

Charlotte-Mecklenburg Freedom Drive –

LID Retrofit

For the past seven years, Charlotte-Mecklenburg Storm Water Services (CMSWS) has been studying a wide range of BMPs specifically installed to monitor the cost-benefit, pollutant removal efficiency, and maintenance costs of BMPs in an urban setting. CMSWS recently completed construction of the Shops on Freedom LID retrofit project as part of this program.



Shops on Freedom Drive shopping center was originally constructed in the mid 1960's. In 2003, the property owner began design of a site revitalization project that included repaving of the site parking lot and a new building façade. CMSWS evaluated the project site and determined it to be a good site for conducting an LID retrofit project to study its effectiveness for treating stormwater runoff. The project required close coordination with the property owner's revitalization project to develop an acceptable design. A major concern of the property owner was the loss of parking spaces and use of vegetation or trees that would block store front views from nearby streets. The design called for the use of nine (9) bioretention cells that would treat approximately one half of the parking lot while leaving stormwater from the other half untreated. By sampling runoff from both parts of the parking lot, a comparison of pollutant concentrations could then be made to document the effects of the LID project. In addition, the LID project design included a redesign of the parking lot striping pattern which provided the property owner with more parking spaces than were on the site prior to the project. The project has shown success in visual performance and appearance of the bioretention cells. In addition, the plant vitality and survival has been excellent over the first year of the project. Stormwater monitoring of runoff from the site is scheduled to begin this summer with expectations that the LID treatment will show positive results.



This project is just one of 25 different BMPs in Charlotte's Pilot program. BMPs included in the Pilot program include wet ponds, constructed wetlands, bioretention, and various proprietary BMPs. A report of monitoring findings is due out this summer; however CMSWS will continue to monitor various BMPs included in the Pilot BMP program for several more years.



The data collected in this program will be useful when drafting the soon-to-be published BMP Design Manual. CMSWS is particularly interested, from this point forward, in analyzing maintenance costs over the long-term.

Specific information about Charlotte-Mecklenburg's Pilot BMP program can be found at <http://stormwater.charmeck.org> by clicking on the *Storm Water Professionals* link.