

## BLUE: Land, Water, Infrastructure, PA (BLWI)

BLUE: Land, Water, Infrastructure, PA (BLWI) was formed in 1998. We are a multidisciplinary firm which provides ecosystem engineering, environmental consulting, environmental engineering, and geomatics services. Specializing in consulting, design, modeling, and planning services for projects involving stormwater, land use, water quality, stream, land

development, wetland, property boundary, and wildlife issues; our focus is providing very innovative and high quality services. Our clients include individuals, corporations and government entities. The projects we provide services for are located in the Coastal Plain, Sandhills, and Piedmont regions of North Carolina, South Carolina, and southern Virginia.

### Did you know?

The Neuse River has the widest mouth of any river in the continental United States.

## Hydrographic surveying of Wilson Bay Jacksonville, NC

BLUE: Land, Water, Infrastructure, PA (BLWI) recently performed a hydrographic survey of the entirety of Wilson Bay and portions of the New River to measure bed features and determine sediment depth in the bay. By utilizing a dual frequency depth sounder (sonar) and a robotic total station, we were able to acquire both the top of the suspended sediment layer and the more consolidated bed layer of the bay and river at the same time. The onshore total station and boat-mounted depth sounder were radio linked to a real-time processing system which merged the depth readings with angles and distances to compute horizontal and vertical limits of the sediment and bed layers.

A mathematical procedure known as 'Gaussian kernel smoothing' was then applied to matched moving submatrices of the sediment and bed datasets. Statistically derived values were determined for the moving sediment and bed submatrices. By varying the bandwidth and range parameters during the smoothing procedure dependent upon the data measured in each of nine sounding runs, false measurements (noise) were eliminated from the soundings dataset. The soundings dataset was then merged with two other datasets comprised of LIDAR bare earth topographic data and field surveyed topographic data. From this final dataset, a complete digital elevation model of the entire project area was developed. In addition to providing the necessary information to estimate sediment volume, this allowed our firm to undertake detailed hydrodynamic modeling of flow along the river and in the bay.

To learn more about this project and others, see our web site: [www.blwi.com](http://www.blwi.com)

Did you know?  
The Albemarle-Pamlico estuarine system is the second largest estuarine system in the United States.

## NC Update: One NC Naturally

North Carolina's Department of Environment and Natural Resources (NCDENR) has initiated a new conservation program aimed at protecting our state's natural resources. The program, a part of the "million acres" initiative, has been named "One NC Naturally" and is under the direction of the Office of Conservation and Community Affairs. The first objective of the program is to develop a statewide conservation plan. As part of this effort, a series of meetings are being held to get input and ideas from municipal officials, environmental planners, consultants, regulatory agents, non-profit groups, and interested citizens on how the plan should be developed. The meetings are being held in each of eight identified conservation regions across the state. The first meeting, held in Chapel Hill, featured presentations by NCDENR Secretary Ross and Richard Rogers, director of the Office of Conservation and Community Affairs. Both spoke about their visions for the program and indicated their goal to not only develop this plan, but to also aggressively pursue its implementation.

An important part of this program includes the organization of a new DENR program, the Environmental Enhancement Program (EEP). This program will bring together various agencies, including the Department of Transportation, the Wetlands Restoration Program, and the US Army Corps of Engineers. The goal of this program will be to advance the state's compensatory mitigation process. The EEP plans to accomplish this by improving interaction between agencies, and by increasing planning for targeted mitigation projects to "get ahead of the game" by acting on mitigation needs before impacts occur. The EEP is also planning to have a conservation component, which will provide the program additional options for identifying mitigation opportunities.

Questions or comments?

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