Southern School of Energy and Sustainability
Stormwater and Stream Restoration Project

Stormwater Wetlands - constructed systems that mimic the functions of natural wetlands and use physical, chemical, and biological processes to treat stormwater pollution. Stormwater wetlands can remove 85% of total uspended solids; 40% of total nitrogen; and 35% of total phosphorus.

Wet Detention Basin - is a stormwater management facility that includes a permanent pool of water for removing pollutants and additional capacity above the permanent pool for detaining stormwater runoff that will be reused on the athletic fields. Wet detention basins can remove 85% of total suspended solids; 30% of total nitrogen; and 40% of total phosphorus.

Bioretention Rain Gardens – are small cells that use of plants and soils for removal of pollutants from stormwater runoff via adsorption, filtration, sedimentation, volatilization, ion exchange, and biological decomposition. In addition, bioretention provides landscaping and habitat enhancement benefits. Bioretention rain gardens can remove 85% of total suspended solids; 35% of total nitrogen; and 45% of total phosphorus.

Stream Restoration – uses a holistic approach through the re-establishment of the general structure, function, and self-sustaining behavior of the stream system that existed prior to disturbance. It requires an understanding of all physical and biological components of the stream system and its watershed. Restoration includes a broad range of measures, including the removal of the watershed disturbances that are causing stream instability; installation of structures and planting of vegetation to protect streambanks and provide habitat; and the reshaping or replacement of unstable stream reaches into appropriately designed functional streams and associated floodplains. The proposed stream restoration aims to reduce 75 tons of sediment per year from entering Falls Lake Reservoir.

References:

-North Carolina Division of Water Quality, Stormwater Best Management Practices Manual, July 2007 (Revised 2013).

-NC State University, Stream Restoration: A Natural Channel Design Handbook, 2003.

Project Sponsor:

DURHAM SOIL & WATER CONSERVATION DISTRICT

Chunky Pipe Creek

Stormwater Wetland

Stormwater Wetland

Wet Detention Reuse Pond

Wet Detention Reuse Pond

Stream Restoration

Rain Garden

Rain Garden

Clayton Rd

Freeman Rd

Project Partners:

North Carolina Environmental Enhancement Grants
Clean Water Management Trust Fund
North Carolina Division of Water Resources
National Institute of Food and Agriculture
Southern School of Energy and Sustainability
Durham Soil and Water Conservation District
Durham Public Schools
Durham Board of Education
Civil & Environmental Consultants, Inc.
River Works, Inc.
RBC Bank

Stormwater BMPs and easement boundaries are a graphical representation and do not represent the actual size.

Legend

- Phase 1 - Summer 2016 Construction
- Phase 2 - Summer 2017 Construction
- Proposed Conservation Easement

N

0 100 200 400 Feet