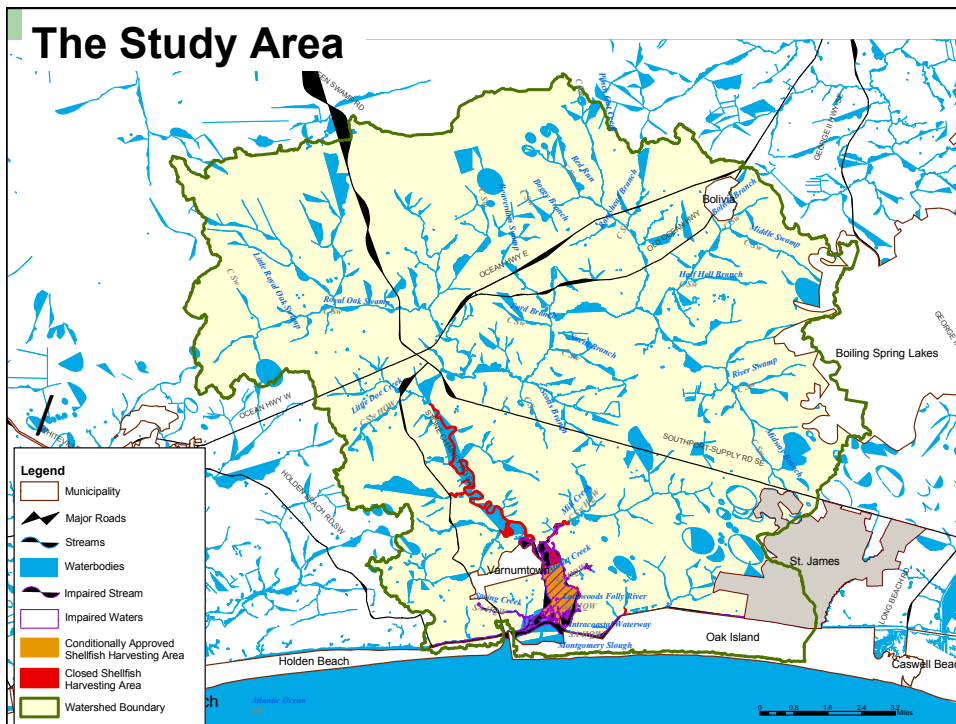


Lockwoods Folly Watershed Plan

Project Partners



The Study Area



The Problem

“In 1980, 16% of the Lockwood Folly River was closed to shellfish harvesting. Now about 55% of the area is closed.

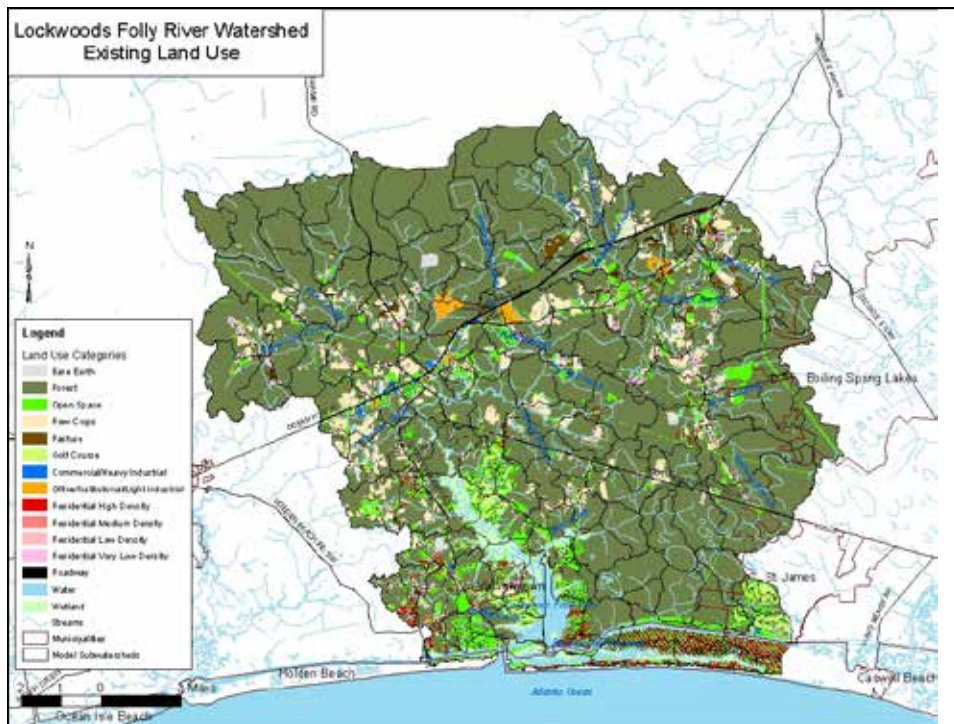
S. Garrett- NC Division of Water Quality

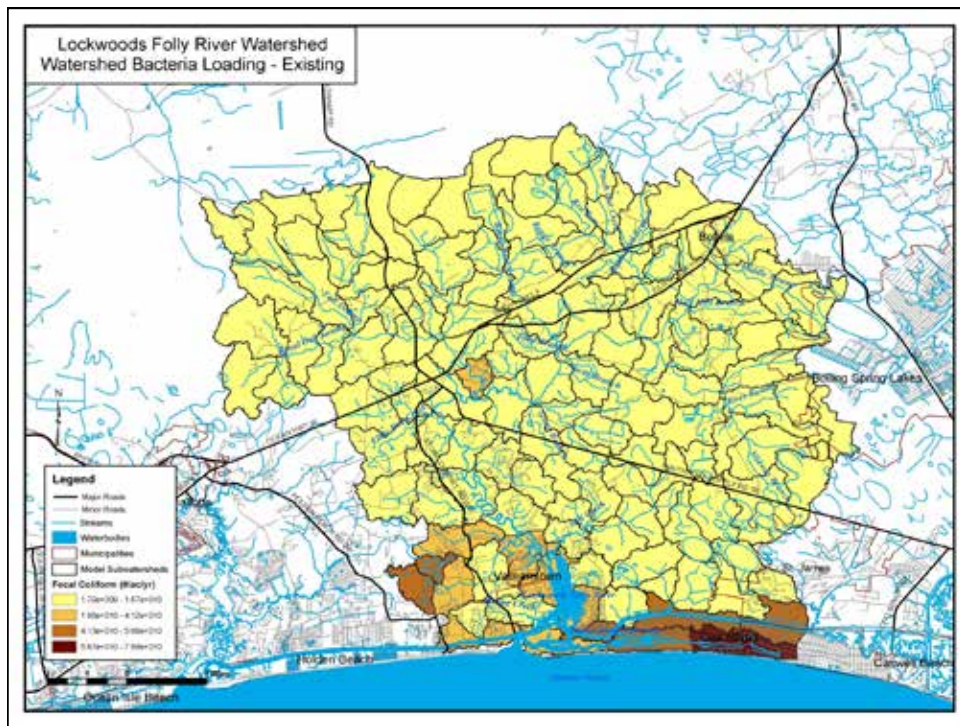
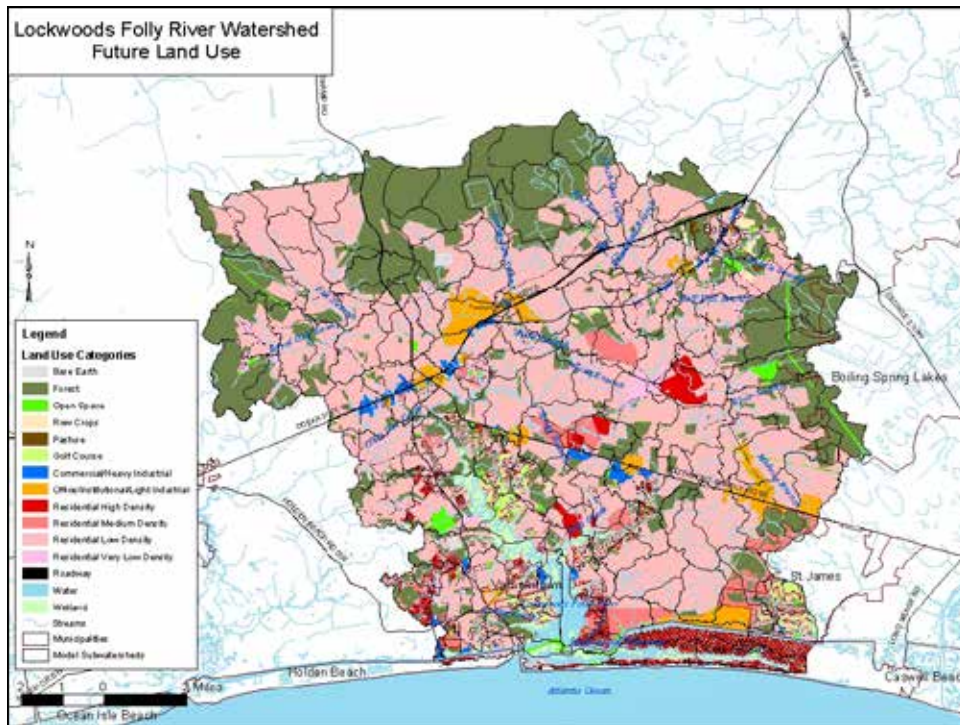


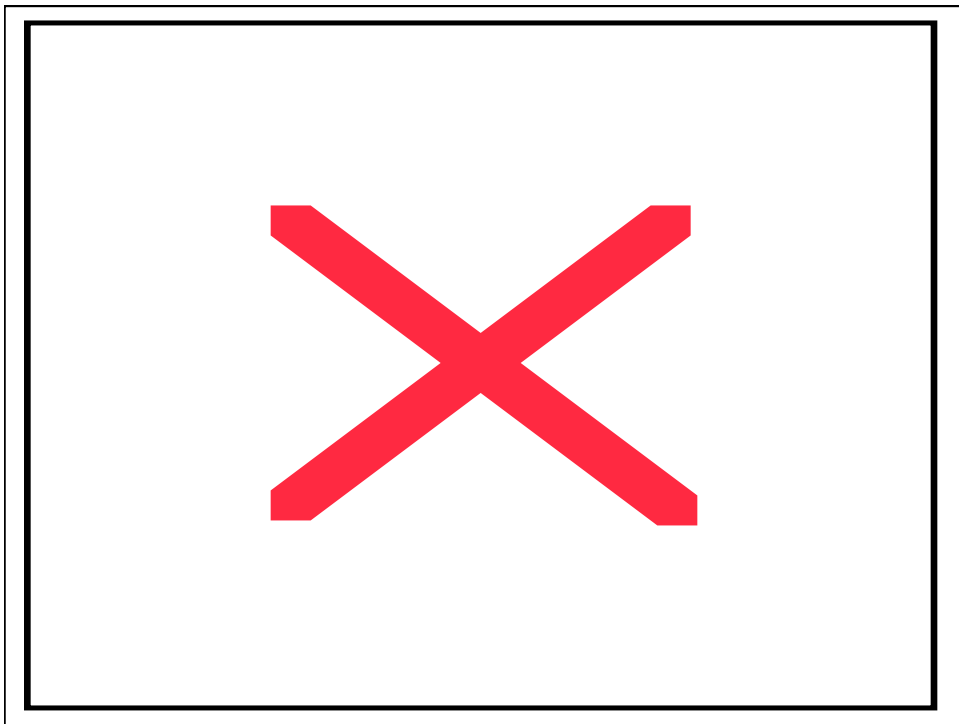
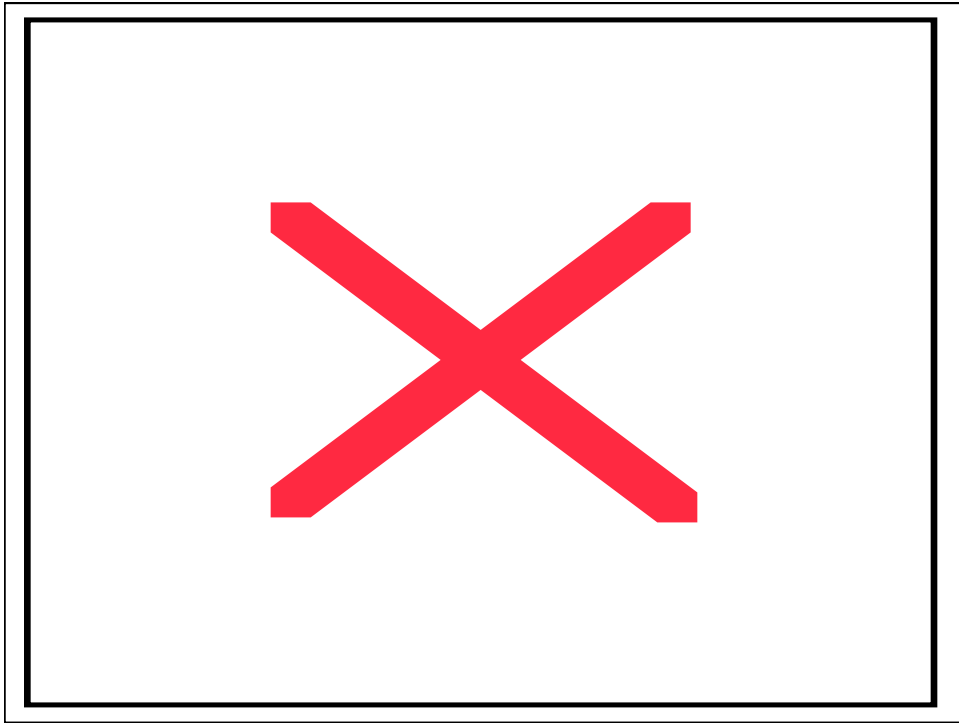
The Threat: Rapid Coastal Development

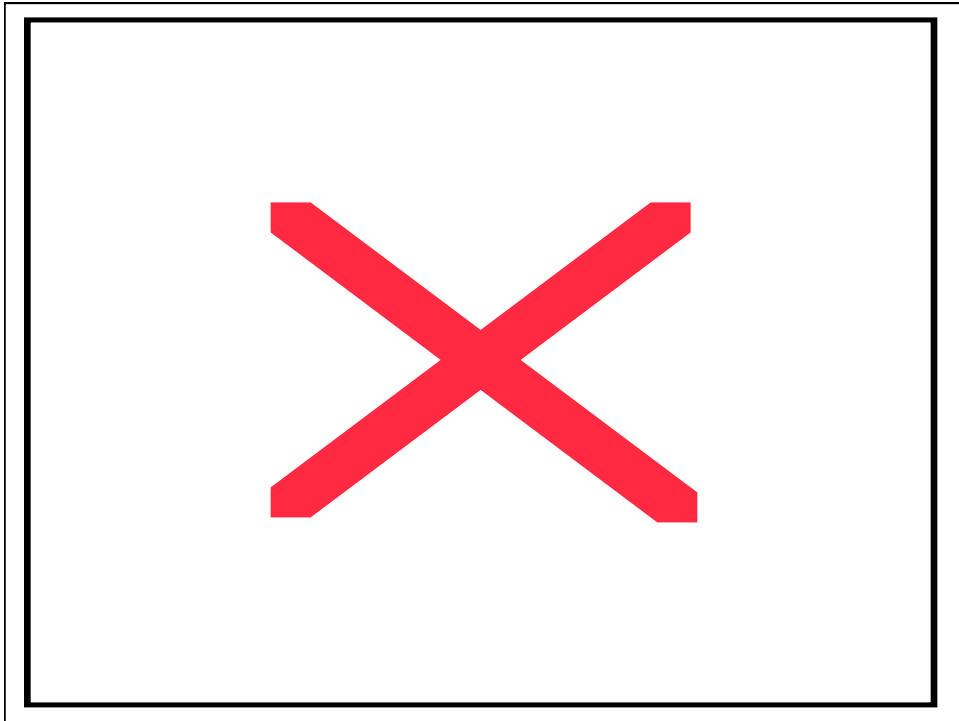


The Threat: Rapid Coastal Development





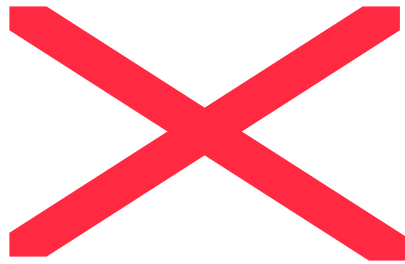




Combined Results

A large, bold red 'X' mark is centered within a white square, identical to the one above. This square is part of a larger graphic element. To its left is a vertical green bar with a blue semi-circular shape at its base. Above the 'X' square, the text 'Combined Results' is written in a bold, dark teal font. The entire graphic is set against a white background.

Fecal Coliform Results



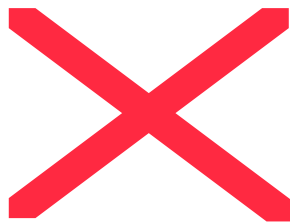
Further Reductions Achieved by:

- Applying LID to remaining new development
 - Commercial/Institutional/Industrial/Office
 - Very low density residential
 - Roadways
 - Non-residential development = 14%
- BMP retrofits to existing development
- Benefits to existing development from adjacent LID
- Buffer, stream and wetland restoration

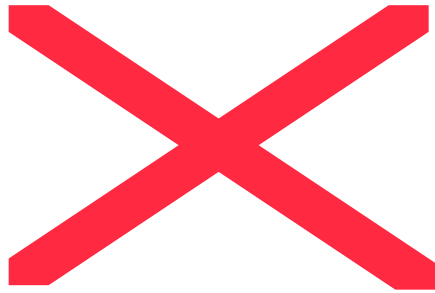
Roundtable Recommendations Lockwood Folly Strategies

- Land Use and Infrastructure
- Low Impact Development
- Program Coordination
- Critical Site Acquisition
- Education, Outreach, Recognition
- Living Shorelines
- Retrofit and Restoration
- Economic Incentives
- Working Waterfronts

Retrofit and Restoration Strategy

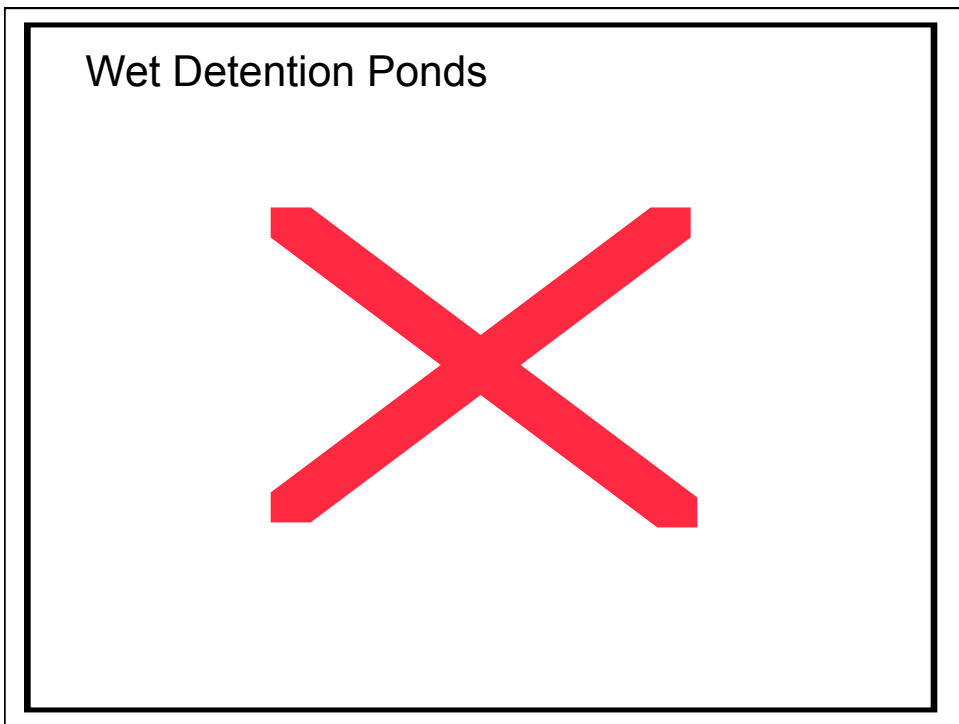
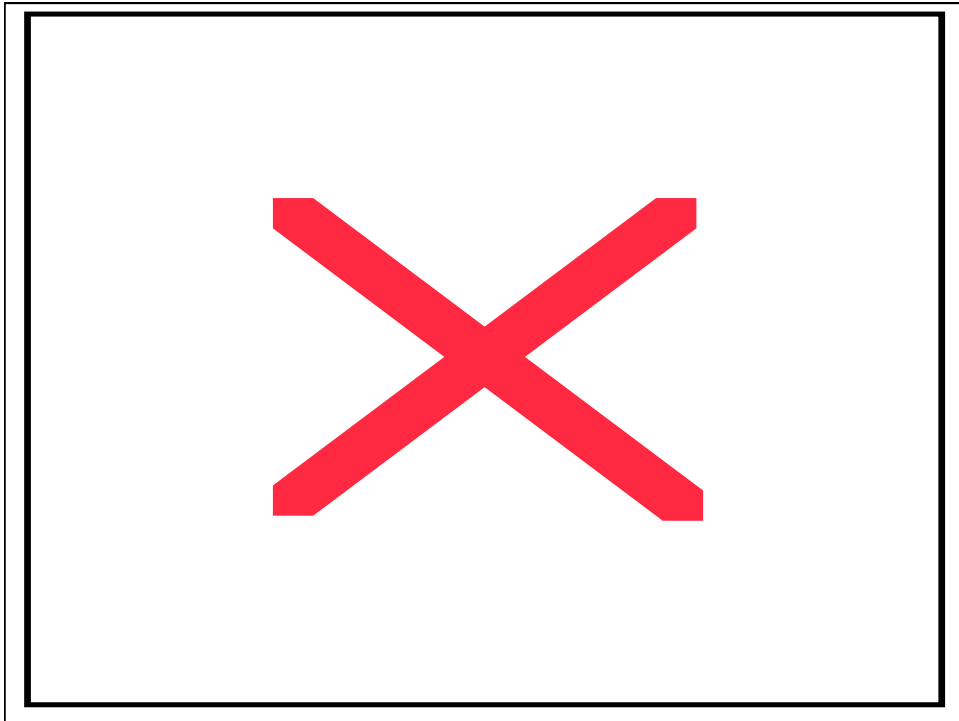


Target BMP Retrofit Subwatersheds

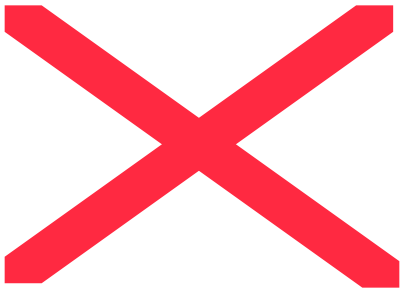


Bioretention Cells

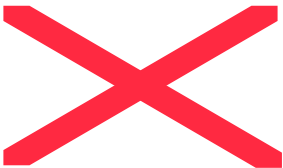


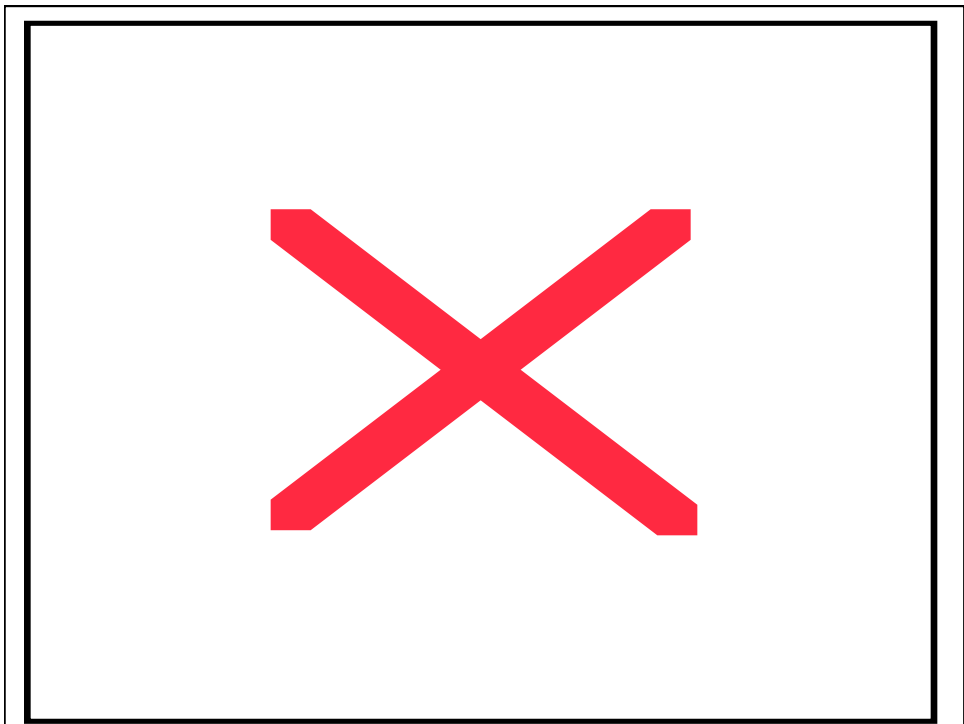
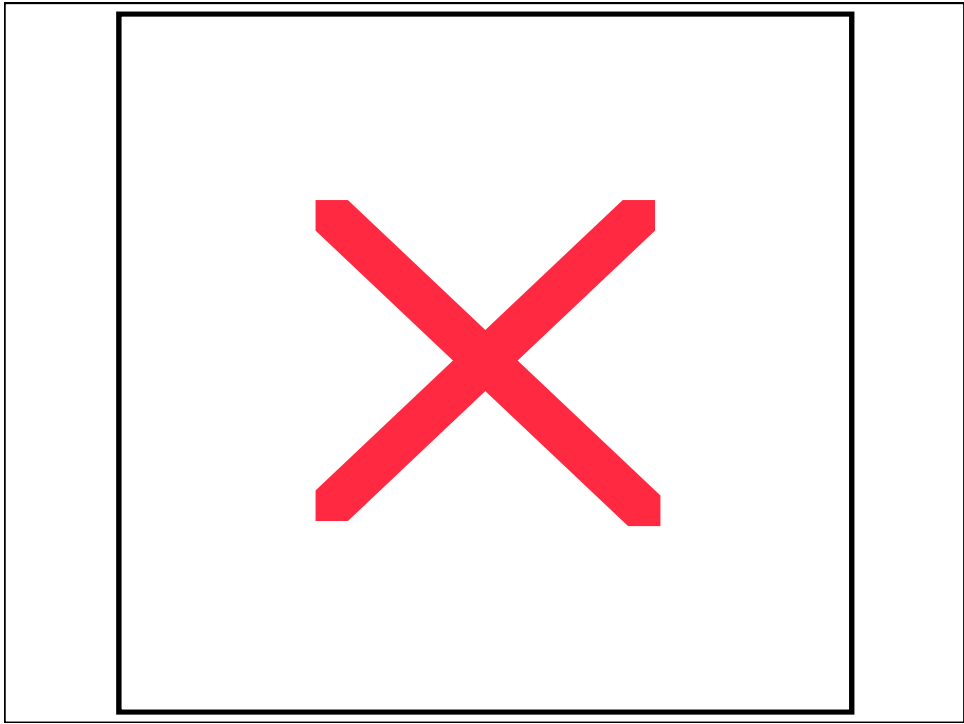


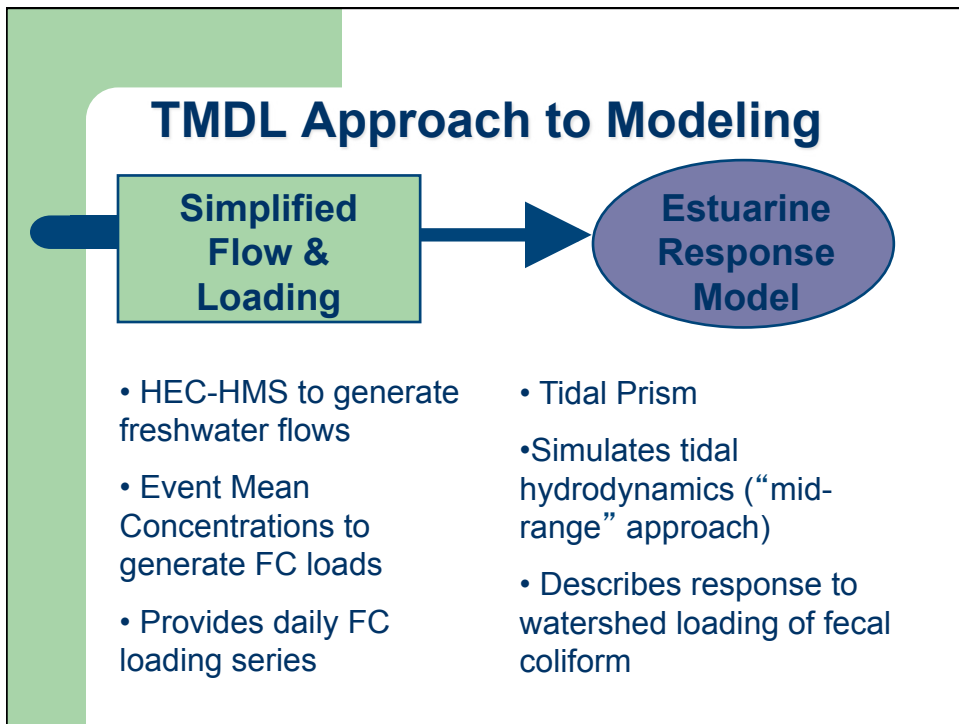
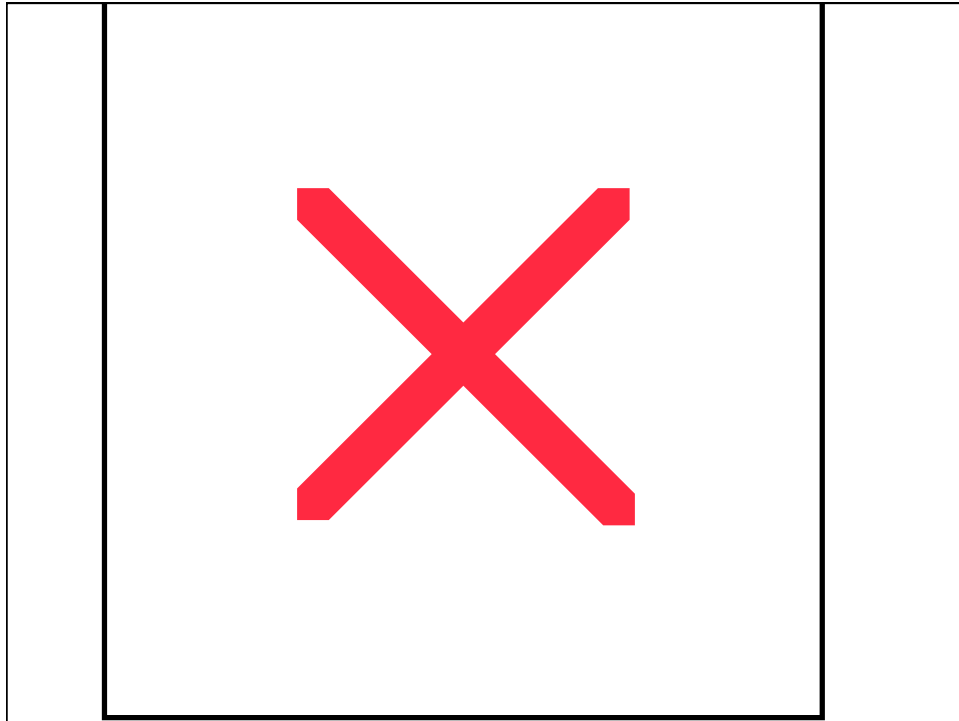
Government Complex



**TMDL
Monitoring &
Data
Collection**





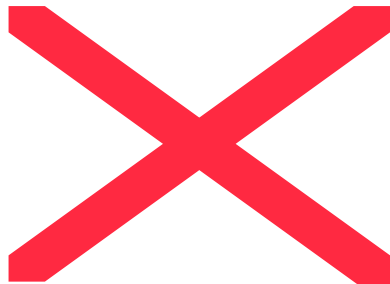


Tidal Prism Model Set-Up

- 3 model segments
- All monitoring sites in MOS2
- Semi-diurnal tidal cycle
- Range of 4.2 feet



HEC-HMS Watershed Model with Loads from EMCs



$$\text{TMDL} = \text{WLAs} + \text{LAs} + \text{MOS} + \text{FA}^*$$

*where applicable

- Existing Load = 6.910E+12
- Wasteload Allocation (WLA) = 2.097E+11
 - Point Sources
- Load Allocation (LA) = 7.855E+11
 - Nonpoint Sources
- Margin of Safety (MOS) = 1.106E+11
- Total Maximum Daily Load (TMDL) = 1.106E+12
- Reduction Required = 86% (with 10% MOS)
- One Permitted NPDES Stormwater Discharge: NCDOT
- WLA for NCDOT = 53% Reduction

TMDL Measurable Results

- TMDL for the Impaired SA Waters of the Lockwood Folly River
- Model Watershed Management Plan
 - pilot that can serve as a model for other impaired waterbodies
- Watershed Implementation Plans
 - recommended management measures
- Public Involvement and Education
 - volunteers trained
 - partnerships in advisory group
 - educational presentations to county/ local officials
 - media stories and information on website, brochure
- Land owners identified/recruited for EEP mitigation projects
- Designs for 2-5 new stormwater BMPs

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