years. This has led to an increase of impervious surfaces, which makes stormwater management a necessity.

The stormwater in the drainage area of the intersection of Amwell Road and Wescott Road drains to two detention basins (the Wescott Basins) which are interconnected by a concrete channel that passes beneath Wescott Road. These detention basins require frequent mowing and other maintenance.

Objectives & Goals
Main objectives:
• Improve water quality
• Reduce maintenance of the basins
• Increase groundwater infiltration

Goals:
• Determine current pollution loading rates
• Identify areas where Best Management Practices (BMPs) can be implemented

Modeling Results

Solutions
Bioretention basins/rain garden
Bioretention systems are useful for removing a wide range of pollutants from stormwater such as suspended solids, nutrients, metals, hydrocarbons, and bacteria. They also reduce peak runoff rates which prevent flooding, and increase stormwater infiltration which helps to recharge groundwater aquifers.

Naturalize the area
The detention basin will be naturalized in an effort to increase infiltration. The soil will be prepared for new vegetation and a meadow-naturalizing seed mix will be applied. A buffer zone will be created between the basin and homes as well as along the roads as to not impair motor vehicle driver’s vision.

Meander the channel
The existing concrete low flow channel will be removed and then naturalized. The new vegetation lined low flow channel in the western basin will be meandered to allow for increased detention time.

Conclusions
• Implementation of BMPs and innovative designs will allow for 100% infiltration of the NJ DEP Water Quality Storm
• Total costs come to approximately $27,000

References

Plants Selected for Rain Garden Design

FAC indicates facultative species, FACU indicates Facultative Uplands Species, FACW indicates facultative wetland species, NI indicates no indicator available for the species.

• These plants are all native to New Jersey and can survive in rainstorms that are greater than 1.25”
• The plants have no serious pest and disease issues (Still). This helps reduce maintenance and pollution because the plants do not have to be sprayed with insecticide.
• The plants on the side of the rain gardens facing the roadway are usually shorter than the plants facing the developments to allow for an unobstructed view as cars drive by and also to allow drivers driving by to see the beautiful array of plants.