Existing Water Withdrawal Regulations & Water Withdrawal Recommendations from DENR's Oil and Gas Study April 2012

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Goal / Limitations

- Withdrawal of water from waters of the State
- Underlying framework
- General description of current regulations that impact water withdrawal decision
- Each specific regulation has requirements that come into play based on the details of a proposed withdrawal
- Questions on details should be addressed to the parties that implement the regulation in question
- Interactions with other requirements may impact the ability to withdraw
- Withdrawals may be impacted by other specific regulations or policies not covered

Basis of NC Water Policy

- Colonial legacy -- Riparian rights
  - Right to <u>use</u> water that is on or adjacent to property
  - Originally "natural flow" presumption
  - Now guided by the principal of "reasonable use"
  - Use that does not excessively limit use by other riparians
  - Allows some reduction in flow
  - Supports growth and economic development
  - Defined by challenges

Reasonable Use

- **Depends on the source**
  - **Surface water – reasonable use of the water**
  - **Groundwater – reasonable use of the land above**

Riparian Rights Limited by Regulations Established to Address Potential problems:

- How to guarantee folks that invest in a water storage project receive the benefits?
- What happens when cumulative individual reasonable uses result in an impairment of the resource?
- How to identify potential environmental impacts of proposed withdrawals and uses?
- How to know where and how much water is being used?

Right of Withdrawal of Impounded Water

- **Scope**
  - **"A person who lawfully impounds water for the purpose of withdrawal shall have a right of withdrawal of excess volume of water attributable to the impoundment."**
- **Vested parties get:**
  - **"an interest which establishes a right to withdraw an excess volume of water superior to other interests in the water" (transferable)**
- **Limitation**
  - **"volume which may be withdrawn…. without foreseeably reducing the rate of flow of a watercourse below that which would obtain in that watercourse if the impoundment did not exist"**
- **NCGS § 143-215.44 et seq.**

Federal Regulation of Withdrawals

- **Federal Energy Regulatory Commission**
  - Federally licensed hydropower projects
  - Non-project uses of project waters

- **US Army Corps of Engineers**
  - Federally constructed reservoirs
  - Limitations in authorizing legislation

- **Tennessee Valley Authority**
  - Section 26 approval of withdrawals from the watersheds of TVA reservoirs

Water Use Act of 1967

- **Policy**
  - **"It is hereby declared that the general welfare and public interest require that the water resources of the State be put to beneficial use to the fullest extent to which they are capable, subject to reasonable regulation in order to conserve these resources and to provide and maintain conditions which are conducive to the development and use of water resources."**
- **<u>EMC</u> may designate a Capacity Use Area where:**
  - **"the use of groundwater or surface water or both require coordination and limited regulation for protection of the interests and rights of residents or property owners of such areas or of the public interest"**
- **NCGS § 143-215.11 et seq.**

Water Use Act of 1967

- **Investigation and rulemaking targeting specific issue**
  - **"….where it finds that the use of groundwater or surface water or both require coordination and limited regulation for protection of the interests and rights of residents or property owners of such areas or of the public interest."**
  - **"a capacity use area" is one where….the aggregate uses of groundwater or surface water, or both, in or affecting said area have developed or threatened to develop to a degree which requires coordination and regulation, or exceed or threaten to exceed.. the renewal or replenishment of such waters or any part of them.**

Water Use Act 1967

- Investigative study
- Documented issue
- Define geographic extent
- Establish permitting criteria
- Permit threshold 100,000 gpd
- Currently only one
  - CCPCUA
  - 15 counties
  - Groundwater focus

Central Coastal Plain Capacity Use Area

North Carolina Environmental Policy Act

- SEPA
- Environmental Review of Projects:
  - Using public funds
  - Using public lands
  - Involving a state action (eg. State issued permit)
- Public review, comment, and potential challenge

Surface Water Transfers

- "withdrawal, diversion, or pumping of surface water from one river basin and discharge of all or any part of the water in a river basin different from the origin"

  NCGS § 143-215.22G(2)

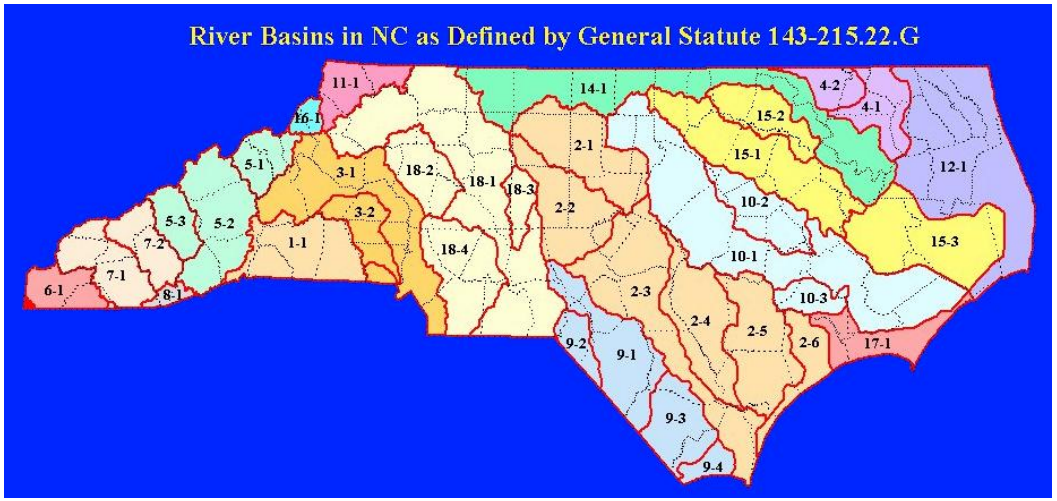
- the amount of a transfer shall be determined by the amount of water moved from the source basin to the receiving basin, less the amount of the water returned to the source basin

  15A NCAC 02E .0401

- Regulated between legislatively defined basins
- New – 2 mgd or more
- Existing in 1993 – increase in transfer leading to a total of 2 mgd or more

Inter-basin Transfer Certification

- Is the use "Reasonable"?
- Does NOT permit a withdrawal
- Grants permission to move surface water between designated basins
- Detailed public notice and review
- Extensive environmental review
- Multi-year process
- Expensive



Water Use Monitoring

- **Water Withdrawal Registration NCGS § 143-215.22H**
- **Groundwater and surface water**
  - **Agricultural withdrawals 1,000,000 gpd or more**
  - **Non-Agricultural withdrawals 100,000 gpd or more**
  - **Source, location, volume, capacity and use pattern**
  - **Within 2 months after initiation of withdrawal**
  - **Annual use reporting**

Water Use Monitoring

- Local Water Supply Plans
- Local government and large community water systems (~550)
- Meets registration requirement
  - No use threshold
  - Source, location, volume, capacity, use pattern, and plans for the future
  - Includes drought response protocols

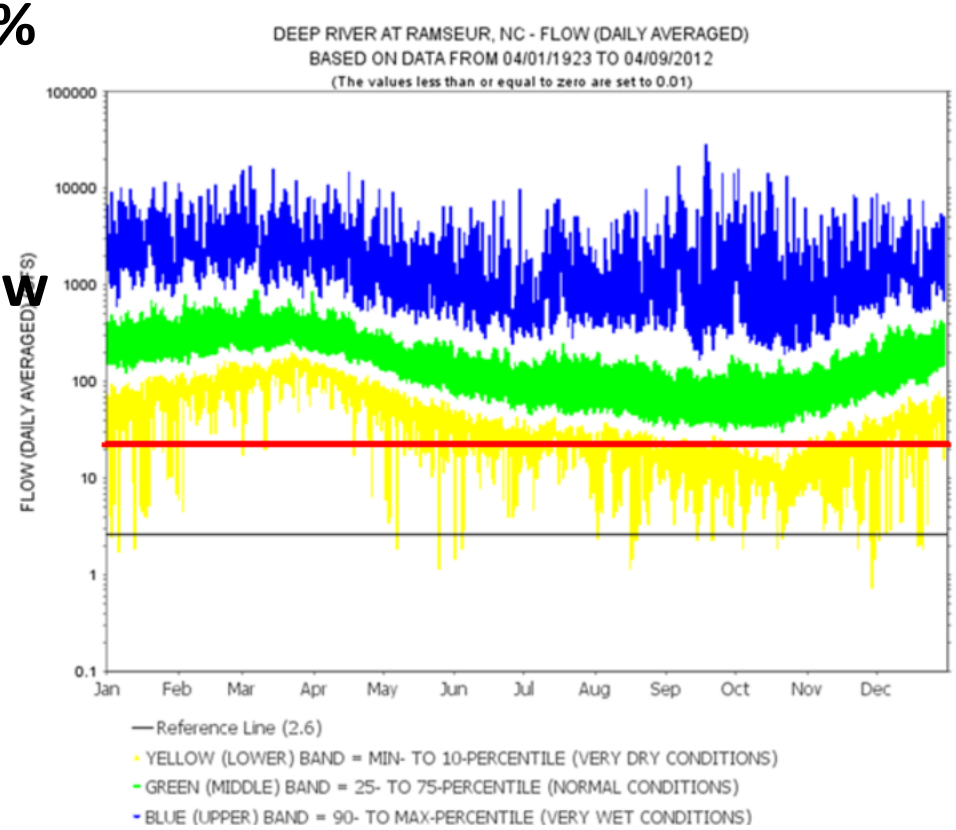
Study Recommendations

- Water and Wastewater Management Plans
- Limit surface water withdrawals to 20% of the 7Q10 flow
- Prohibit surface water withdrawals during times of drought and periods of low flows

Water Management Plan / Sources

- Purpose
- Source
  - Flow statistics or yield
  - Documented available supply
- Withdrawal capacity
- Withdrawal timing
- Expected total volume
- Estimate of flowback water to be reused

- Used water disposal ?

Surface Water Flow Example

- Deep River @ Ramseur (89 years of data)
- Colored bands = range of daily average flows
- Yellow = flows exceeded 90% of the time
- Red line = 7Q10 (12.7 cfs)
- Black line = 20% of 7Q10 flow (2.5 cfs) (recommended withdrawal limit)