

# Coastal Watershed Planning & BMP Training

Funded by USEPA Wetlands Program Development Grant



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# GSAA - Clean Coastal and Ocean Waters

- **Objectives and Actions**

- *C.C.O.W. 1 Improve watershed management of point and nonpoint source pollution to reduce adverse impacts to water quality.*
  - Establish a regional technical level work group for the purpose of sharing watershed water quality improvement processes.
  - Develop recommendations on processes and protocols to transfer knowledge and implement best management practices for point and non-point source controls, and to encourage smart growth and green infrastructure (including monitoring-based performance measures).

# GSAA - Clean Coastal and Ocean Waters

*Action CCOW1C: Develop recommendations on processes and protocols to transfer knowledge and implement BMPs for point and non-point source controls, and to encourage smart growth and green infrastructure (including monitoring-based performance measures).*

## Implementation Steps:

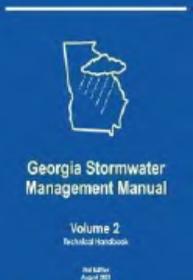
- Produce a compendium of accepted BMPs (done).

[http://southatlanticalliance.org/wp-content/uploads/2013/12/GSAA-CoastWaterQualityBMPs\\_October2015.pdf](http://southatlanticalliance.org/wp-content/uploads/2013/12/GSAA-CoastWaterQualityBMPs_October2015.pdf)

- Host a workshop to summarize the use of structural and non-structural BMPs for storm water controls and fresh water influx into salt water systems and performance measures.

# GSAA Coastal Water Quality BMP Compendium

## Governors' South Atlantic Alliance Coastal Water Quality Best Management Practices

Urban Treatment				
Image	State/National	Title	Weblink	Features
	NC	North Carolina Stormwater Best Management Practices	<a href="http://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-land-permit-guidance/stormwater-bmp-manual">http://deq.nc.gov/about/divisions/energy-mineral-land-resources/energy-mineral-land-permit-guidance/stormwater-bmp-manual</a>	<ul style="list-style-type: none"> <li>• Official BMP guidance on stormwater management in NC.</li> <li>• Has stormwater management guidance for development in NC's 20 coastal counties.</li> <li>• Discusses stormwater BMPs that would meet stormwater provisions in NC regulations and Session Laws, their design criteria, and pollutant removal efficiencies.</li> <li>• Describes several stormwater calculation methods.</li> <li>• Contains chapters on: selecting the right BMP, common BMP design elements, landscape and soil composition specifications, and BMP maintenance.</li> <li>• Has an abundance of information presented through figures, tables, and calculations.</li> <li>• Includes updates to individual chapters.</li> </ul>
	SC	Beaufort County Stormwater and BMP Design Manual	<a href="http://www.bcgov.net/departments/Engineering-and-Infrastructure/stormwater-management/documents/Misc/beaufort_manual_mar2012.pdf">http://www.bcgov.net/departments/Engineering-and-Infrastructure/stormwater-management/documents/Misc/beaufort_manual_mar2012.pdf</a>	<ul style="list-style-type: none"> <li>• Coastal SC local government's official BMP guidance.</li> <li>• Has summary of fed, state, local, and coastal zone regulations.</li> <li>• Includes roadway construction BMPs and design considerations for planners and engineers.</li> <li>• Has BMP guidance for new development based on projected impervious surface.</li> <li>• Detailed charts of effective site imperviousness using various BMPs including LID and green roofs.</li> <li>• Numerous calculation worksheets to assess proposed BMPs effectiveness for individual pollutants.</li> <li>• Antidegradation formulas.</li> <li>• Includes tables for pollutant loading by land use as well as pollutant removal % for individual BMPs.</li> </ul>
	GA	Georgia Stormwater Management Manual	<a href="http://atlantaregional.com/environment/georgia-stormwater-manual">http://atlantaregional.com/environment/georgia-stormwater-manual</a>	<ul style="list-style-type: none"> <li>• Official GA stormwater manual consists of comprehensive three volume set on stormwater management policy (Vol 1), technical design standards (Vol 2), and pollution prevention (Vol 3).</li> <li>• Stormwater Policy Guidebook provides guidance for local jurisdictions on the basic principles of effective urban stormwater management including regulatory requirements, local programs, implementing requirements for development, watershed-based and floodplain planning, stormwater operations and maintenance, pollution prevention, and information tools.</li> <li>• Technical Handbook provides guidance on the techniques and measures that can be implemented to meet a set of stormwater management minimum standards for new development and redevelopment including sustainable site design and stormwater management BMPs (planning and design, hydrology, structural control, drainage system design, and numerous appendices). Vol. 2 is intended for site planners, engineers, contractors, local plan reviewers and inspectors on required on-site measures.</li> <li>• The Pollution Prevention Guidebook is a compendium of stormwater pollution prevention and control measures for use by local jurisdictions, business, industry, institutions and the public.</li> </ul>

# EPA Region 4 Wetlands Program Development Grant

Provide regional-scale data, analysis, information, and research that meets the common needs of the states in pursuing their priorities for wetlands protection, restoration, and management with the **ultimate goals of improving water quality and coastal resilience**

1. Enhance the comparability of coastal wetlands monitoring efforts
2. Increase capacity for implementing water quality BMPs
3. Support the expanded use of living shorelines



# Ideal Framework Identified

- NCCF Watershed Management Planning Guidebook
- Why?
  - Targeted to coastal watersheds
  - Volume reduction strategy
  - Detailed process of application already developed

## Watershed Management Planning Guidebook



NORTH CAROLINA COASTAL FEDERATION

# Coastal Watershed Planning & BMP Training

## Objectives

1. Increase capacity for development of watershed restoration plans by local authorities and resource managers
2. Facilitate implementation of Coastal Water Quality Best Management Practices (BMPs)



# Train the Trainers Workshop

- Held in Wilmington, NC on April 27
- 35 attendees representing all four GSAA states.
- Followed by NC Coastal Watershed Planning workshop the next day – 65 attendees



# Key Elements of Curriculum

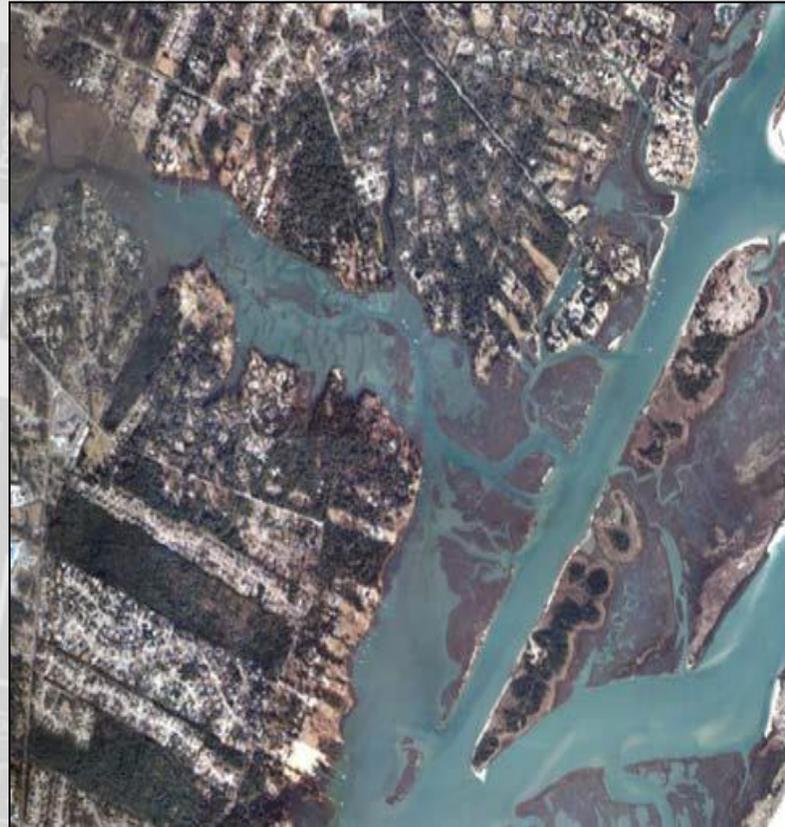
- Philosophy behind volume reduction
- Understanding the Regulatory Framework
- Forming Partnerships and Community Support
- Setting WQ Goals and Defining Watersheds
- Data gathering and Watershed Characterization
- Calculating Volume Reduction Goals and Selecting BMPs
- Structuring Watershed Plan's Priorities and Schedule
- Examples of Completed Successful Watershed Plans

# Hewletts Creek Example

BEFORE



AFTER



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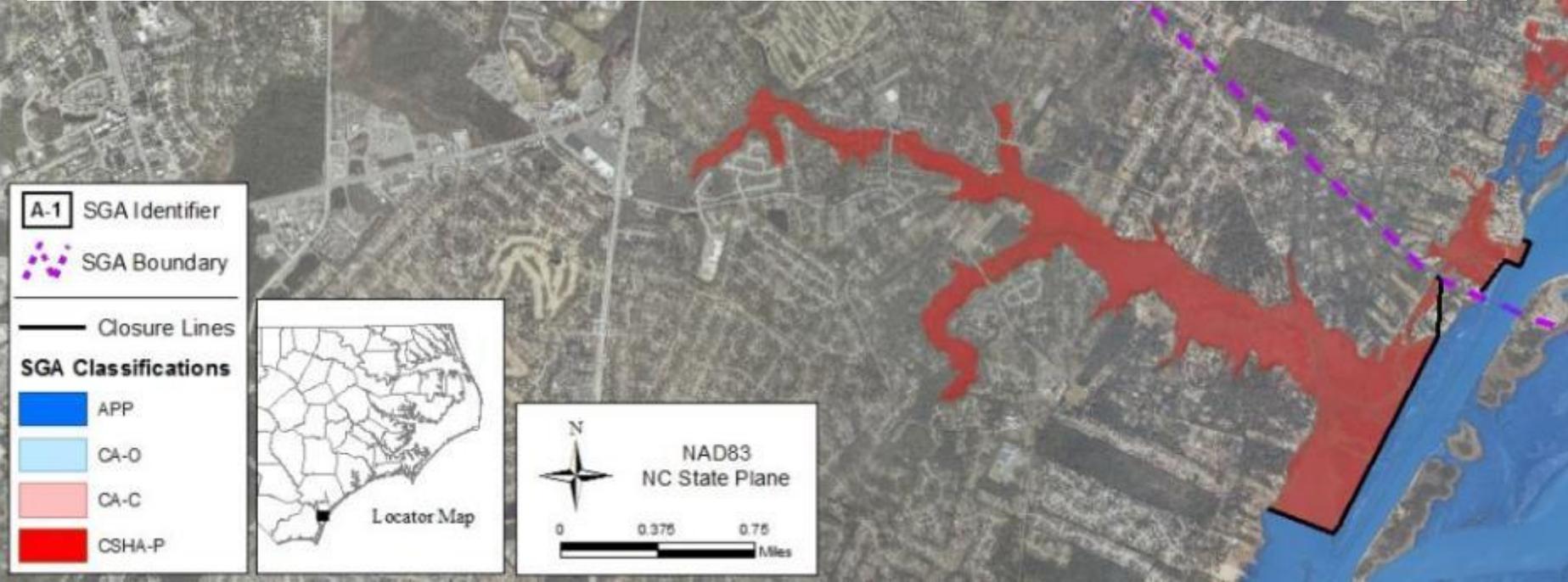
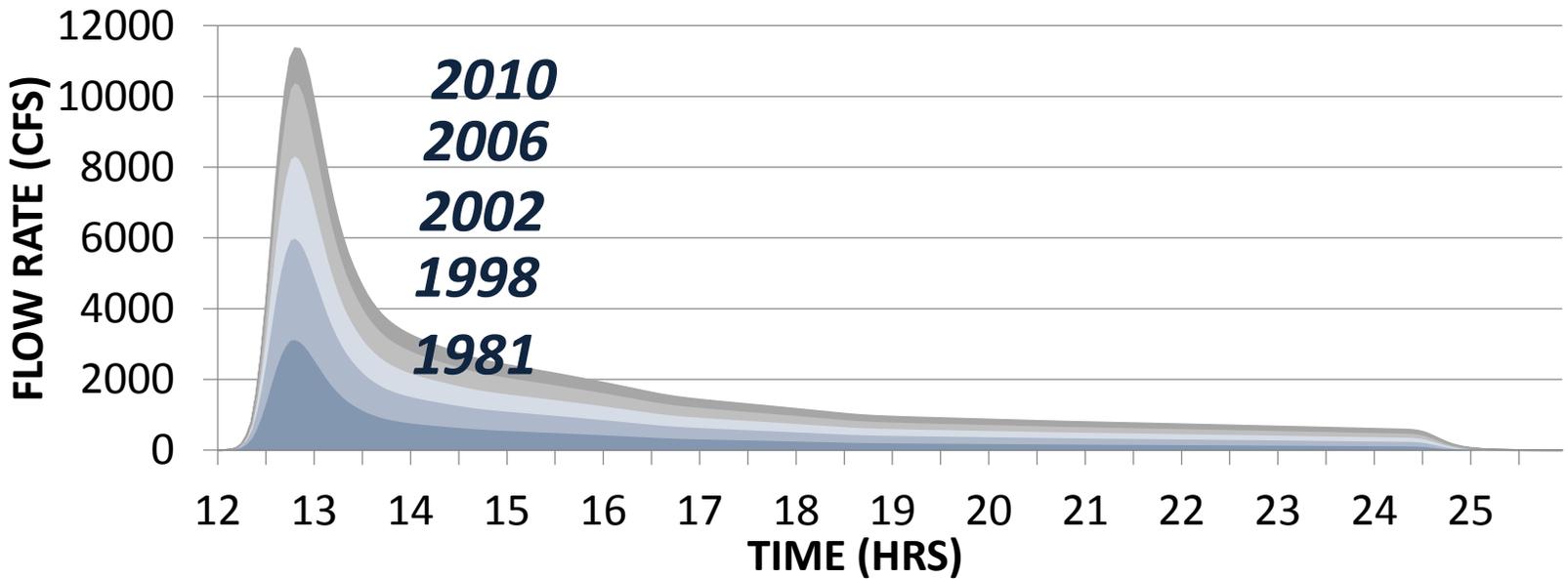
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# HEWLETTS CREEK WATERSHED 1-YR STORM HYDROGRAPHS



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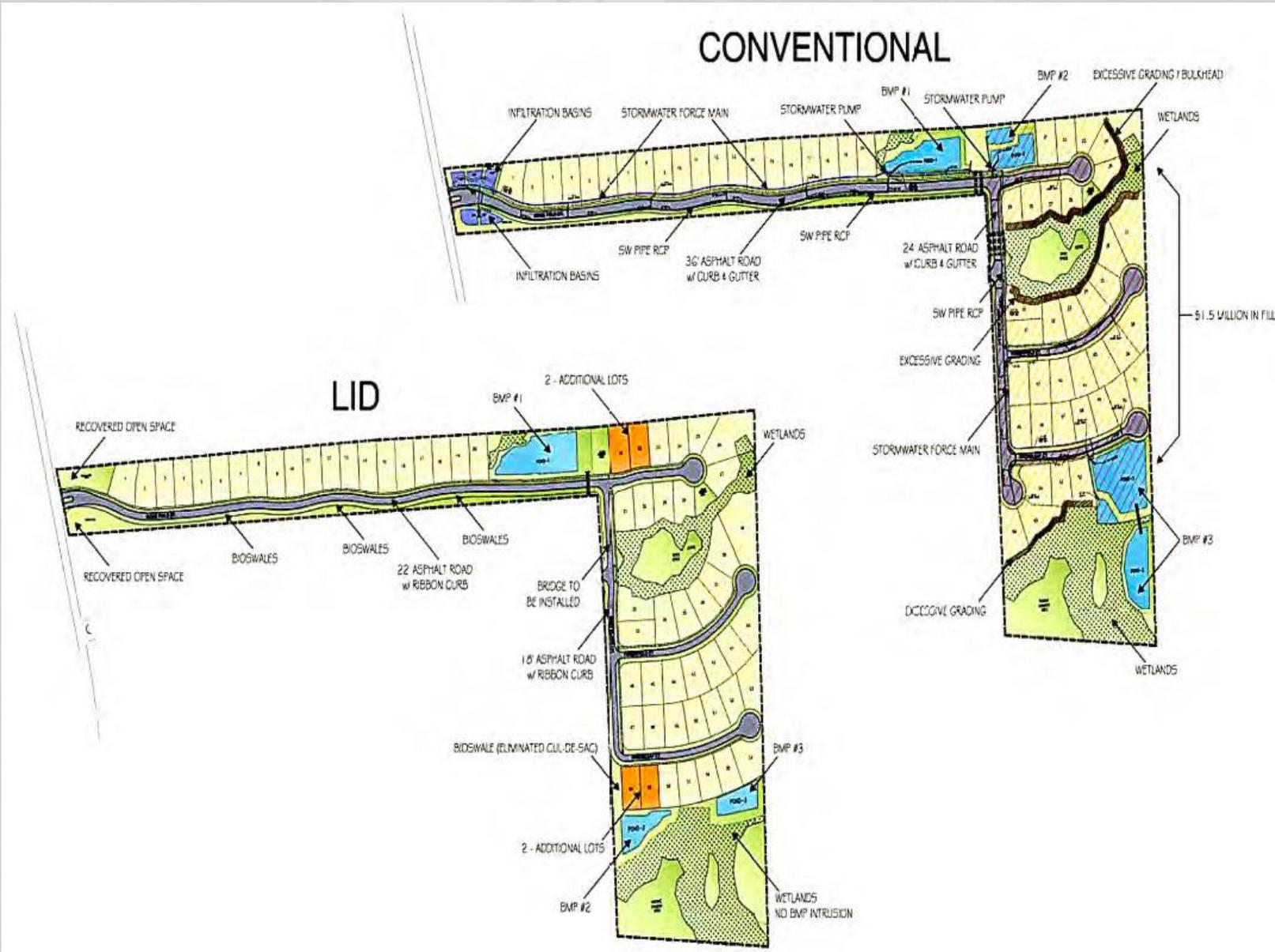
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# Identify Appropriate Strategies & BMPs



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# Implementation Budget

## Consider

- Permitting Fees
  - Staffing and Labor
  - Equipment
  - Education Activities
  - Outsourced Work
- Identify Technical Needs
  - Identify Funding Resources and Opportunities



# Draft the Plan

## *Watershed Management Plan Writing Template*

1. Executive Summary
2. Introduction
3. Watershed Description
4. Watershed Conditions
5. Runoff Volume Reduction
6. Goals
7. Management Strategies
8. Implementation Program

[Watershed Name]

COASTAL WATERSHED MANAGEMENT PLAN

[Insert Cover Image, delete this text box]

[YEAR]

# Follow-Up Steps

- Held follow-up meeting with Task 3 Work Group.
  - Lessons learned session – what worked, what didn't?
- Revise/refine training agenda and curriculum materials as necessary.
- Worked with CCOW to facilitate planning for training sessions in remaining GSAA states (SC, GA, FL).
- Consultation as necessary to support remaining training workshops.



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THANK YOU!

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