

# Implementing Mixed PS / NPS Nutrient TMDLs

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North Carolina

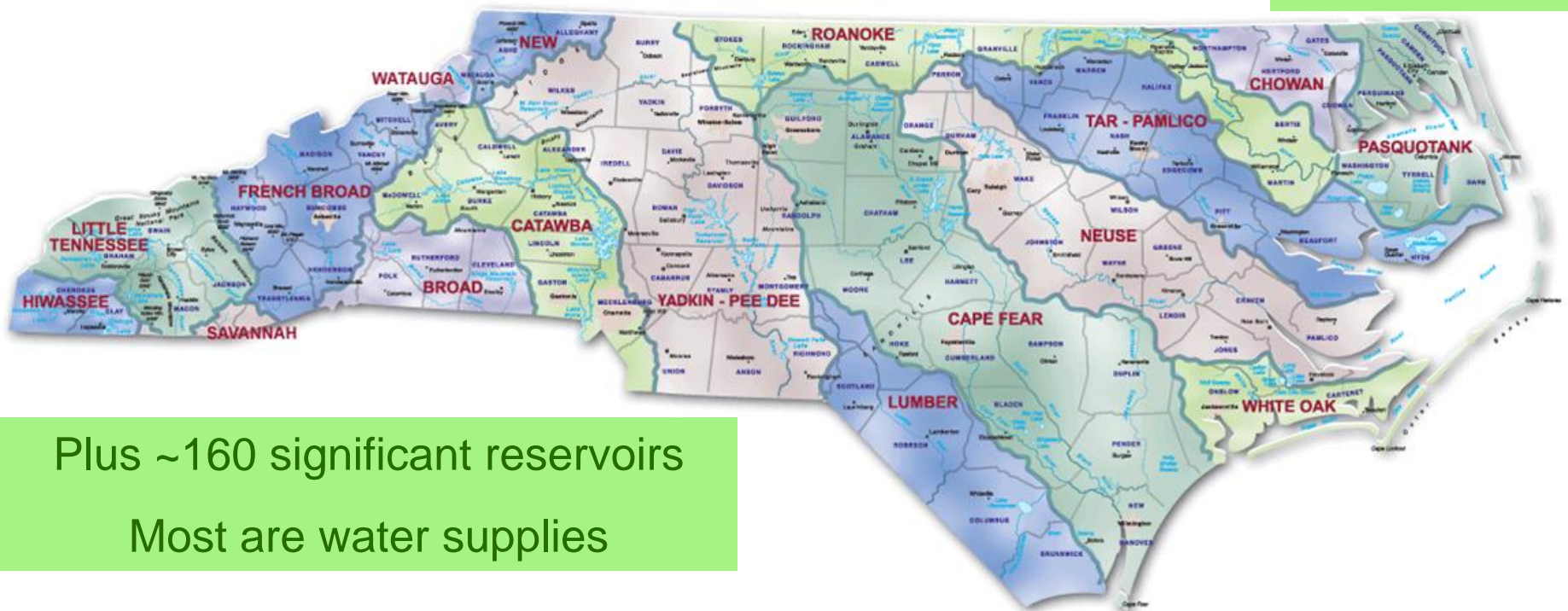
Division of Water Quality



# North Carolina

- History of estuaries and reservoirs impaired by nutrients

Large river basins empty into estuaries behind barrier islands



Plus ~160 significant reservoirs  
Most are water supplies



# North Carolina

- ✓ Urban areas on rivers (where else?!)
- ✓ Reservoirs built near urban areas





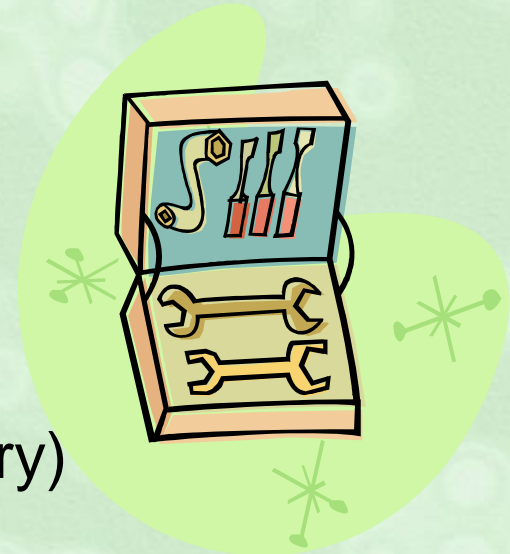
# Nutrient Reductions in NC

- Both P & N reductions needed
  - N for all downstream estuaries
  - Some reservoirs also N-limited
- WWTPs don't want to have to achieve whole TMDL reduction
  - Want NPSs to do their “fair share”
  - At first, one particular NPS category targeted...



# To Make Nutrient TMDLs “Fair”\*

- The right tools for NC
  - Create state regulations
    - Each watershed different
    - Address PS & NPS
    - Require reductions (not voluntary)
  - Long stakeholder process
    - NPDES permit holders
    - Environmental groups
    - Industries
    - Agriculture



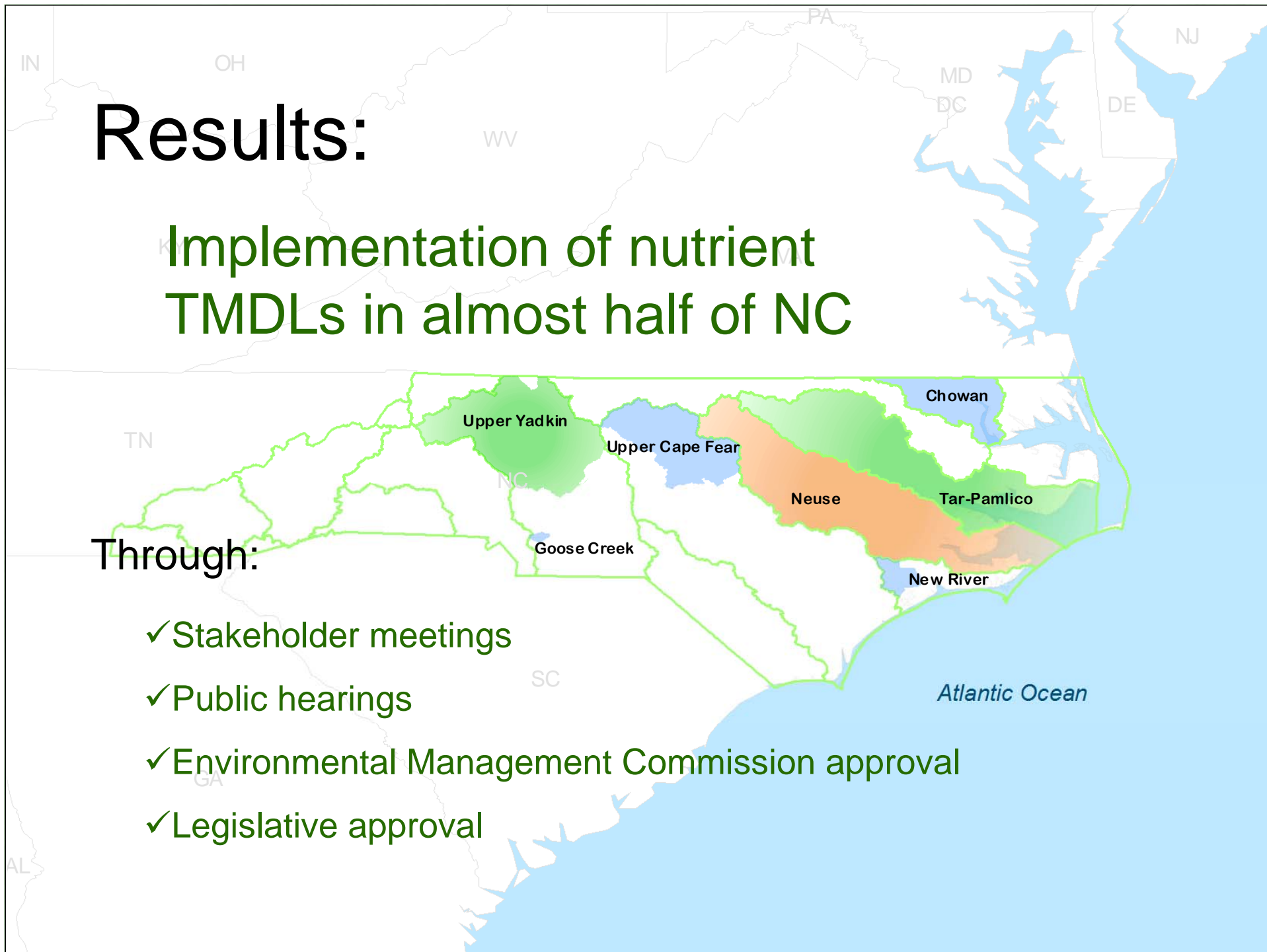
*\*(and to make sure they're implemented!)*

# Results:

Implementation of nutrient TMDLs in almost half of NC

## Through:

- ✓ Stakeholder meetings
- ✓ Public hearings
- ✓ Environmental Management Commission approval
- ✓ Legislative approval



# Rules Include Requirements for

- ✓ *P & N limits for NPDES wastewater*
- ✓ *Agriculture loading reductions*
- ✓ *Stormwater (existing & new)*
- ✓ *Nutrient applicators (golf courses, e.g.)*
- ✓ *Protection & maintenance of buffers*

# Some Observations

- “Stick” works better than carrot for nutrient TMDLs in NC
- Regulations help with TMDL maintenance
- Helps to have some existing authority
  - Nutrient Sensitive Waters designation
  - Water Supply Watershed classification
  - Drinking Water Reservoir Protection Act
- Helps to have right political climate



# A Few More...

- Nutrient TMDL implementation through rule-making is difficult, controversial, visible
- Unanticipated benefit:  
Everyone is afraid of all TMDLs
  - More willing to take direct action without TMDL
- Challenges (in retrospect)
  - Gaps – what did we miss?
  - Accounting – making sure reductions are real
  - Compliance – we can't be everywhere