



Florida Department of Transportation

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ROADWAY DESIGN BULLETIN 12-08

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TO: District Design Engineers, Plans Preparation Manual Holders

FROM: David C. O'Hagan, PE, State Roadway Design Engineer

COPIES: David Sadler, Tim Lattner, Duane Brautigam, Chris Richter, FHWA

SUBJECT: Implementation of Thirsty Duck Early Riser 200 Buoyant Flow Control Device

BACKGROUND

Stormwater Management Facilities, designed for the Florida Department of Transportation, typically requires the acquisition of additional right of way (R/W), which can be costly. In an effort to become more cost effective with our projects, the Department reviews various products which can save funds and operate equally as well or better than devices FDOT currently utilizes.

The Early Riser 200 is a buoyant flow control device, which allows for a constant discharge of water out of a stormwater management facility. With the ability to obtain a constant discharge, stormwater storage volume within a pond may be reduced, thus allowing for cost saving on R/W acquisitions. The Early Riser 200 product was successfully tested for hydraulic performance and debris tolerance at St. Anthony Falls Laboratory in Minnesota. FDOT has decided, therefore, to allow the use of the Thirsty Duck Early Riser 200 product on stormwater management facilities.

REQUIREMENTS

This product should be considered by drainage designers whenever stormwater ponds are being designed and/or pond right-of-way is being determined. The usefulness of this product may be examined by preparing an alternative pond routing and accompanying right-of-way requirement using the discharge curve associated with this device in lieu of the discharge from a conventional outfall structure. This product is expected to improve pond efficiency with respect to pond

volume whenever the size of dry or wet detention ponds is driven by peak discharge attenuation. This includes ponds which function both to provide water quality treatment and flow quantity attenuation. Selection of this product is on the basis of direct cost savings when compared to traditional pond design with typical pond discharge structures. Additionally, the benefits of reduced flooding and/or satisfaction of TMDL requirements should also be considered either as an anticipated cost savings or a non-quantifiable benefit. As a retrofit to existing ponds, this product should be considered when it is desirable to (1) reduce peak pond stage, (2) reduce the peak discharge for larger storm events, or (3) raise the pond bleed down and/or overflow elevation.

IMPLEMENTATION

Implementation, at any stage of production, will be via a developmental specification on the basis of direct cost comparison with a conventional discharge structure, including amended right-of-way requirements, reduced pond excavation, and the cost of the structure. Project usage will be determined by the District Drainage Engineer, based on the attached cost comparison spreadsheet, with approval by the State Hydraulics Office.

TRAINING

A short course in designing with the Early Riser 200 will be available shortly to the districts. In the interim, design tools are available at

http://www.thirsty-duck.com/technical-info/design_tools.

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