

SE Lakes Conference: *Sustainable Stormwater*



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NC DWQ / STORMWATER PERMITTING UNIT

MAY 6TH, 2010

“Sustainable Stormwater”?



- Sustainable Stormwater - Mean to You?
 - ; Keep Raining?
 - ; Keep Draining?
 - ; Keep Permitting?

- DWQ's View?
 - ; SPU Programs
 - ✦ Industrial / NPDES
 - ✦ “State Stormwater”
 - ✦ New Legislation and Directions
 - ; Branch
 - ✦ Wetlands / 401 Programs

Who We Are...



- Stormwater & Wetlands Branch
 - Part of DENR
 - Division of Water Quality
 - Surface Water Section
 - Stormwater and Wetlands Branch
 - Central Office – SPU

Wetlands & Stormwater Branch Programs



Mostly Quality

- i NPDES – Industrial SW Program
 - ✦ SW Runoff - Industrial Facilities
 - ✦ Cities & DOT
 - ✦ Construction Activities

Mostly Quantity (Quality)

- i “State Stormwater” (Post-Construction)
 - ✦ Coastal Stormwater
 - ✦ “Phase II” Stormwater Post-Construction
 - ✦ ORW/HQW, WS
 - ✦ Universal Stormwater Program
 - ✦ Impervious Parking Law
 - ✦ LID (not mandated)... See Christy Perrin’s talk
- i 401: Wetlands & Buffers

NPDES SW Permits



- National Pollutant Discharge Elimination System
- Federal Authority – CWA
- Delegated to NC – Administer, 1975
- NPDES:
 - Control & Monitor Stormwater Runoff
 - Authority to Discharge Stormwater
 - Rain or Snowmelt
 - Parking Lots, Roof Tops, Outside Industrial Areas
 - Not WW Mixing

NPDES SW Permits – 10 Industrial Categories

- General Permits

- 22 GPs - *many* Permittees / Permit
- ~3800 Total Permittees

| Mines | Ready Mix Concrete | Food Processing |
|---------|--------------------|-----------------|
| Marinas | Asphalt | Landfills |
| Paints | Mulch | Airports |

- Individual Permits

- Large, Complex
- ~250 Permittees
- Chemical Plants, Fertilizer, Power Plants, Pressure Treated Lumber...

NPDES SW Permits – 10 Industrial Categories



- Permit – Conditions:
 - ┆ Monitoring / Data Collection
 - ✦ Analytical
 - ✦ Qualitative
 - ✦ SW & SW Vehicle Maintenance Areas
 - ┆ Stormwater Pollution Prevention Plan (SPPP)
 - ✦ BMPs, Training, Prevention
 - ┆ 2ndary Containment
 - ┆ Site Inspections: RO Staff
 - ┆ Enforceable (Fines)

NPDES SW Permits – Cities & D.O.T.



- Entities Implement Programs
- DWQ Reviews
- Renewed - 5 Years

- i Large Phase I: MS₄ Municipality Permits
 - ✦ Own City Program – Monitoring
 - ✦ Post-Construction, Construction, Illicit Discharge

- i Phase II Municipality Permits
 - ✦ No Monitoring Now...
 - ✦ Public Education & Outreach, Involvement
 - ✦ Illicit Discharge Detection
 - ✦ Construction Runoff
 - ✦ Post-Construction SW Controls

- i DOT

NPDES Permits – Construction Sites



- Construction Sites \geq 1 acre
- General Permit
- Renewing in 2011...
 - ; Monitoring – Turbidity
 - ; Ground Cover – 14 Days of Disturbance
 - ; Use Skimmers – Sediment Ponds
 - ; Buffers
 - ; Vegetated Area Discharges
 - ; Volume & Peak Flow Requirements

Post-Construction Programs



- i "Phase II" Stormwater Post-Construction
- i Water Supply (WS)
- i Jordan Lake, Falls Lake, NSWs
- i Coastal Stormwater Rules
- i ORW/HQW
- i Special Management Strategies
- i Universal Stormwater Program
- i Impervious Parking Law
- i 401: Wetlands & Buffers
- i LID

Post-Construction: Goals

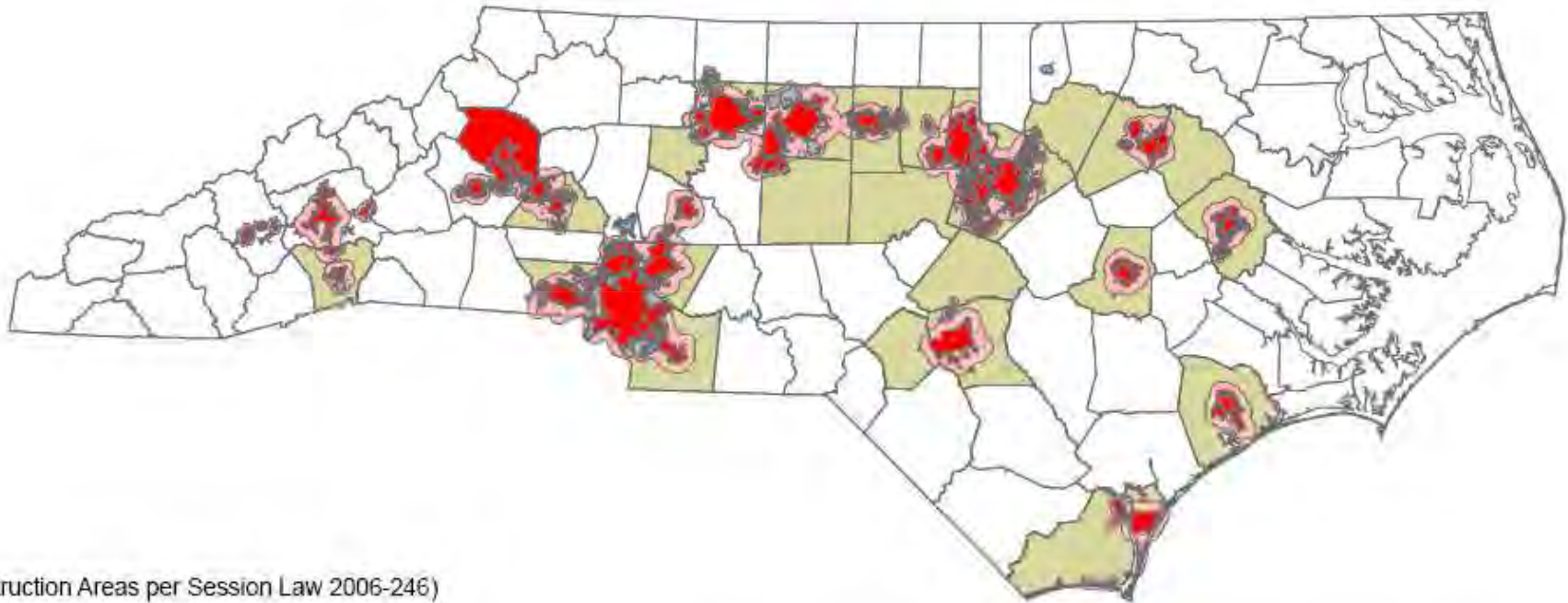


- *Control & Treat - Post-Construction Runoff*
 - ; Runoff - BUA: Buildings, Concrete, Asphalt
 - ; Minimize BUA & Passive Stormwater Management
 - ; Engineered Controls if Necessary
 - ✦ Stormwater Best Management Practices (SW BMPs)
 - ; SW BMPs = Ponds, Wetlands, Rain Gardens...
 - ; *Control & Treat Runoff - 1" or 1.5"*
 - ; *Treatment*
 - ✦ Design : TSS
 - ✦ Fecal Coliform, N, P, ~Metals



Photo by NC

Phase II Post-Construction Session Law 2006-246: Who's Covered?



(Post-Construction Areas per Session Law 2006-246)

Legend

- Exempt Municipalities and ETJs (as of July 7, 2007)
- NPDES Phase I & II Municipalities
- NPDES Phase I & II ETJs (2007)
- NPDES Phase I & II Counties
- Phase II MSIs (from 2007 Boundaries)
- Designated Phase II Municipalities (as of October 1, 2008)
- Urbanizing Areas (2000 Census)
- Phase II Tipped Counties (Post-Construction)

*Post-Construction requirements still apply inside exempted municipality boundaries and will be implemented by DWQ or delegated authority (e.g., County).

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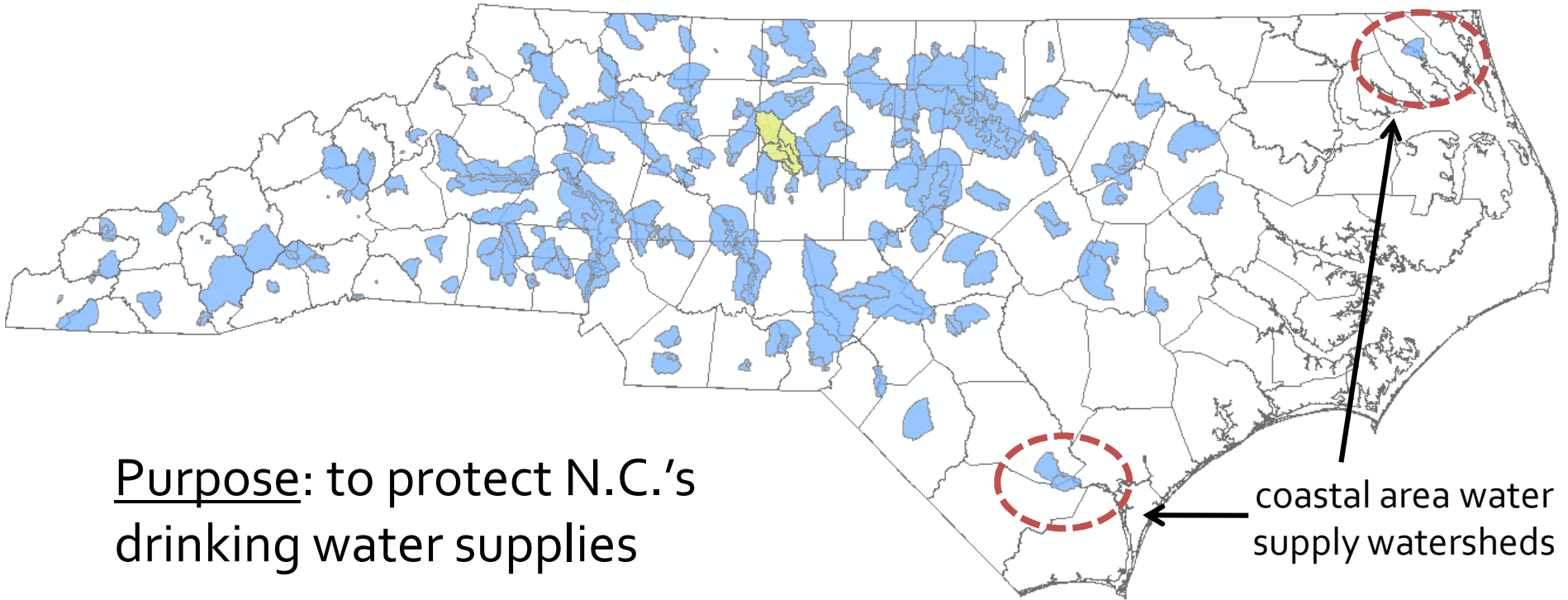


“Phase II” Post-Construction



- Who Implements it? It depends!
 - Local Government
 - DWQ Central Office
 - DWQ Regional Office
- What's Required?
 - High density: 1" or 1.5" (coastal counties)
 - Remove 85% Total Suspended Solids (TSS)
 - Draw-down w/in 2-5 days
 - LD Threshold: $\leq 24\%$ BUA (12% BUA Shellfish)
- Several State SW Programs deemed compliant

Water Supply Watersheds



Purpose: to protect N.C.'s drinking water supplies

coastal area water supply watersheds

Water Supply Watershed Protection Program

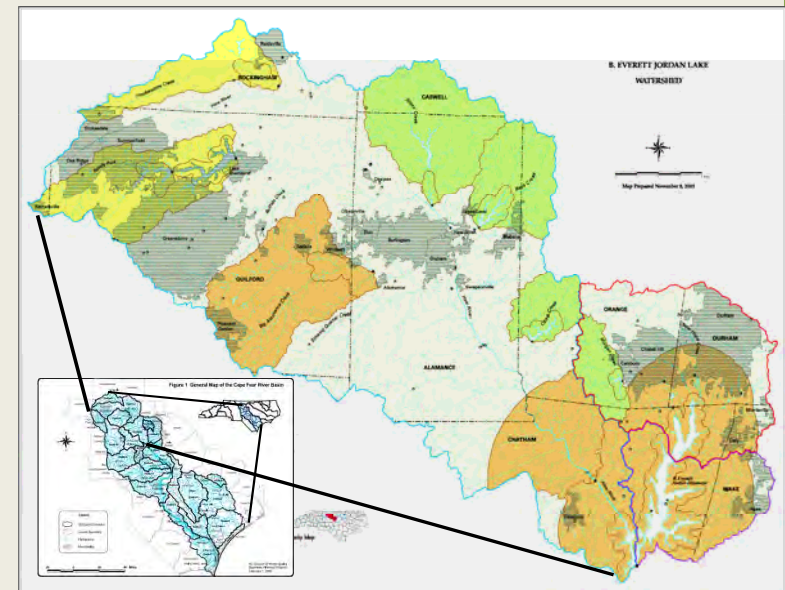


- Began in the mid-1970s
- Goal: minimize volume and pollutant load of SW:
 - Limiting BUA
 - Vegetative Buffers
 - Stormwater Controls
- Local governments
- 2005: Drinking Water Supply Reservoir Act / Senate Bill 981
 - Nutrient management strategies impaired reservoirs

Jordan Lake Rules



- EMC adopted Nutrient Strategy Rules: May 2008;
- RRC approved November 2008
- Effective August 2009
- All local governments reduce nutrients development
- 50' riparian buffers
- www.jordanlake.org



Jordan Rules in 15A NCAC

2B .0262-0.273; .0311

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Falls Lake Nutrient Management Strategy

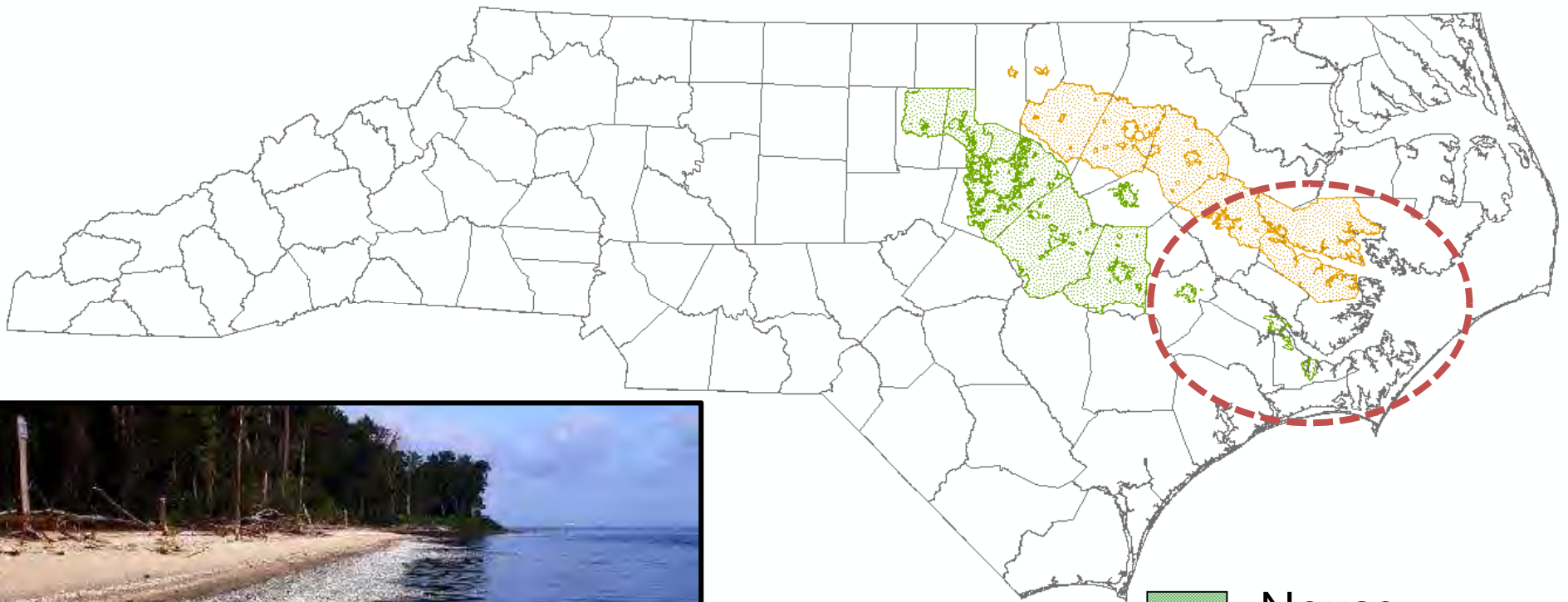


- Under development
- Stakeholder process began in 2008
- Anticipate having Strategy adopted by General Assembly in 2011



Photo courtesy of USACOE website

Nutrient Sensitive Watersheds (Implemented by Local Governments)



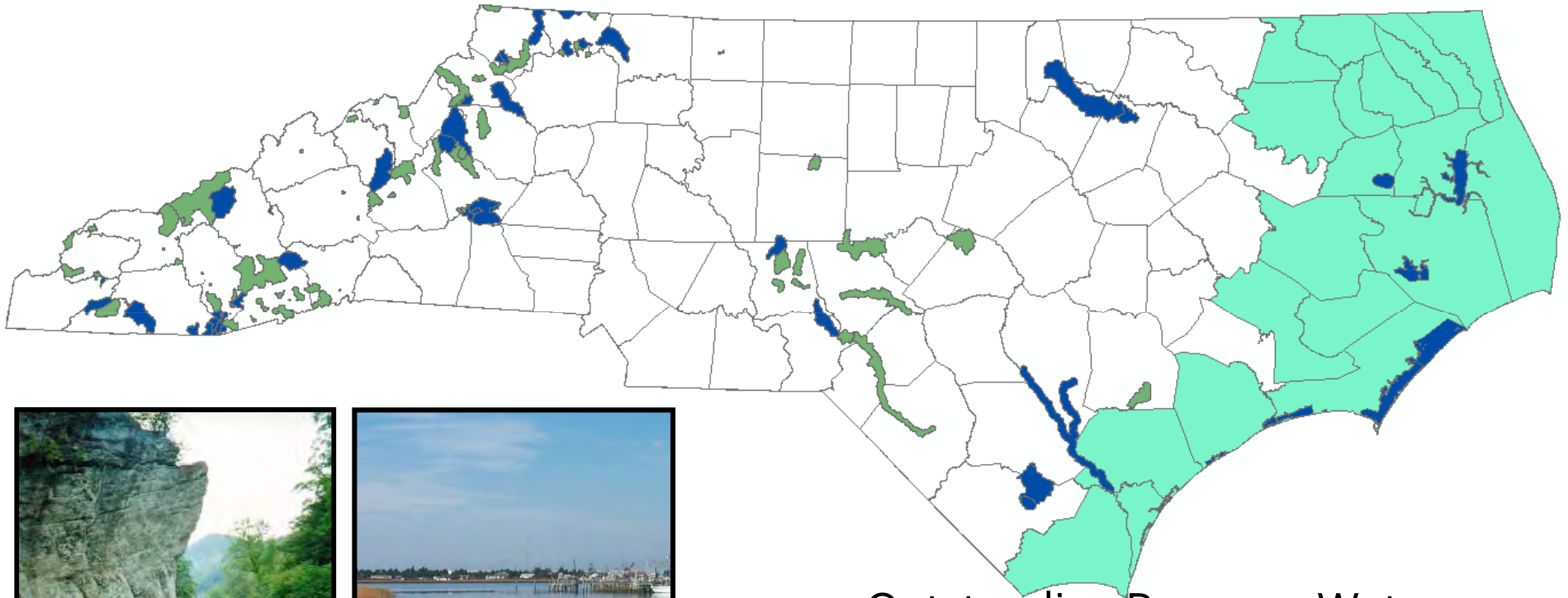
- Neuse
- Tar-Pamlico




Rules in 15A NCAC 2B .02005



Photo by DWQ

HQW, ORW, Coastal Stormwater



-  Outstanding Resource Waters
-  High Quality Waters
-  Coastal Stormwater

Rules in 15A NCAC 2H .1000s

N.C. Division of Water Quality

Coastal Stormwater & HQW/ ORW



- Permit required – Any Development Activities
 - i **E&SC** (disturb ≥ 1 acres)
-OR-
 - i **CAMA major permit** AND meet any of the following criteria:
 1. w/In 20 Coastal Counties,
-OR-
 2. Drain **ORW**,
-OR-
 3. Located ≥ 1 -mile & drain **HQW**

Coastal Stormwater Regulations



- 20 Coastal Counties
- October 1, 2008 : SL 2008-211
- Who Needs A Permit?
 - i Non-Residential
 - ✦ Add > 10,000 ft² BUA
 - i Residential
 - ✦ < ½-mile & draining SA waters
 - ☺ disturb < 1 acre
 - ☺ > 10,000 square feet BUA
 - = 12% total BUA

What About Phase II Areas in Coastal Counties?



- New Coastal or “old” Phase II?
- Depends:
 - New Coastal Rules – Where DWQ reviews projects
 - Towns:
 - Original Phase II requirements
 - Until MS₄ permit is renewed
 - Include new Coastal SW post-construction requirements
 - ****Verify local requirements****

Special Management Strategies



- **New Development Certain Watersheds**
 - ; Subject more stringent requirements (e.g. threatened and endangered species)
- **This can include:**
 - ; Lower built-upon area thresholds
 - ; Buffers for certain streams
 - ; Restrictions on certain NPDES discharges



Goose Creek Watershed Management Strategy



- Rules in 15A NCAC 2B .0600s
- All New Development:
 - ≥ 1 acre &
 - Add BUA = Install SW Controls
- Infiltration = Preferred
- Treat Δ (Pre – Post-development) run-off from 1-year, 24-hour storm
- Buffer:
 - 100-Year Floodplain = 200' stream buffers,
 - All other Streams = 100' buffers

Other Special Management Strategies



- Six mile Creek & Waxhaw Creek Watersheds: Union & Mecklenburg Counties
 - ; Implementing Goose Creek Requirements
- Other examples ORW Special Management Strategy Areas:
 - ; Black and South Rivers ORW Area
 - ; Lake Waccamaw ORW Area
 - ; Fontana Lake North Shore ORW Area

Universal Stormwater Management Program

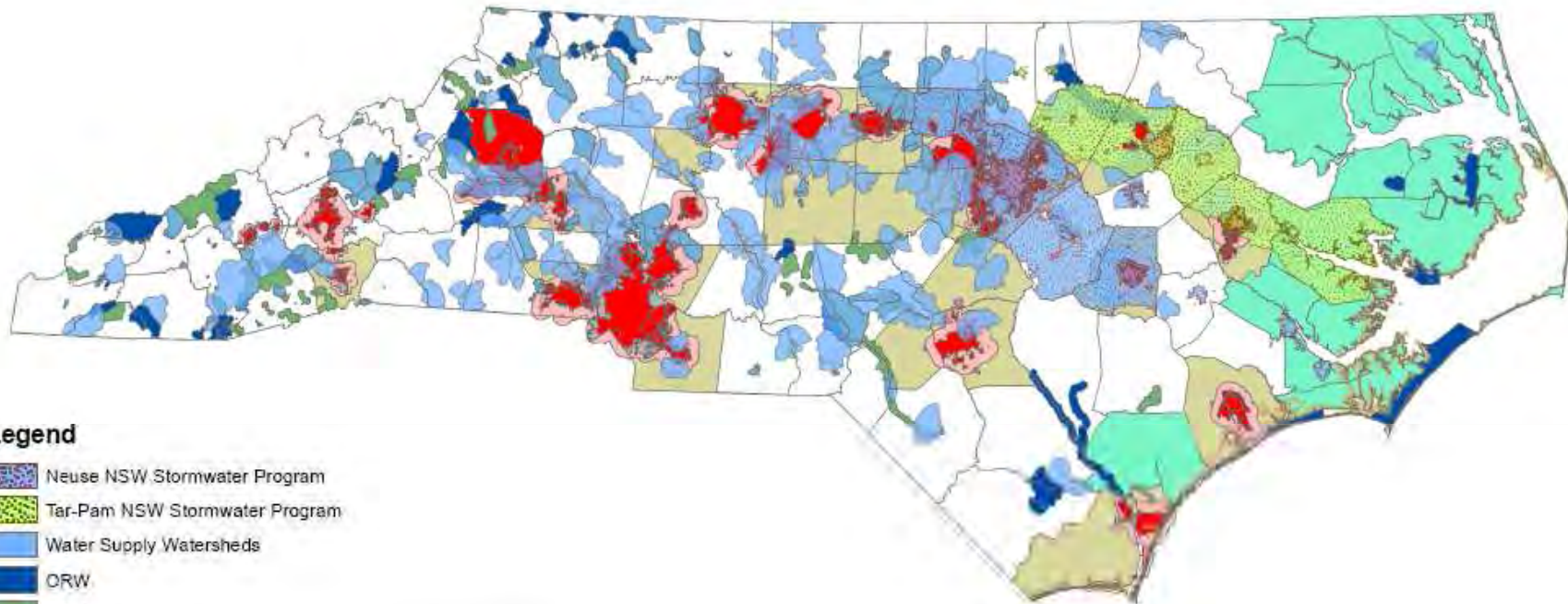


- Voluntary
- Satisfy post-construction requirements ~ All State SW
- See 15A NCAC 2H .1020

- USMP has been adopted by:
 - Emerald Isle, Kure Beach
 - Ahoskie
 - Butner, Monroe



Stormwater Management Programs: All Together!



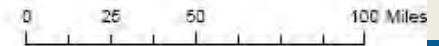
Legend

-  Neuse NSW Stormwater Program
-  Tar-Pam NSW Stormwater Program
-  Water Supply Watersheds
-  ORW
-  HQW
-  SA (Shellfish) Areas
-  Exempt Municipalities and ETJs (as of July 7, 2007)*
-  NPDES Phase I & II Municipalities
-  NPDES Phase I & II ETJs (2007)
-  NPDES Phase I & II Counties
-  Phase II MSIs (from 2007 Boundaries)
-  Designated Phase II Municipalities (as of October 1, 2008)
-  Urbanizing Areas (2000 Census)
-  Phase II Tipped Counties (Post-Construction)
-  Coastal Counties - Coastal Stormwater Rules

Phase II Areas
per Session Law 2006-246

*Phase II Post-Construction requirements still apply inside exempted municipality boundaries and will be implemented by DWQ or delegated authority (e.g., County).

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Determine Jurisdiction Using the Interactive Map!!

N.C. Division of Water Quality

[about the division](#) | [contact us](#) | [dwq sections](#) | [glossary](#)



"To preserve, protect
and enhance
North Carolina's water..."

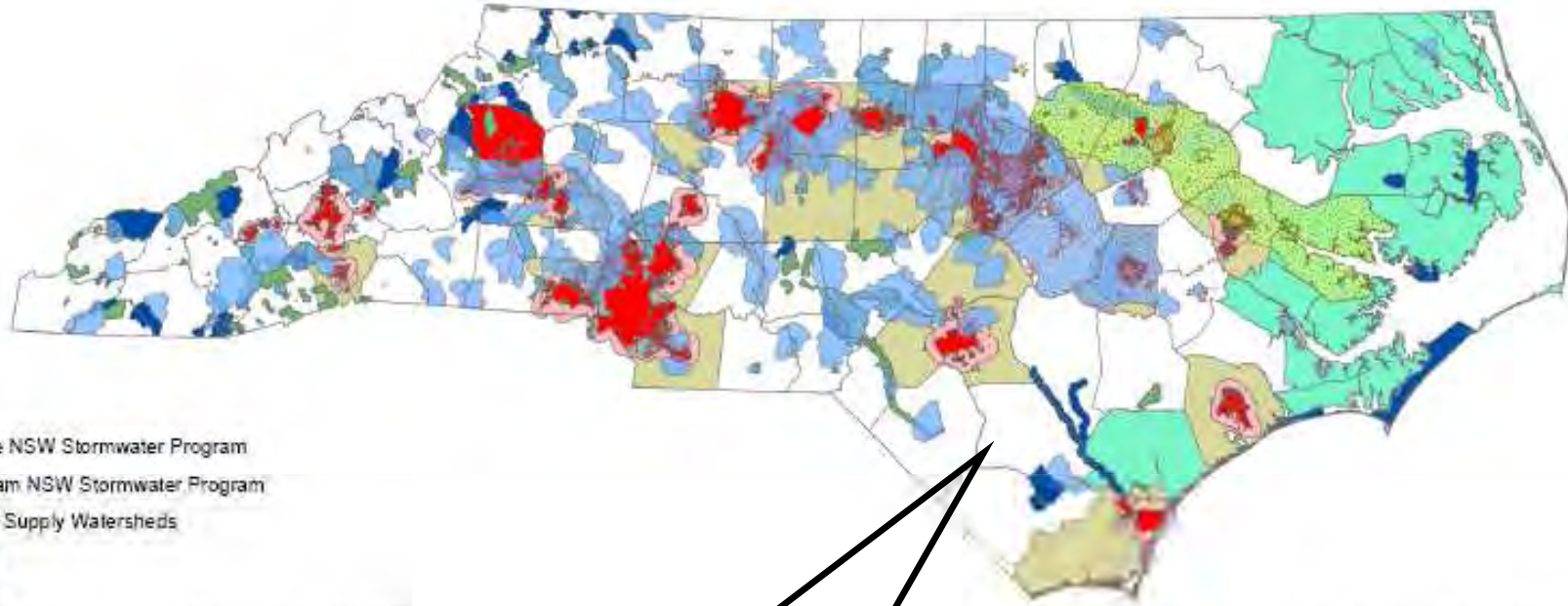


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|---|----------------------|---------|
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| State : | NC | |
| Zip Code : | <input type="text"/> | |
| <input type="button" value="Find Address"/> | | |



http://h2o.enr.state.nc.us/su/msi_maps.htm

Wait... Impervious Parking Legislation?



Legend

- Neuse NSW Stormwater Program
- Tar-Pam NSW Stormwater Program
- Water Supply Watersheds
- ORW
- HQW
- Exempt Municipalities and ETJs (as of July 7, 2007)
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- Coastal Counties - Geographic

Non-shaded areas are subject to S.L. 2008-198

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12/19/2008

Impervious Parking Legislation



- Session Law 2008-198
- Limits on % impervious areas for vehicular parking lots
- Effective April 1, 2009
- All areas of NC

not under a DWQ SW Program

- *Not* Implemented by DWQ – Local
- For more information, go to:

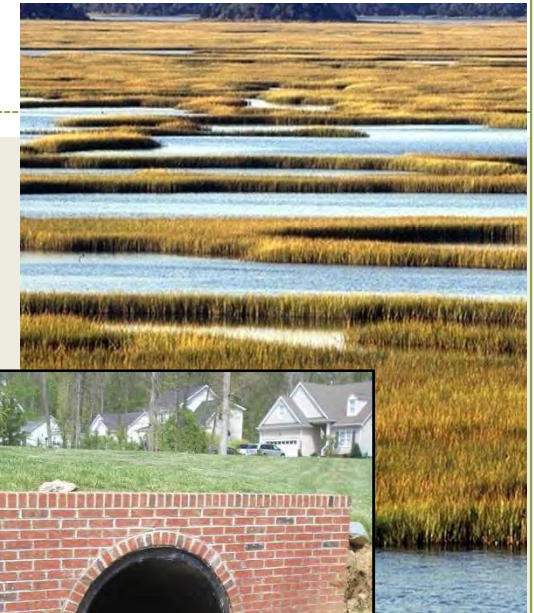
<http://h2o.enr.state.nc.us/su/parkingspaces.htm>



401 Water Quality Certification (WQC) – SW Management Plans

- WQC: When a project
 - i Requires a 401 WQC
 - OR- Isolated Wetlands Permit
 - AND-
 - i Contains a drainage area with impervious cover $\geq 24\%$

Reviews conducted by the 401 Oversight/
Express Permitting Unit (Central Office)



What about LID For DWQ Projects?



- Not Required... But...
 - Simplified Review Process
 - Fewer Supplement & Forms
- DWQ: Evaluate a project deemed 'LID'
- LID Guidebook from NCSU
- LID:
 - Still Meet *All* NC BMP Manual Design Criteria



Photo by DWQ

Please Visit Our Website



- Main
- <http://portal.ncdenr.org/web/wq/ws/su/>
- NPDES
- <http://portal.ncdenr.org/web/wq/ws/su/npdessw>
- State Stormwater
- http://portal.ncdenr.org/web/wq/ws/su/statesw/forms_docs

Questions?



NC DENR / DWQ / Stormwater Permitting Unit

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Stormwater Benchmarks



- What are Stormwater Benchmarks?

- Action Levels
- Stormwater Only
- Tiered System if Exceed
- Not WW Limits

- Differences: Benchmarks & Limits?

- No Direct Fines w/ Benchmark Exceedences
- Not always same numeric value
- NC DWQ: Typically Limits WW

Benchmarks Values?



- Where do we get the values?
 - EPA: *Water Quality Criteria*
 - EPA: Sector Notebooks
 - Federal Drinking H₂O Stnd.
 - NC Surface H₂O Stnds.
(15A NCAC 02B. 0121)
 - DWQ Standards Group: EPA ECOTOX

Benchmark Calculation



- How do we calculate Benchmarks?
 - ½ FAV (ECOTOX)
 - ✦ Final Acute Value
 - ✦ Stormwater - Typically Not Chronic
 - EPA Criteria
 - Standards or NC Standards
 - Reviewed Triennially

Benchmark - Tier System



- ~All permits... (General & Individual)
 - i Tier 1
 - ✦ 1 Exceedence
 - ✦ ID Source
 - ✦ Remedy
 - i Tier 2
 - ✦ 2 Consecutive Exceedences
 - ✦ Monthly Monitoring
 - i "Tier 3"
 - ✦ Any 4 Exceedences / Permit
 - ✦ Call RO...

Benchmarks – “Tier 3”



- DWQ (ROs) Can ask:
 - ∣ Revise Monitoring Schedule
 - ∣ Ask General Individual Permit
 - ∣ Install Structural BMPs
 - ✦ Call Consultant
 - ∣ Other Measures...

Why Phase II in N.C. Goes Beyond the Federal MS4 Program...



- July 1, 2007: Session Law 2006-246 expanded post-construction requirements beyond incorporated limits of cities / towns
- Automatic and State-designated entities
- Requires stormwater controls for projects that disturb one acre or greater
- Phase I and II communities can adopt more stringent ordinances