

## The Implementation of Low Impact Development (LID) Stormwater Practices along the South Carolina Coast.

Lisa Vandiver<sup>1\*</sup>, Debra Hernandez<sup>2</sup>, and Dwayne E. Porter<sup>1</sup>

<sup>1</sup> Department of Environmental Health Sciences, Arnold School of Public Health, University of South Carolina

<sup>2</sup> Hernandez and Company, LLC

Developers, engineers and regulatory agencies have recently been considering the use of alternative stormwater management strategies, such as Low Impact Development (LID) practices (e.g., bioretention swales and pervious pavement), to address the water quality issues associated with stormwater runoff. LID practices have been proven to be effective in reducing runoff rates and retaining stormwater pollutants; however, these studies have been conducted in areas outside of the southeast coast and may not apply to regional soils and shallow water tables. In addition to the lack of regional data, perceptions of LID practices, regulatory obstacles, design requirements, lack of engineering and/or construction expertise, and economics have also been identified as reasons for the limited implementation of LID practices along the Southeast coast. A study was conducted to identify the technical, implementation process, and perception obstacles in the selection and use of LID practices to fulfill the stormwater management requirements of this region.

Analyses were initialized by mapping the process of selecting and implementing stormwater management techniques. Twenty decision-makers along the process map (e.g. developer, public/private-sector engineer, public/private-sector land planner, architect, contractor/supplier, and state/local regulatory staff) were identified, through snowball sampling, and interviewed to verify and further refine technical, implementation process, and perception obstacles in the selection and use of LID practices along the South Carolina coast. The interviews were summarized and will be analyzed through qualitative analyses, particularly noting themes among the answers and professions of the decision-makers.

The results of the analyses will provide an identification of the obstacles to implementing LID stormwater practices along the South Carolina coast, as well as the opportunities for solutions to these obstacles. Broader generalizations of the data such as a need to refine the definition of Low Impact Development (LID), the lack of exposure to LID stormwater practices, and future educational needs among the varying types of decision-makers will also be determined. Ultimately these data will be further refined through future workshops. Summaries will also be disseminated among the decision-makers along the implementation process to provide suggestions for improving the process of implementing LID practices along the South Carolina coast.

Lisa Vandiver is a PhD candidate in the Environmental Health Sciences Department at the University of South Carolina. In 2005, she received her Masters from the Environmental Studies program at the College of Charleston. There she researched the application of vegetated buffers in residential settings along the South Carolina Coast. Currently she is analyzing the implementation of Low Impact Development Practices (LIDs) in the development of Oak Terrace Preserve in North Charleston. This information will provide a comprehensive case study of LID implementation (e.g. design and installation requirements, cost comparison, obstacles to implementation, maintenance requirements and education, and LID performance) in Charleston County.