Implementation of Stormwater Rules and Programs

Annual Report to the Environmental Review Commission in accordance with G.S. 143-214.7(e)

November 22, 2005

Why is Stormwater so important?

- The pollution associated with stormwater runoff is the number one water quality concern in North Carolina.

Overview

- Phase 2 Update
  - Implementation of Session Law Program
  - EMC Permanent Rules Update
- Universal Stormwater Management Program
- Review of Effectiveness of Coastal Stormwater Programs

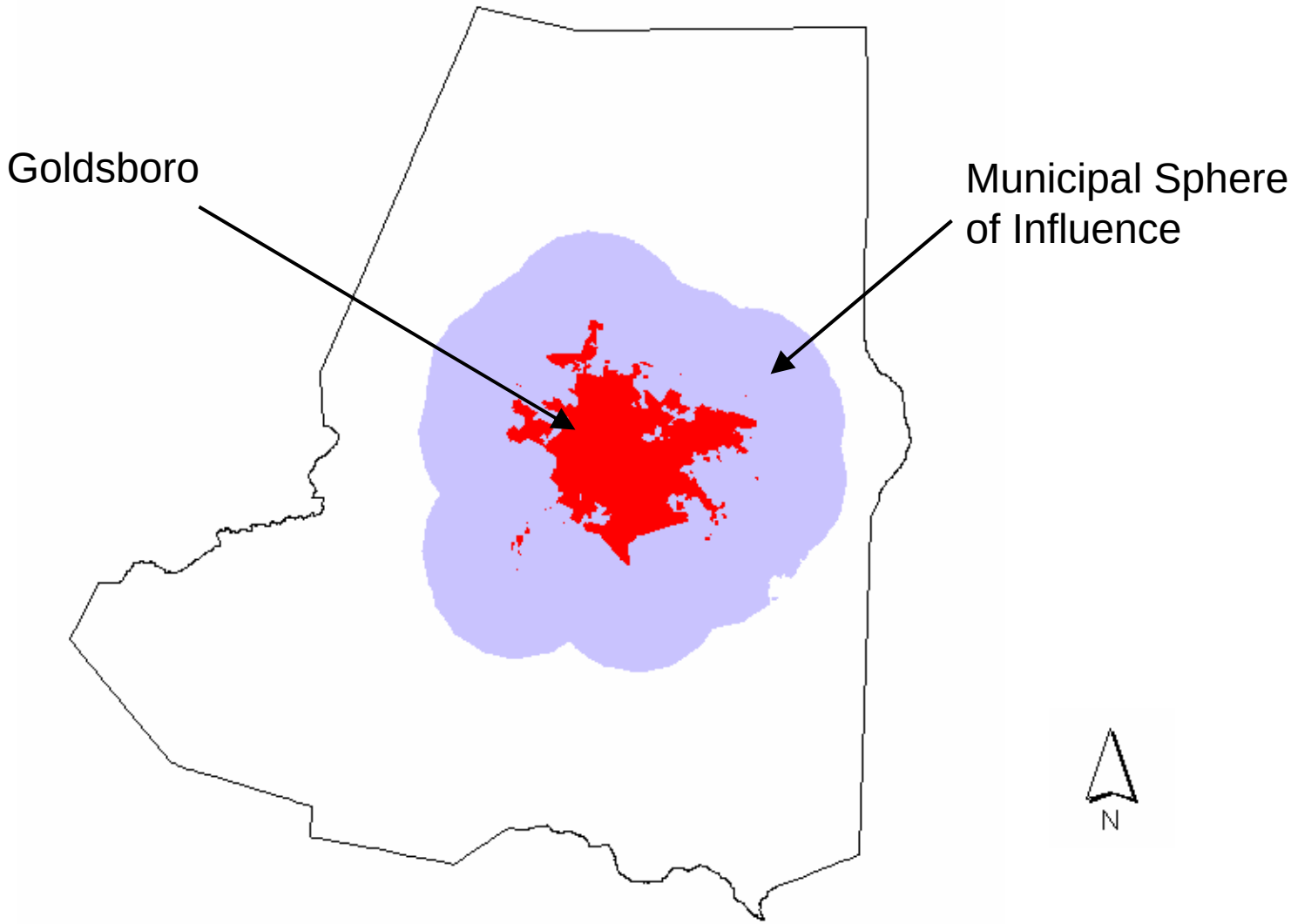
Phase 2 – Session Law

- Enacted by S.L. 2004-163
- Satisfied federal Phase 2 requirements.
- 123 Municipalities in urbanizing areas
- Municipal Spheres of Influence (MSIs)
  - 1 to 3 miles beyond corporate limits
  - S/w permits required for new development

Phase 2 – Session Law Implementation

- DWQ issued permits for 91 municipalities
  - No more to issue at this time.
  - S/w permits for new development in 24 months
- Counties – 2 issued / 9 more applied
- No permits for coast: 6 mun. / 3 counties
- Permit for new development in MSIs
  - Beginning July 2006
  - Administered in MSIs by DWQ for all of NC

Municipal NPDES Stormwater Program in Wayne County



Munic. Pop. < 10,000 — **1 Mile**
10,001 < Munic. Pop. < 25,000 — **2 Miles**
25,001 < Munic. Pop. — **3 Miles**

Phase 2 – Session Law Implementation

- General Permit for Non-Coastal Communities
- Model Ordinance available.
- Design manual revision.

Phase 2 – EMC Permanent Rules

- Approved by RRC on Nov 17, 2005.
- Review in 2006 Legislative Session.
- Session Law expires Oct. 2011.

Differences - S.L. vs. EMC Rules

- Stormwater Design Standard
- Low Density in Coastal Area
- MSI vs. County Coverage
- State Designation Process

Differences – Design Standard

- S.L.: Control of difference of 1 year storm in pre and post development.
  - More stringent / conservative
  - Require control of 3.5 rainfall event in Raleigh
  - Existing rules require 1 inch event.
- EMC Rules: Control of first 1 inch of s/w runoff.

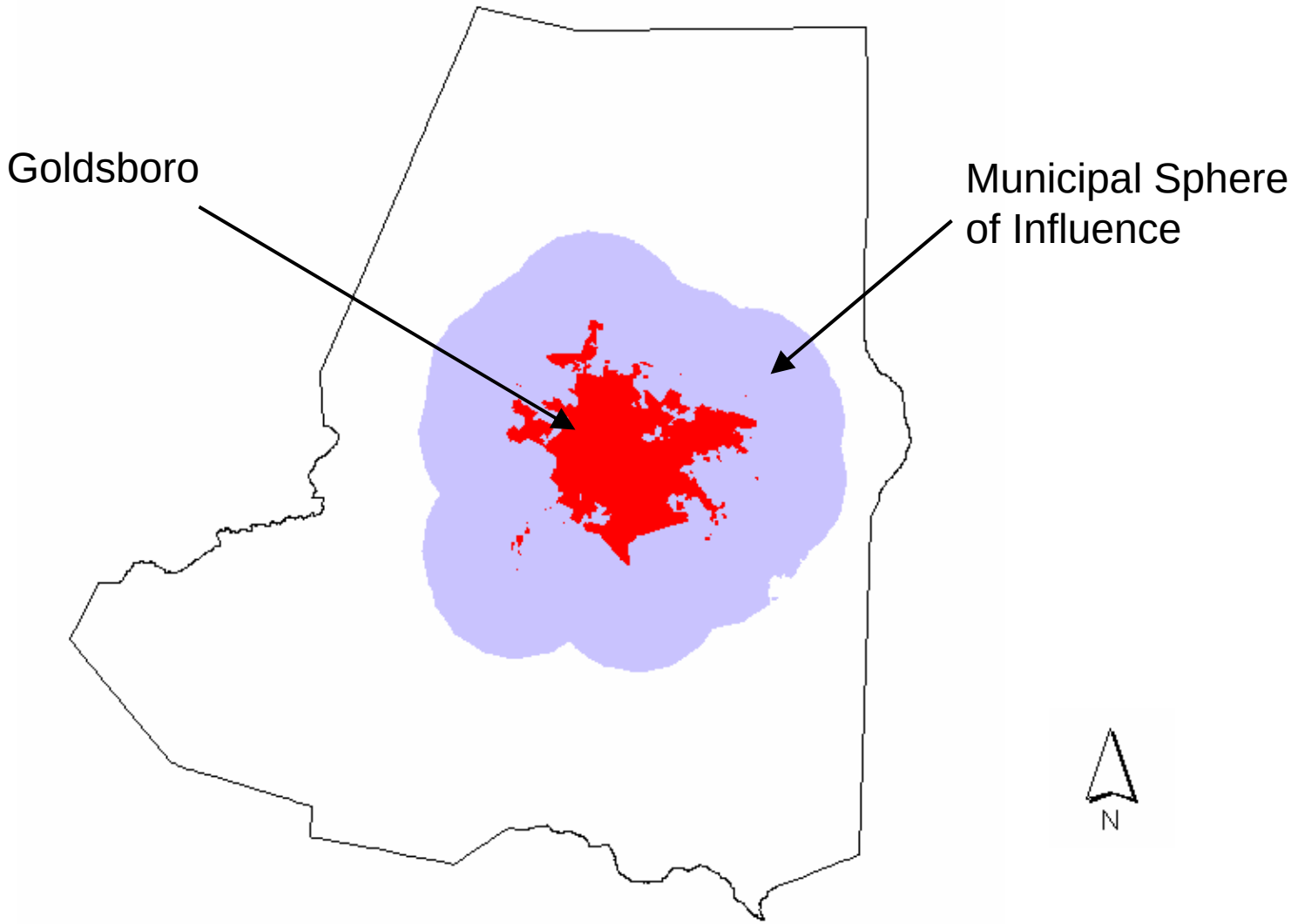
Differences – Low Density in Coastal Areas

- Engineered controls not req. in low density.
- Different low density in coast for projects draining to shellfishing waters.
- S.L.: Low density: 24% built upon area
- EMC Rules: 12% built upon area
  - More protective of shellfishing use.

Differences – MSI vs. County Coverage

- S/w permit required for new development.
- S.L.: Requires permits only in MSIs.
- EMC Rule: Requires s/w permits in all of 33 Counties.

Municipal NPDES Stormwater Program in Wayne County



Munic. Pop. < 10,000 — **1 Mile**
10,001 < Munic. Pop. < 25,000 — **2 Miles**
25,001 < Munic. Pop. — **3 Miles**

Differences – Designation Process

- Under EMC Rules State designation based on permanent and seasonal population.
  - EMC Rules would designate both municipalities and counties.
  - S.L. only designates municipalities.

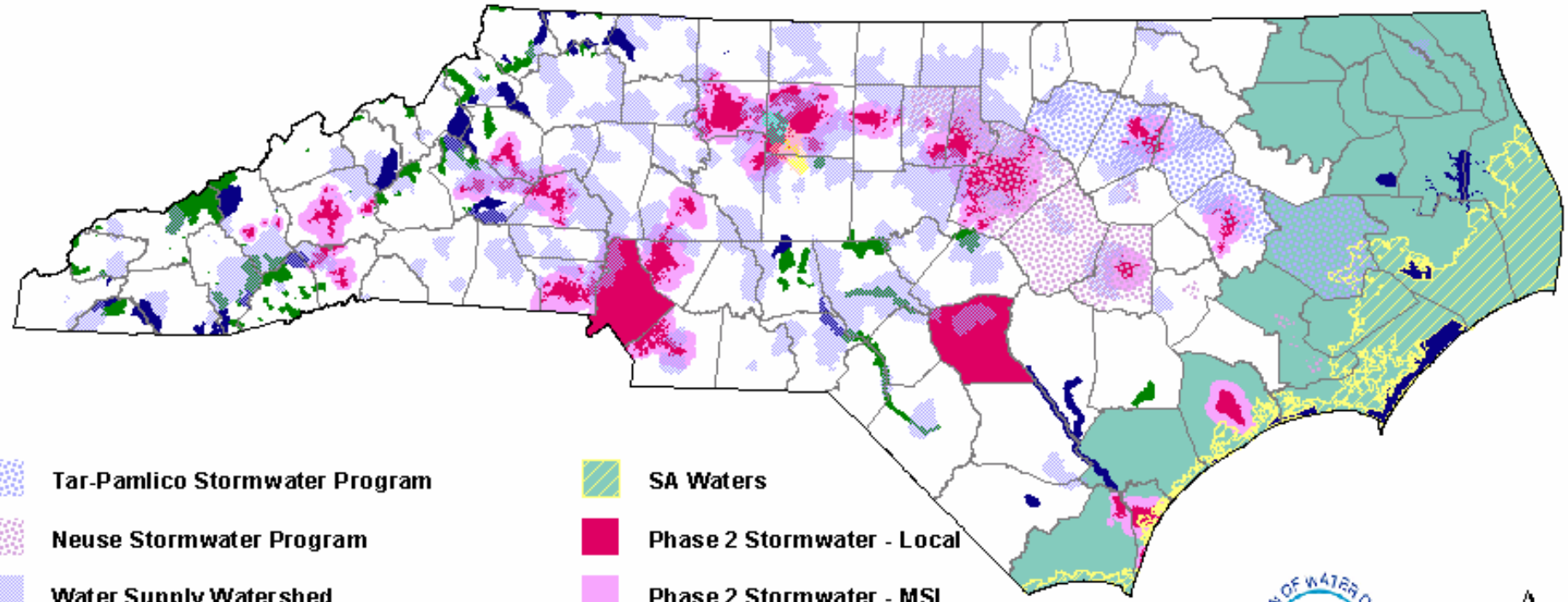
Confused about all the different stormwater programs and requirements throughout the State?

Universal Stormwater Management Program (USMP)

- Proactive measure by EMC/DWQ
- Optional program for local governments
- Does not create new controls where none currently exist.
- Replaces requirements for 14 s/w programs
- Simpler to administer, understand, & implement–more protective of environment.

NC Water Quality Protection Strategies - Stormwater

3/1/05



- Tar-Pamlico Stormwater Program
- Neuse Stormwater Program
- Water Supply Watershed
- Randleman Upper Watershed
- Randleman Lower Watershed Critical Area
- Randleman Lower Watershed Protected Area
- SA Waters
- Phase 2 Stormwater - Local
- Phase 2 Stormwater - MSI
- High Quality Waters
- Outstanding Resource Waters
- Coastal Counties

DIVISION OF WATER QUALITY DWQ

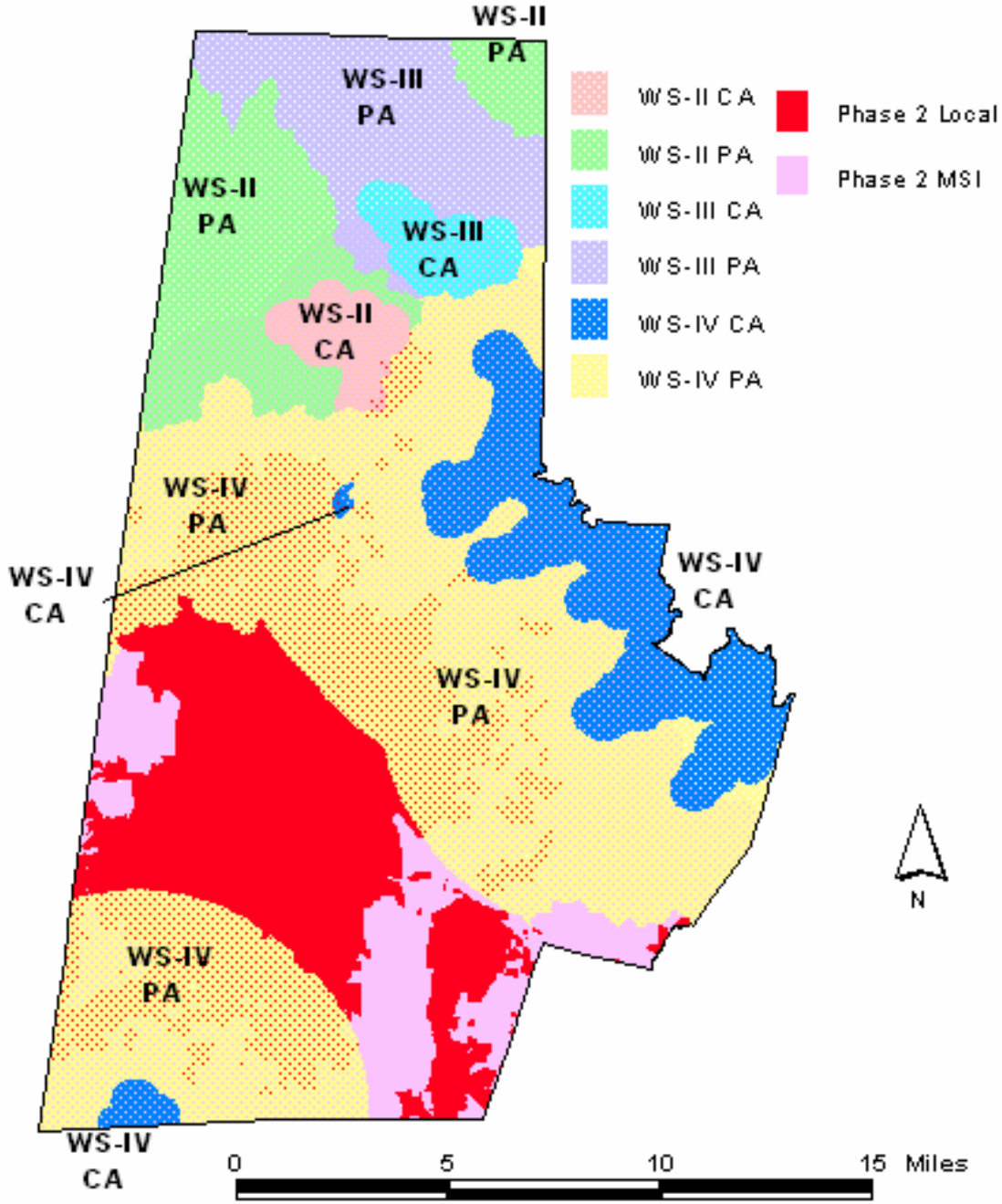
N

0 100 200 Miles

Table of Existing Stormwater Requirements for Freshwaters

Requirement - Based on Classification	**WS-1**	**WS-2 CA**	**WS-2 BW**	**WS-3 CA**	**WS-3 BW**	**WS-4 CA**	**WS-4 PA**	**HQW**	**ORW**	**Neuse NSW**	**Tar-Pam NSW**	**Randle Upper Portion**	**Randle Lower CA**	**Randle Lower PA**	**Phase 2**
Low Density Max. Built Upon Area (BUA) **(1)**	0	6%	12%	12%	24%	24%	24%	12%	12%	N/A	N/A	24%	6%	12%	24%
High Density Max BUA **(2)**	0	24%	30%	30%	50%	50%	70%	None	None	N/A	N/A	70%	30%	50%	None
Low Density Setback **(3)**	N/A	30'	30'	30'	30'	30'	30'	30'	30'	50' RB	50' RB	50' RB	50' RB	50' RB	30'
High Density Setback **(4)**	N/A	100'	100'	100'	100'	100'	100'	None	None	50' RB	50' RB	50' RB	100'	100'	30'
S/W Control Req. for High Dens **(5)**	N/A	1" R/O	1" R/O	1" R/O	1" R/O	1" R/O	1" R/O	1" R/O	1" R/O	N Limit	N&P Limits	1" R/O	1" R/O	1" R/O	Note 5
TSS Removal Requirement **(6)**	N/A	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
Stormwater Drawdown **(7)**	N/A	None	None	None	None	None	None	None	None	None	None	None	None	None	Note 7
Vegetated Conv, for Low Dens **(8)**	N/A	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A	N/A	Yes	Yes	Yes	Yes
Deed Restrictions Required **(9)**	N/A	?	?	?	?	?	?	?	?	?	?	?	?	?	Yes
Cluster Dev. Allowed **(10)**	N/A	No	Yes	No	Yes	No	Yes	N/A	N/A	N/A	N/A	Yes	Yes	Yes	Yes
10/70 Provision Allowed **(11)**	N/A	No	Yes	No	Yes	No	Yes	N/A	N/A	N/A	N/A	Yes	No	Yes	No
36% BUA w/no Curb & Gutt **(12)**	N/A	No	No	No	No	No	Yes	N/A	N/A	N/A	N/A	Yes	No	No	No
NSW Load Limits **(13) (14)**										Yes	Yes				
Additional Requirements															

Durham Stormwater Programs



How will the USMP help?

- The USMP will satisfy all the post construction s/w requirements within a local govt's jurisdiction with a single program.
- Reduce local govt. confusion.
- Improve water quality.
  - Decreasing effectiveness of older s/w programs.
- Simpler to administer, understand, and implement – but more protective.

Key Points

- Decentralized approach.
- User friendly / minimal requirements.
- Framework for continued growth in an environmentally sensitive manner.
- No high/low density.
- **Focus is on the control of stormwater, not the control of impervious surfaces.**

USMP Requirements

- Threshold for Coverage
  - Coastal Counties: 5000 square feet
  - Non-Coastal: Res: 1 acre / Comm: ½ acre
- Design Standard
  - Coastal Counties: Runoff from 1.5” of rain.
  - Non-Coastal: Runoff from 1” of rain.
- Setback Requirement
  - Coastal Counties: 30 ft vegetated setback.
  - Non-Coastal: 100 year floodplain

Why Use 100 Yr Floodplain?

- Protect water quality.
- Help to address statewide flooding issues.
- Many restrictions already exist due to NFIP.
  - 98 counties / 367 municipalities
- Safety / Insurance / Economic issues.
- Large support mechanism within DEM.

Advantages of the USMP

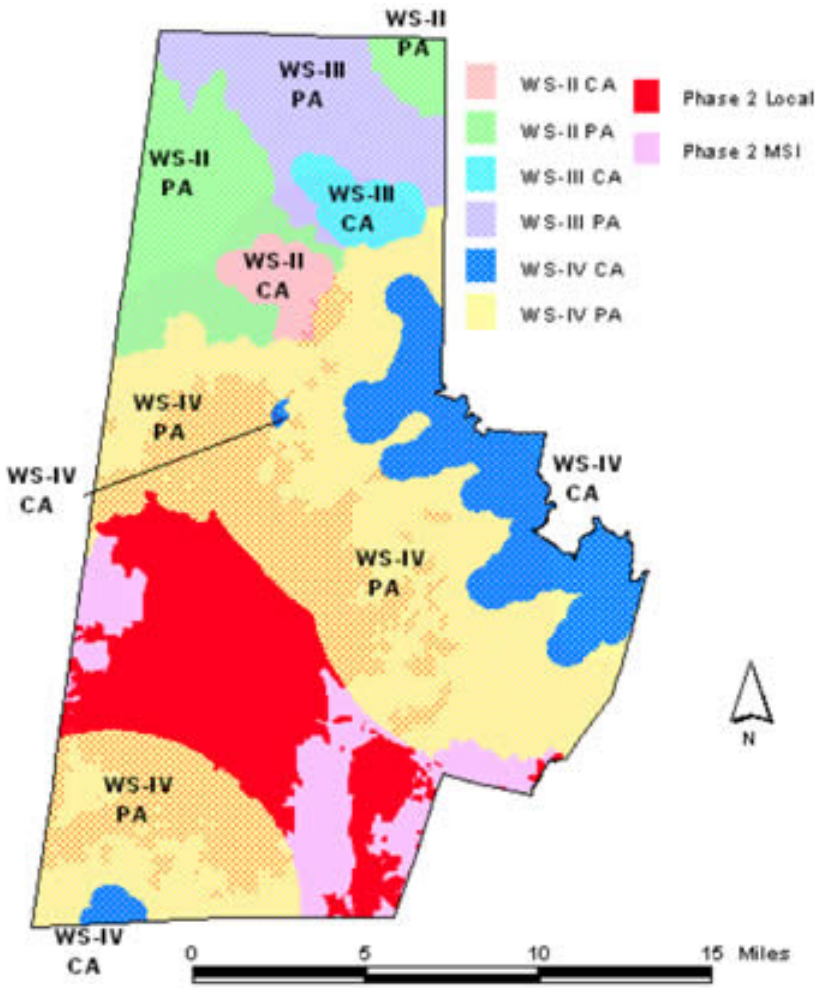
- To the Environment:
  - More protective / addresses SA issues / listed species.
  - No low density / less untreated run-off.
- To Local Governments:
  - Easier to administer and implement.
  - Empowers local governments.
  - Facilitates Low Impact Development (LID) approach.
- To the Regulated Community:
  - Easier to understand.
  - No high density limits / no “de-facto” zoning.

Potential Incentives for Adoption

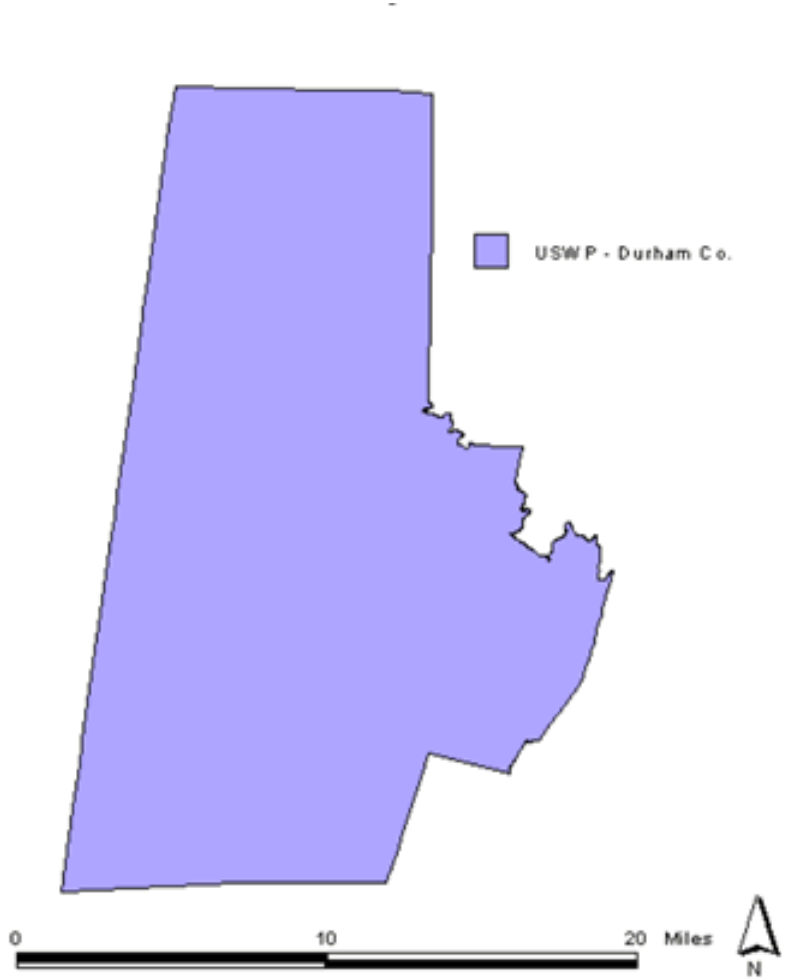
- Discount on National Flood Insurance Premiums.
- Priority Points for CWMTF Grants.
- Priority Points for DWQ CG&L Programs.
- Priority Points for PWS Loans and Grants.
- Nutrient Credits for Diffuse Flow into Floodplain.
- Seek USFWS Recognition that USMP may meet Section 7 Requirements for Non-Point Sources.
- Possible CRC Exception from CAMA Buffer

Durham County – Before and After USMP Implementation

Before



After



Feedback To Date

- USMP Website available since June.
  - Widespread notification of site.
- Discussions w/approx 70+ Local Govts.
  - Feedback generally favorable.
- Endorsed by PENC/ACEC

Timeline for Universal Program

- Approved by WQC/EMC for Hearings.
- Public hearings in January 2006.
- Adopted by EMC in May 2006.
- RRC Approval.
- Review in 2007 Legislative Session.

Why didn’t DWQ issue Phase 2 Permits for the affected Coastal Communities?

Review of Effectiveness of Coastal Stormwater Programs

- Coastal stormwater programs in place for 15+ yrs
- Phase 2 Permit developed for coast.
- Response: coastal s/w programs are ineffective.
- DWQ Director /EMC requested review.
- Review appropriate under CHPP.

Stormwater Programs Summary

	State	Shellfishing	Outstanding Res. Waters
Low Density* (BUA)	30%	25%	25%
High Density	No limit.	No limit.	Not allowed
Control Req.- High Density	Runoff from 1” of rain.	Runoff from 1.5” of rain.	Low density only.
Setbacks	LD: 30’ HD: None	LD: 30’ HD: 50’	LD: 30’

*Engineered s/w controls not required for low density development.
-lack of s/w management contributes to water quality probs.

Scientific Consensus

- Uncontrolled stormwater from areas with more than 10 - 15% impervious surface result in degradation to surface waters.

- Note: 72% of new impervious surfaces on coast are permitted under low density.

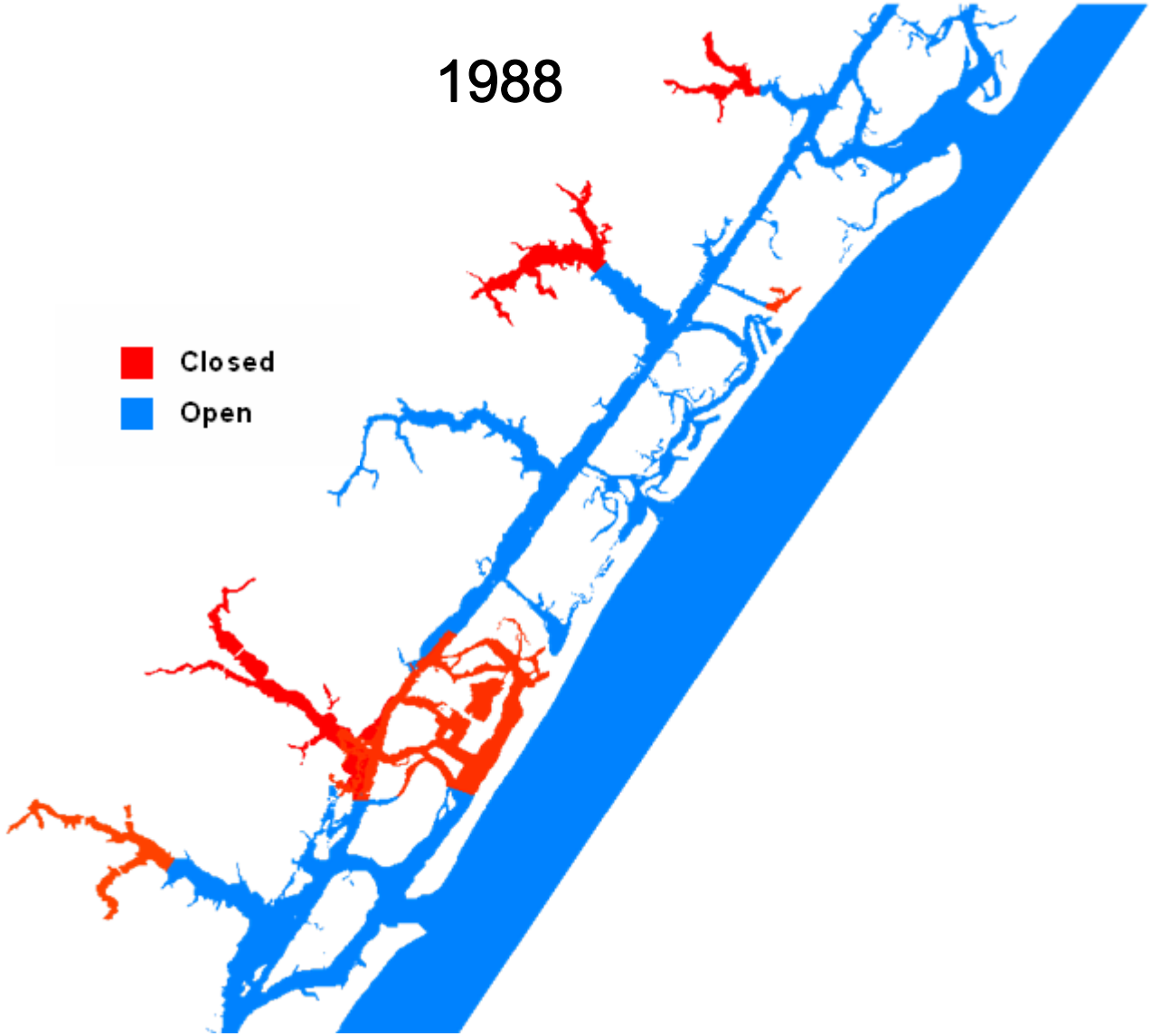
Shellfishing Waters Trends in NC

- 56,446 acres of shellfishing suitable waters closed.
- Up from approx. 52,000 acres in 1988.
- 1,157 acres of ORW waters closed since 1990.
- 12,502 ac of shell bottom mapped by DMF.
  - Approx. 40% closed part of the year.
  - 2,010 acres prohibited / conditionally closed
  - 2,823 acres conditionally open

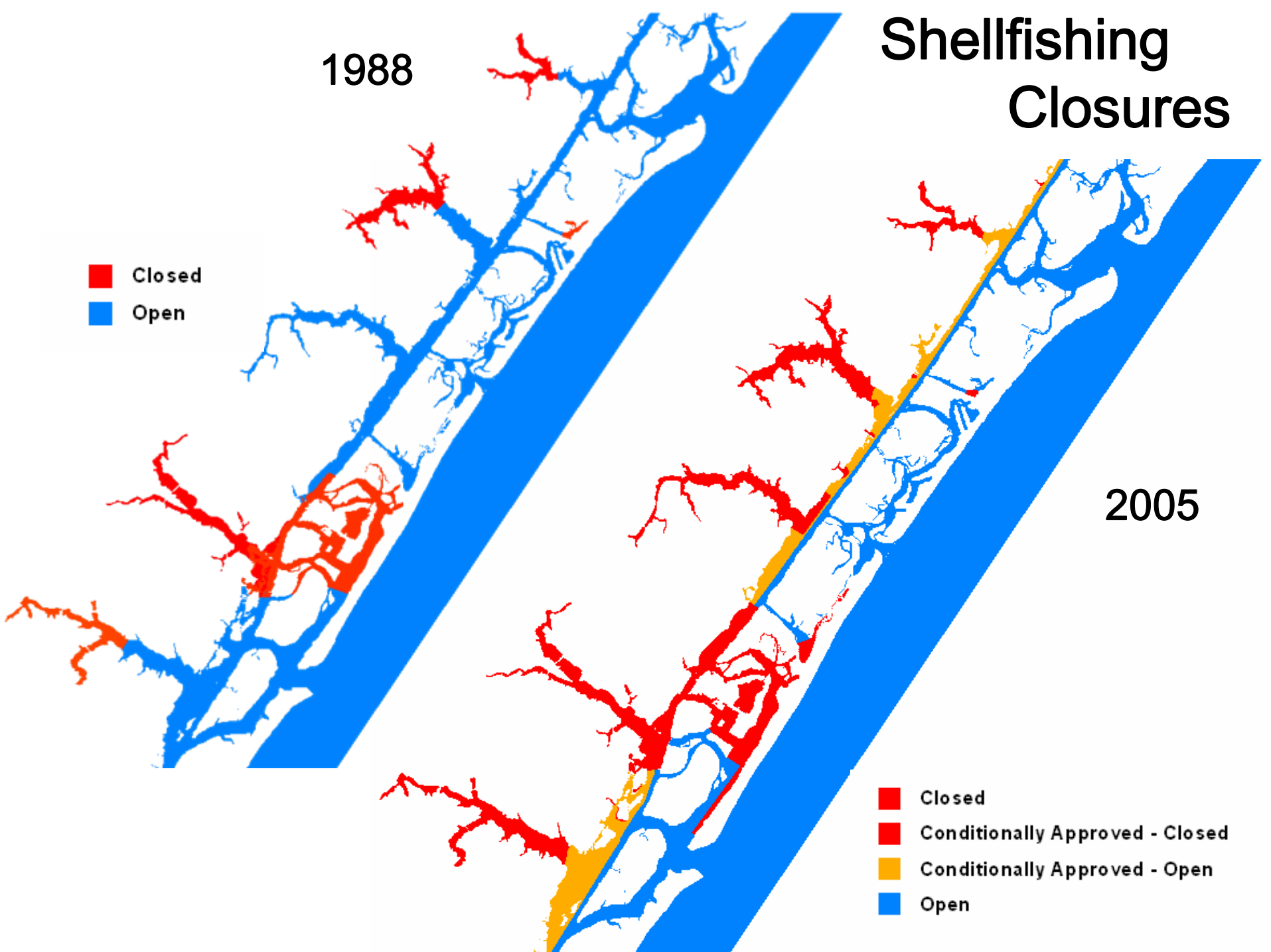
DWQ Program Review

- Examined program effectiveness in protecting shellfishing use in tidal creeks.
- Why Tidal Creeks?
  - Watersheds entirely within coastal area.
  - Increased development after program adoption.
  - Development primary environmental stressor.
  - No individual/general point source discharges.

Shellfishing Closures



Shellfishing Closures



Coastal Review – Conclusions / Recommendations

- Concurrence from WQC that programs need to be updated.
- Identifiable problem: 25-30% low density.
- Adopt approach similar to USMP.
- Key element of CHPP.

Summary of Key Points

- DWQ Implementing S.L. Phase 2 Program
  - S/w permit for dev. in MSIs July 2006
- EMC Rules Approved by RRC
- Differences Between S.L. – EMC Rule
  - Design Standard
  - MSI vs. County Coverage
  - Low Density in Coastal Area
  - State Designation Process

Summary of Key Points

- Universal Stormwater Program
  - Optional / replaces existing programs.
  - Simpler to understand & administer.
  - More protective.
- Effectiveness of Coastal S/W Programs
  - New approach may be necessary for coast.

For further information contact:

Tom Reeder

tom.reeder@ncmail.net

919-733-5083 ext. 528