



## Florida Department of Transportation Research

State of Florida Manuals for Erosion and Sediment Control and the Rainfall Runoff Simulator at the Stormwater Management Academy  
BD521-04

Reducing sediment and pollution loads to receiving water bodies is critical to maintaining the quality of Florida waters. In 1982, Florida was the first state to adopt a statewide stormwater rule, which set a performance standard with Best Management Practices (BMPs) design criteria. This rule and related practices apply to construction sites, which often expose soil to erosion and potentially contribute to the sediments in stormwater.

Rainfall in Florida is much higher than some states which have already established programs for testing erosion and sediment control products, and therefore, there is a need for a comprehensive program to assist in the design, review, and construction of erosion and sediment controls. This project responded to this need in three ways. First, a facility for simulating realistic rainfall events with typical runoff control structures was created. Second, design and construction manuals for erosion and sediment control targeted to construction in Florida were assembled. Third, training classes were conducted for FDOT personnel to promote an understanding of the manuals.

Two manuals of practice were completed, one for design and review of erosion and sediment control practices and the other to guide the construction of erosion and sediment control practices in the field. Lesson plans for training using the design and review manual were published in the project report. These lessons were delivered as pilot courses for FDOT practitioners, and researchers used this experience to improve the training course and refine the information in the manuals.

The professionals also recognized the need to test existing products and to develop newer ones. Thus a test bed with rainfall simulator was constructed on the campus of the University of Central Florida. This facility is uniquely capable of rainfall rates



*The rainfall simulator is part of a test facility constructed as part of this project. It produces rainfall at rates up to 12 inches per hour using drops of natural size.*

up to 12 inches per hour at appropriate drop sizes. The rainfall simulator and the test beds with an index testing area comprise the world's largest erosion and sediment control facility of its type. Researchers used the simulator to evaluate silt fence properties and effectiveness to verify and improve the capability of the rainfall simulator and test beds.

In pursuit of project goals, the University of Central Florida research team sought unprecedented cooperation from professionals representing state, federal, academic, and consulting organizations to propose solutions for the design, review, and implementation of soil erosion and sedimentation control products and methods. At the heart of the project was a carefully crafted cooperative approach for design and review of sediment and erosion control practices. As a result, the manuals and the testing facility are a result of the collective wisdom and knowledge of individuals and agencies working with these areas.

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For more information, visit <http://www.dot.state.fl.us/research-center>