Bret M. Webb, Ph.D., P.E., D.CE, M.ASCE

University of South Alabama, Department of Civil Engineering, Mobile, AL
Phone: (251) 460-6174, E–mail: bwebb@southalabama.edu

EDUCATION

Ph.D. University of Florida, Coastal & Oceanographic Engineering, 2008
M.S. University of Florida, Coastal & Oceanographic Engineering, 2004
B.S. University of Florida, Civil Engineering, 2001

PROFESSIONAL EXPERIENCE

2014-Pres Associate Professor, University of South Alabama, Dept. Civil Engineering
2008-Pres Senior Coastal Engineer, South Coast Engineers LLC, Fairhope, Alabama
2008–2014 Assistant Professor, University of South Alabama, Dept. Civil Engineering
2007–2008 Instructor, University of South Alabama, Dept. Civil Engineering

LICENSES & CERTIFICATIONS

Professional Engineer: Alabama, Florida
Diplomate, Coastal Engineering (ACOPNE)

PROFESSIONAL AFFILIATIONS

- American Geophysical Union
- American Shore and Beach Preservation Association
- American Society of Civil Engineers (COPRI / EWRI)
- Society of American Military Engineers

RECENT PROFESSIONAL HIGHLIGHTS

- Co-author of HEC 25 Volume 2 "Highways in the Coastal Environment: Assessing Extreme Event"
- Work on exposure assessment referenced in the President's Climate Action Plan (2013)
- Contributions to 2014 National Climate Assessment (Sectors / Transportation)

RECENT PUBLICATIONS (showing 5 of 20+)

1. Douglass, S. L., Webb, B. M., Kilgore, R. 2014. "Highways in the Coastal Environment: Assessing Extreme Events." HEC 25 Vol. 2. United States Department of Transportation, Washington, DC. 149 pp.
2. Webb, B. M., Matthews, M. T. 2014. Wave-induced scour at cylindrical piles: estimating equilibrium scour depth in a transition zone. *Transportation Research Record: J. Transportation Research Board* 1(2436), 148-155.
3. Webb, B. M., Kennedy, A., Rogers, S., Gravois, U., Omar, H. 2012. A wave, water level, and structural monitoring plan for Dauphin Island, Alabama. In: *Proceedings of the ATC-SEI Advances in Hurricane Engineering Conference*, ASCE, Reston, VA.
4. Allen, R., Webb, B. M. 2011. Determination of wave transmission coefficients for oyster shell bag breakwaters. In: *Proc. Conference on Coastal Engineering Practice*, 684-697. ASCE, Reston, VA.
5. Webb, B. M., Douglass, S. L., Dixon, C. R., Buhring, B. 2011. Application of coastal engineering principles in response to the Deepwater Horizon disaster: lessons learned in coastal Alabama. In: *Proc. Conference on Coastal Engineering Practice*, 359-372. ASCE, Reston, VA.

SELECTED RESEARCH PROJECTS

Monitoring the Coastal Processes in the Vicinity of Little Lagoon Pass, Alabama (Alabama Department of Transportation). Dr. Webb serves as co-principal investigator on this multi-year monitoring project. The goals of the project are to monitor sand volumes within the littoral system of Little Lagoon Pass; assess lagoon water quality characteristics; and develop a coupled numerical model of circulation, waves, sediment transport and morphologic change.

A Toolkit for the Functional Design of Structures in Living Shorelines (Mississippi-Alabama Sea Grant Consortium). Dr. Webb is the principal investigator of a multi-year research project aimed at developing appropriate coastal engineering guidance for the design of structures used in living shorelines. The project is part of the MASGC healthy coastal ecosystems focus area.

Improving Wave Height Prediction During Barrier Island Overtopping (MASGC). The goal of this project is to characterize overland wave transformation during storm surge events. The results will be analyzed to improve wave models used in flood insurance studies. Storm surge and wave gauges, as well as accelerometers, are deployed along a transect and affixed to pile-supported homes on Dauphin Island, Alabama prior to hurricane landfall.

Exploratory Research on Wave-Induced Scour at Coastal Bridges (Federal Highway Administration). Dr. Webb served as principal investigator for this FHWA funded research project, which synthesized existing literature and measurements of wave and wave-current scour in the coastal environment. In a TRR publication, Webb & Matthews (2014) describe existing knowledge gaps and provide a new model for estimating wave scour at the base of cylindrical piles and pile groups.

SELECTED ENGINEERING PROJECTS

Highways in the Coastal Environment: Assessing Extreme Events (USDOT/FHWA). Dr. Webb is the co-author/co-developer of USDOT guidance on methodologies for assessing the vulnerability of the nation's coastal transportation infrastructure to extreme events and climate change. The guidance will be published as Hydraulic Engineering Circular 25 Volume 2 "Highways in the Coastal Environment: Assessing Extreme Events" in 2014.

Investigation of Restoration of Hydrology of Mobile Bay Causeway, Alabama (Alabama Dept. Conservation and Natural Resources). Dr. Webb is leading a team developing a hydrodynamic model (ADCIRC) for investigating the improvements in tidal circulation, which will occur as the result of a proposed removal of a section of the existing US 90/98 Causeway embankment across the northern end of Mobile Bay and replacement with an elevated bridge.

Impacts of Climate Change on Storm Surge and Waves in Coastal Alabama (USDOT). Dr. Webb applied ADCIRC and STWAVE models for Mobile and Baldwin County, Alabama under a variety of assumed global climate change and hurricane scenarios. The results have been used for mapping the surge and wave levels and resulting impacts on transportation facilities in the region as part of an USDOT-funded study (Gulf Coast 2).

Technical Oversight for Coastal Flood Map Modernization in Alabama (Alabama Office of Water Resources). Dr. Webb is providing technical oversight for the State of Alabama as part of the FEMA coastal flood map modernization process. The mapping project is being conducted jointly with the Northwest Florida Panhandle.

National Highway Institute Course No. 135082, Highways in the Coastal Environment (FHWA/NHI). Dr. Webb is an approved instructor and has taught this 3-day continuing education course for transportation professionals since 2008.