

Regional Water Planning in South Carolina

Developing a framework for water planning
on a basinwide scale

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What is the objective of regional water planning?

To develop a water-resources management plan to ensure that an adequate and reliable supply of water will be available to sustain all future uses.

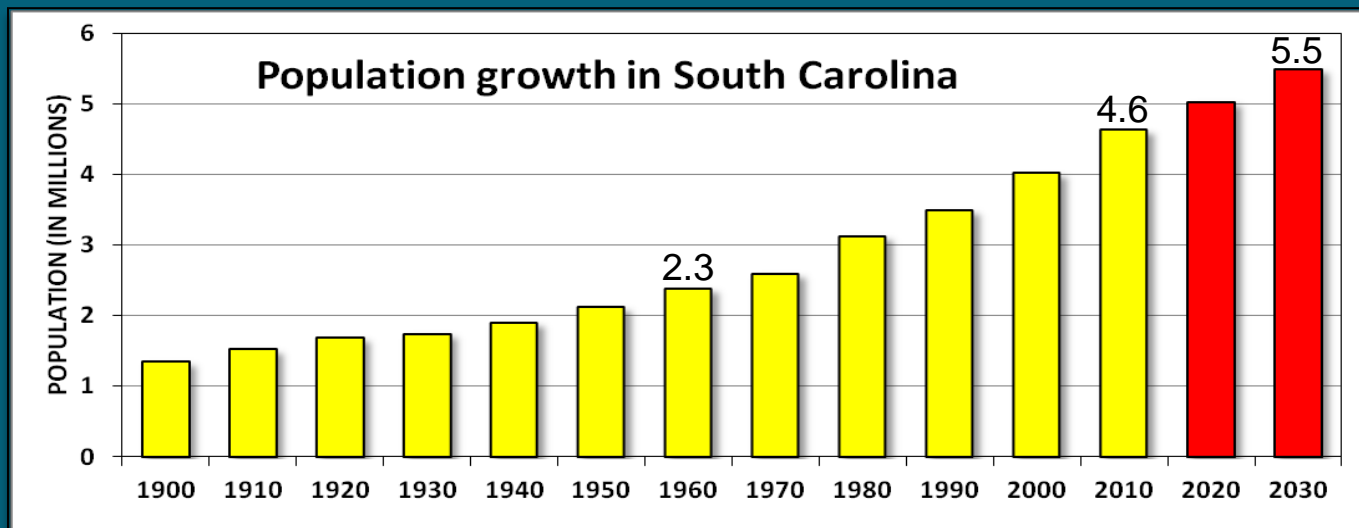


Why is water planning important now?

Demand for water continues to increase

Water use from 1990-2005:

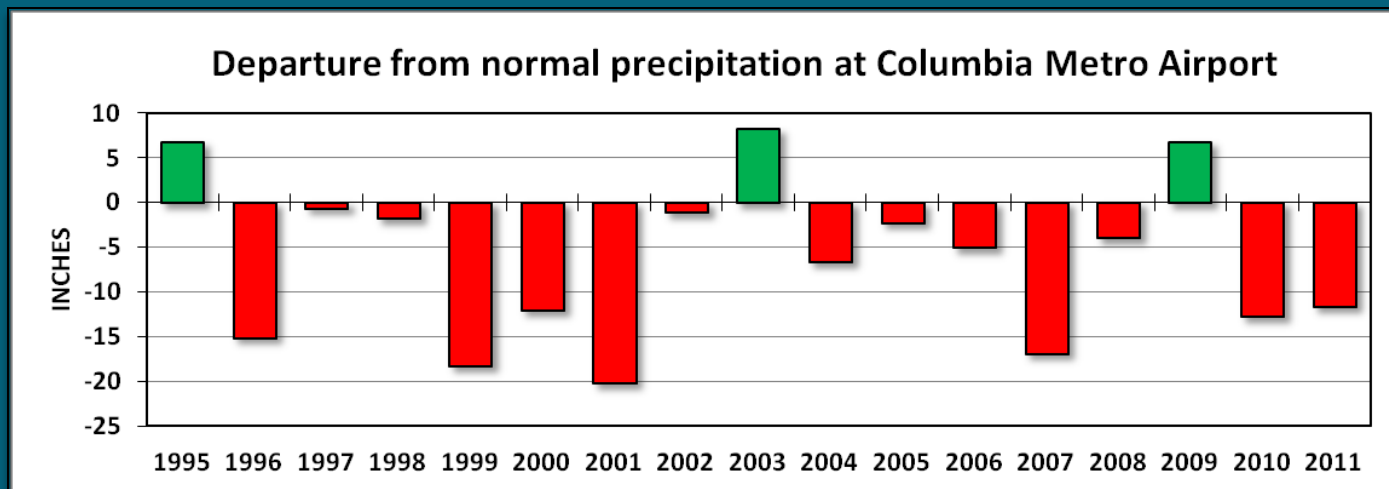
- Municipal use up 46%
- Irrigation use up 40%
- Thermoelectric use up 26%
- Per capita use up 25%



Why is water planning important now?

Continued water availability is uncertain

- Drought of record in South Carolina (1998-2002)
- Drought of record in Savannah River basin (2006-2008)



“Normal” precipitation is 48.27 inches (1971–2000 average).



Water Resources Planning and Coordination Act (1967)

SCDNR “...shall advise and assist the Governor and the General Assembly in formulating and establishing a comprehensive water resources policy for the State...”



South Carolina Water Plan

Second Edition

South Carolina Department
of Natural Resources

Land, Water and Conservation Division

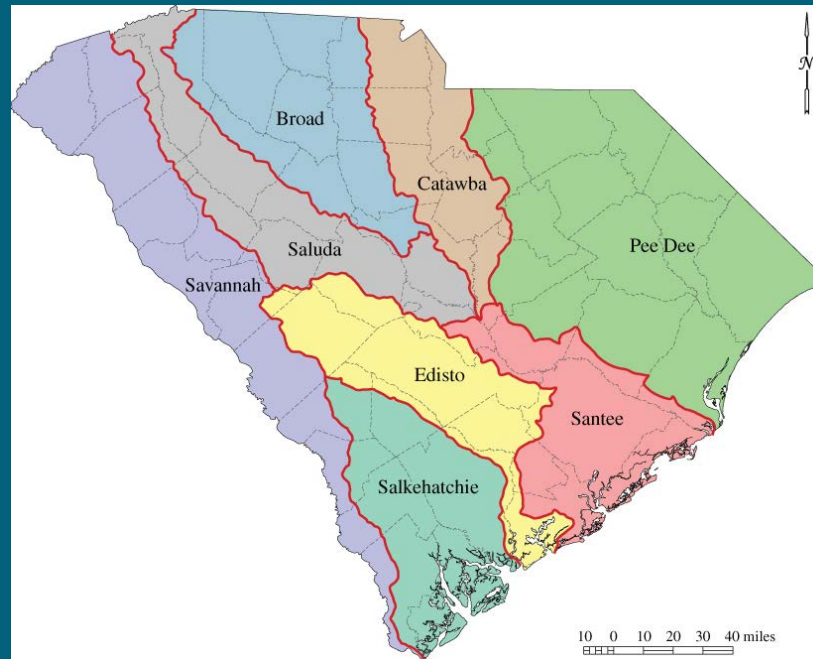


One significant recommendation of the 2004 State Water Plan is for the development of regional water plans for each major river basin in the State.



Why regional water plans?

Because different regions of the State have different sources and uses of water, plans should be developed that are tailored to each region's specific resources and needs.



What kind of work needs to be done?

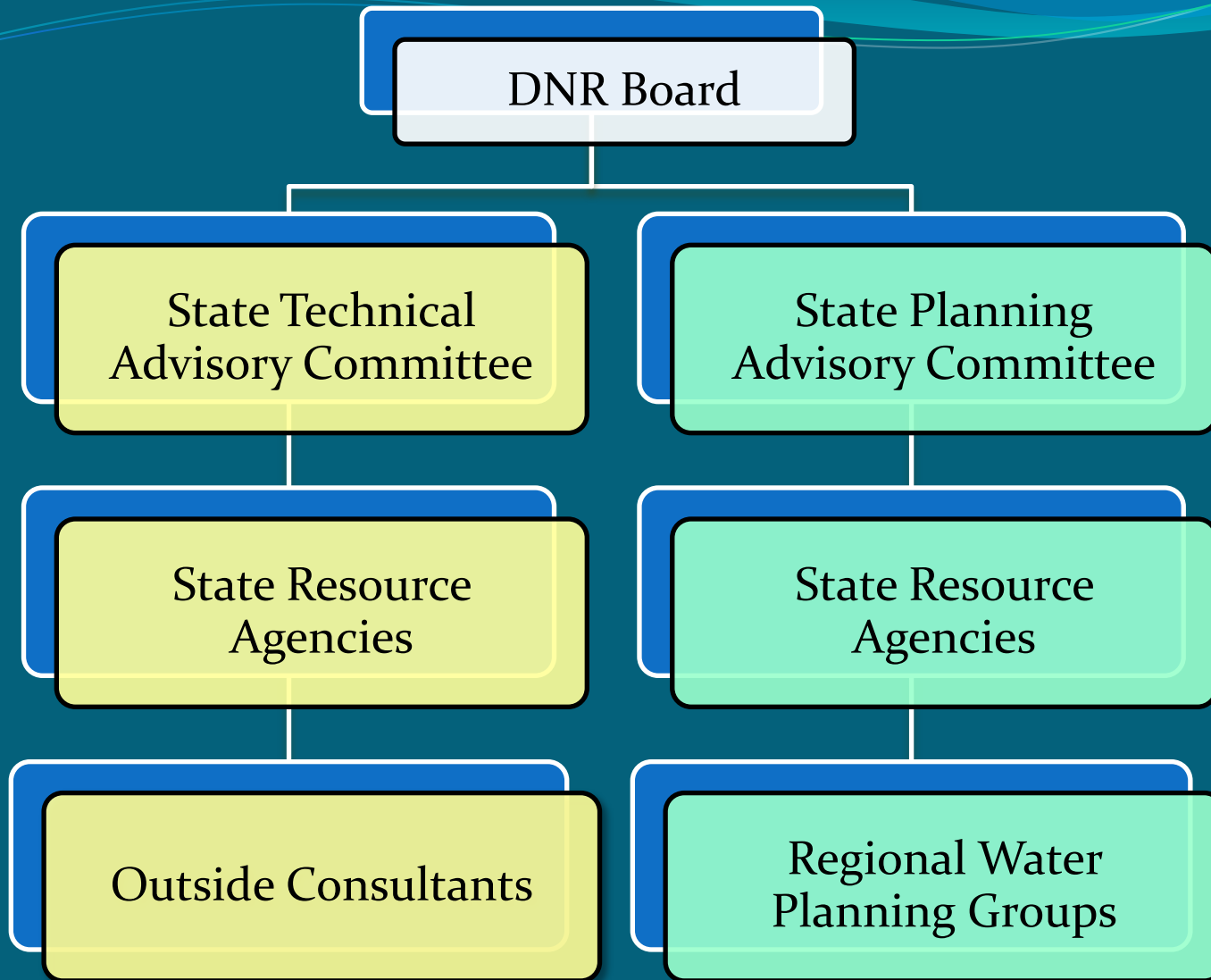
Technical

- Current consumptive water use
- Water availability
- Projections of future water demands
- Hydrologic models

Planning

- Organize stakeholder groups
- Hold public hearings
- Compile and analyze technical data
- Develop water plans for each region





Technical Work

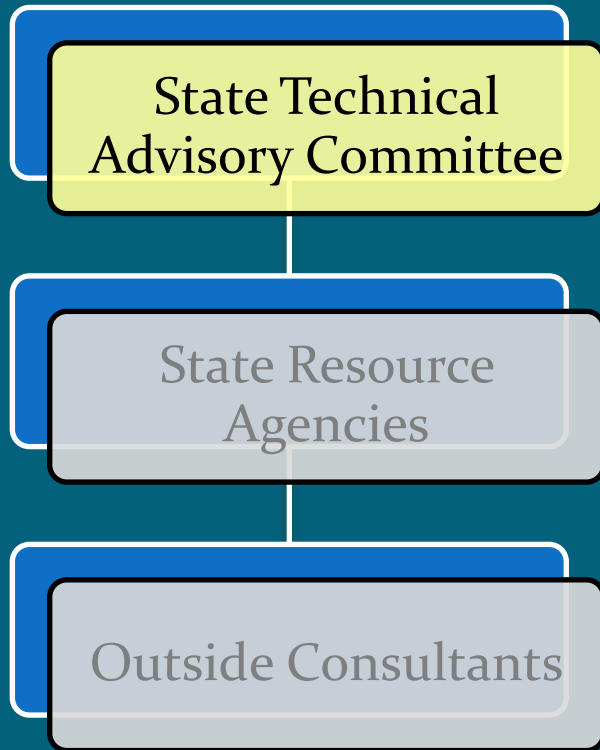
Planning Work



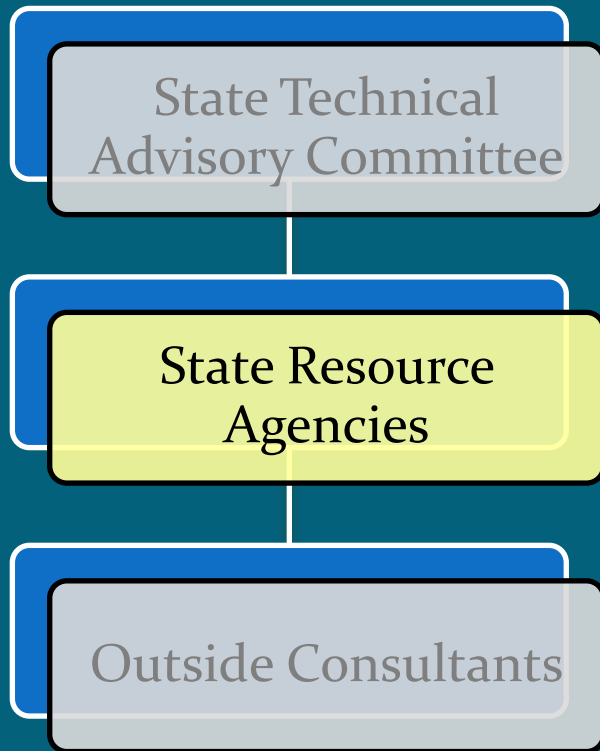
State Technical Advisory Committee

Composed of scientists and technical experts

- Oversee scientific and technical aspects of regional water planning
- Review and approval of water-use projections and hydrologic models



Technical Work

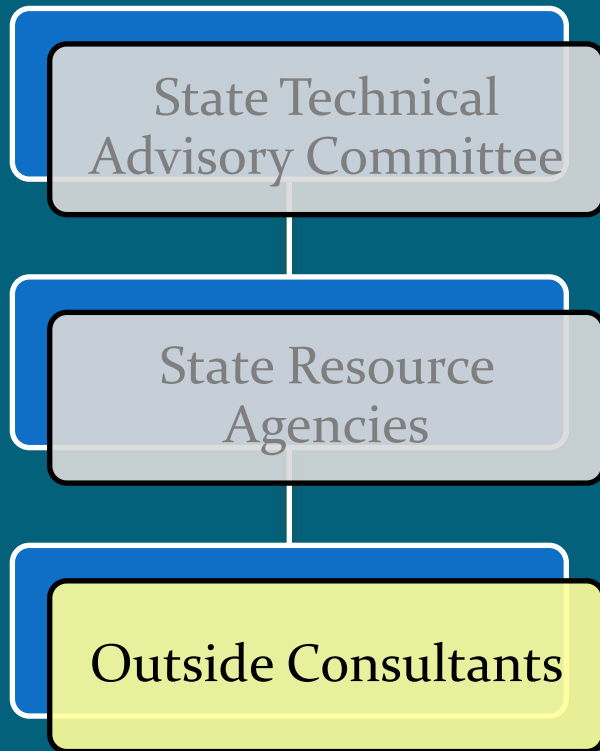


Technical Work

State Resource Agencies

- Assessment of current water use
- Projections of future water demands
- Assessment of water availability
- Development of hydrologic models





Technical Work

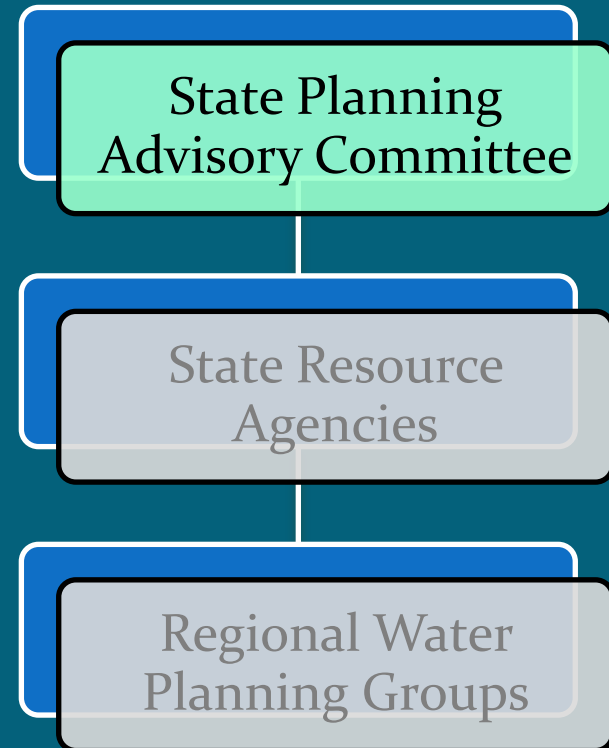
Outside Consultants

- Consultants may be contracted to do some of the technical work associated with planning.
- Work would include, among other things, development of water-use projections and surface and groundwater modeling.

State Planning Advisory Committee

Composed of government, planners, and stakeholders

- Determine planning regions
- Oversee development of a regional water planning guidance document and State Water Plan
- Appoint members to regional water planning groups
- Develop rules for the planning process

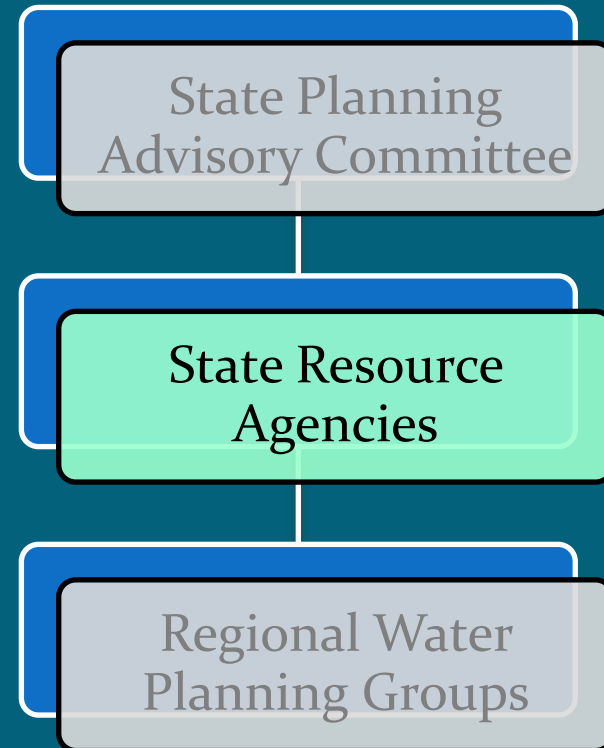


Planning Work



State Resource Agencies

- Develop a regional water planning guidance document
- Assist in the preparation of the regional water plans
- Prepare the State Water Plan



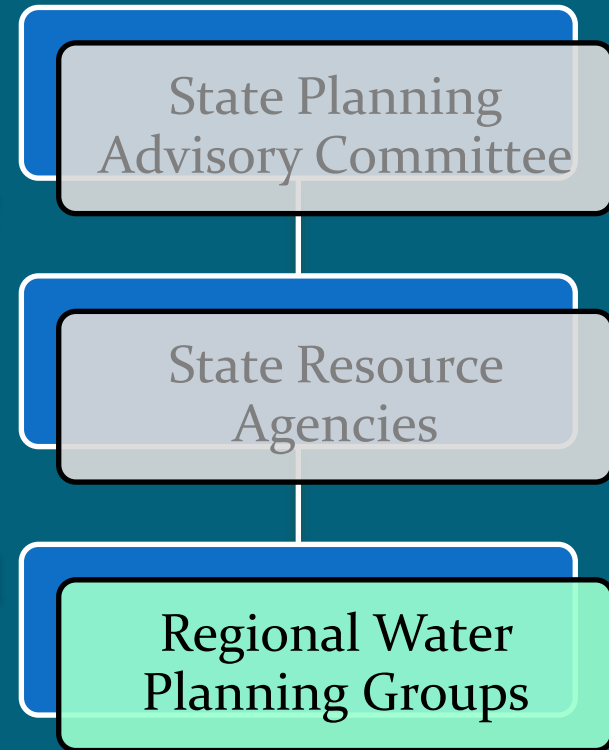
Planning Work



Regional Water Planning Groups (one for each region)

Composed of government, experts, stakeholders, and the general public who live in the region

- Conduct public hearings
- Review water-use projections
- Resolve regional and interregional disputes
- Recommend water management strategies and water projects
- Assist in the preparation of the final regional water plans



Planning Work



What would each regional water plan contain?

1. Current and projected water demands
2. An assessment of existing surface and groundwater supplies
3. An evaluation of water supply and demand to determine if a surplus or deficit will occur over the planning horizon

(Modeled after the Texas Water Plan)



What would each regional water plan contain?

4. Water management strategies to meet the future demands of the region, including:
 - An evaluation of all strategies (e.g. quantity, reliability, and cost of water delivered)
 - Calculation of infrastructure costs
 - Environmental factors

(Modeled after the Texas Water Plan)



What would each regional water plan contain?

5. A chapter detailing water conservation and drought management recommendations
6. A chapter describing how the regional water plan is consistent with long-term protection of the state's water resources
7. A chapter describing the financing needed to implement the water management strategies recommended

(Modeled after the Texas Water Plan)

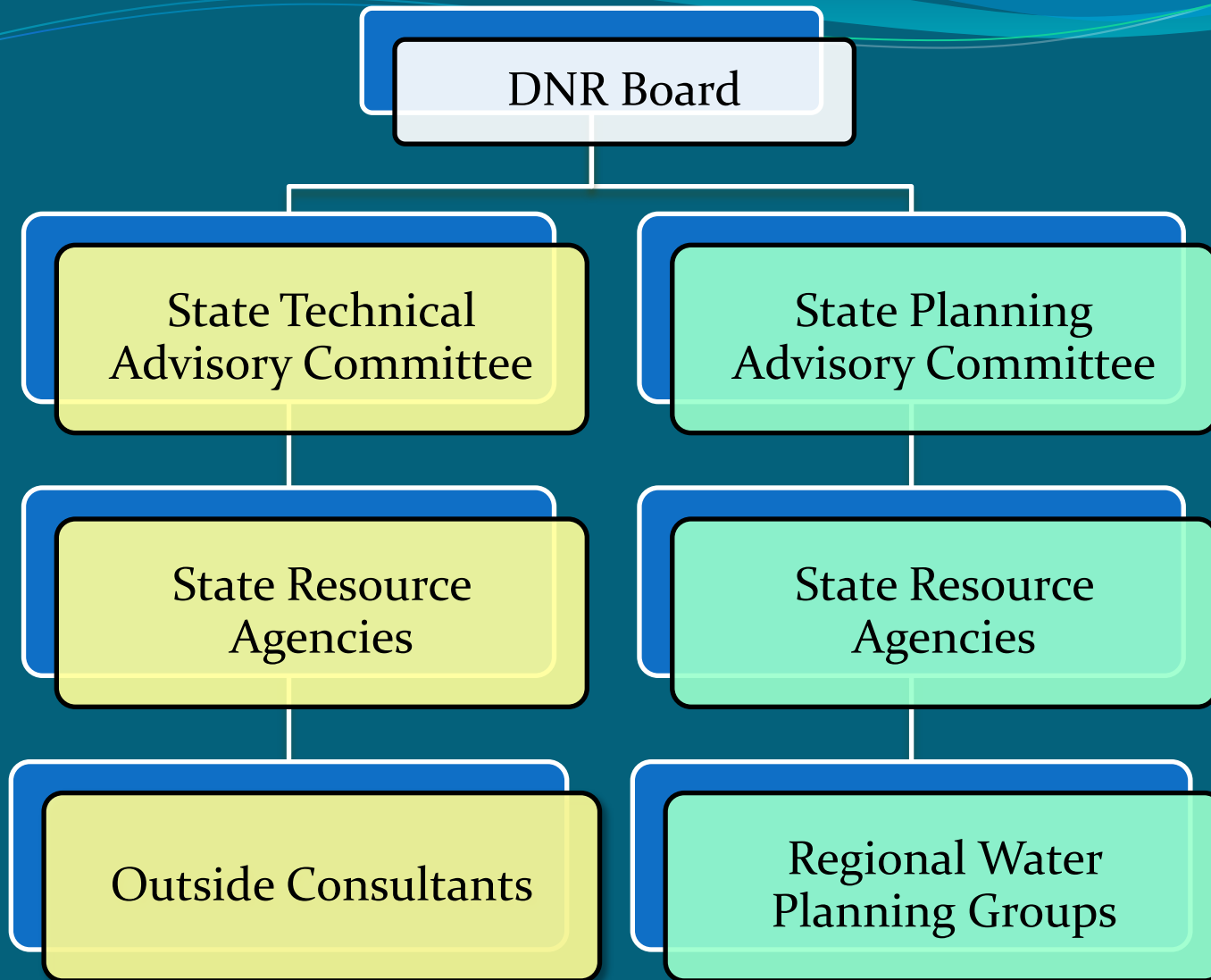


What will water plans be used for?

Regional water plans will be used to guide the development of clean and reliable drinking water supplies and to provide for an adequate supply of water to sustain all future instream and offstream demands in the region.

(Modeled after the Texas Water Plan)





Technical Work

Planning Work





Technical Work

Planning Work



Water Planning Oversight Board

- Appoints members to the State Technical and State Planning Advisory Committees
- Gives final approval to the regional water plans
- Ensures coordination and cooperation among government agencies
- Provides financial and administrative support
- Identifies the need for new legislation



Guidance Document for Regional Water Planning

Document would include:

- Guiding principles of regional plan development
- Rules governing the regional planning process
- Composition of the regional water planning groups
- Roles and responsibilities of the parties involved
- Planning regions



State Water Plan

The State Water Plan would be updated after the completion of the regional plans.

- Assess the overall condition of the water resources of the State
- Summarize and evaluate statewide trends in water use, water demand, and water availability
- Offer water-resource policy and program recommendations
- Prioritize water-resource needs of the State
- Introduce innovative practices
- Integrate water-resource management



Public Involvement

“The effective management of South Carolina’s water resources is beyond the scope of any one agency or organization and will require cooperation and shared responsibility among Federal, State, and local agencies, as well as public and private parties.”

South Carolina Water Plan (2004)



Conservation

“Water conservation must become an integral component of effective water resources management...and should be the first approach for extending or augmenting available supplies.”

South Carolina Water Plan (2004)



Groundwater

- The natural planning unit for groundwater is the aquifer.
- Groundwater availability assessments should be made of each aquifer (sustainable yields).
- Groundwater should be managed cooperatively among the RWPGs whose regions overlie the aquifer.

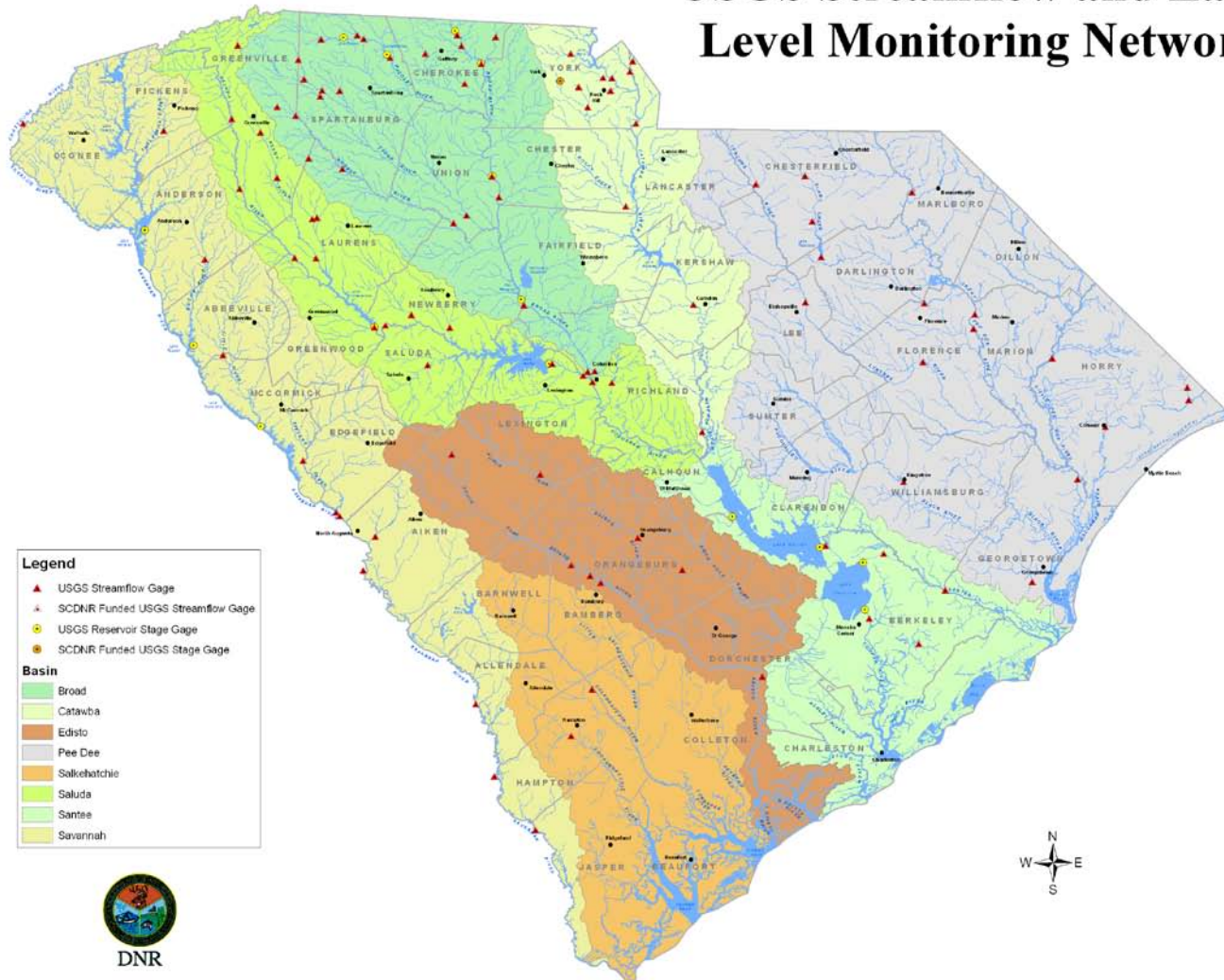


Integrated Water Resource Management

A long-term goal of the State should be to work towards integrating the development, management and planning of water supply, wastewater, and stormwater systems along with related land-use development and conservation measures.



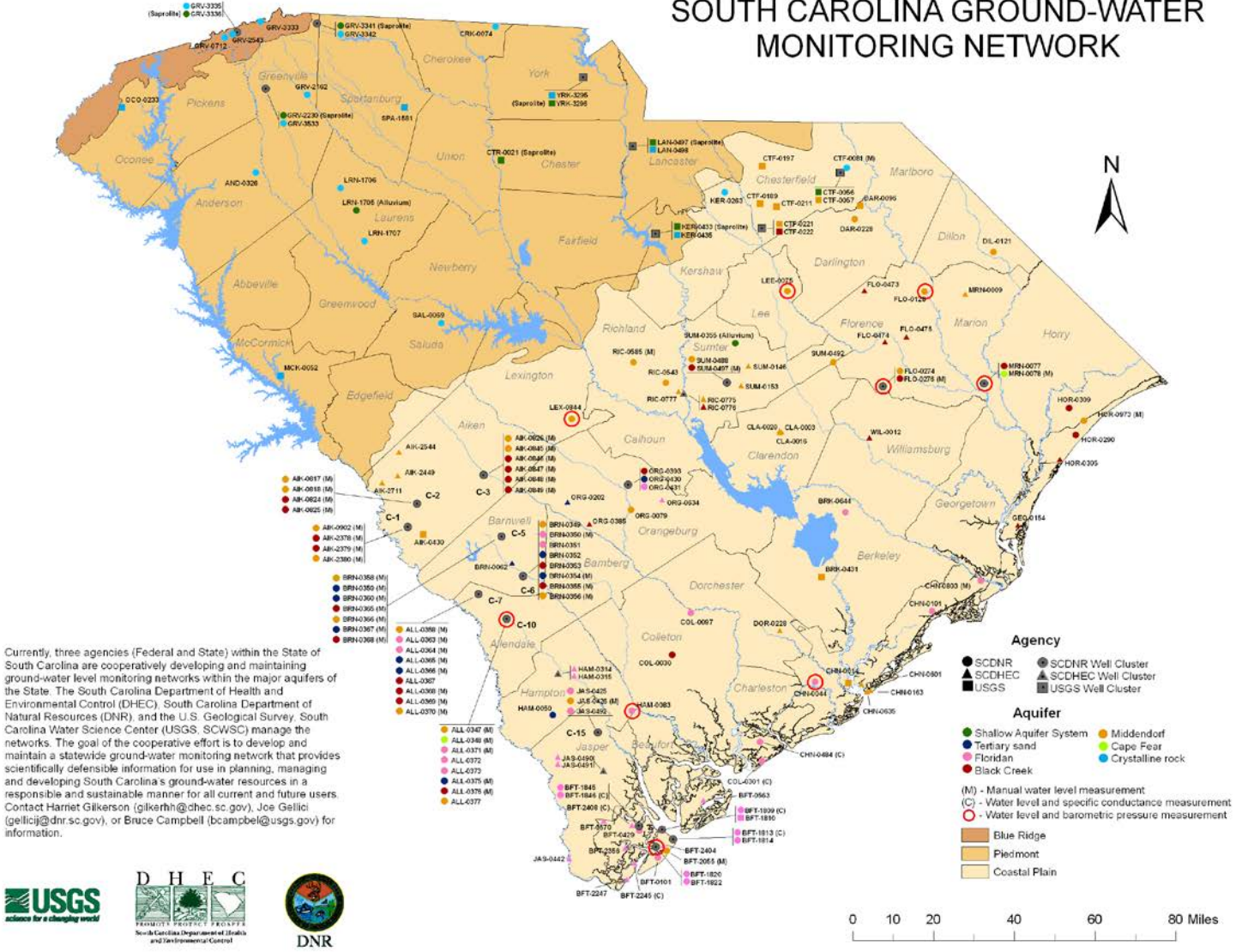
USGS Streamflow and Lake Level Monitoring Network



Map prepared by the Land, Water and Conservation Division of the South Carolina Department of Natural Resources (2011).

Approximately 100 streamflow gages and 13 lakes gages.

SOUTH CAROLINA GROUND-WATER MONITORING NETWORK



Currently, three agencies (Federal and State) within the State of South Carolina are cooperatively developing and maintaining ground-water level monitoring networks within the major aquifers of the State. The South Carolina Department of Health and Environmental Control (DHEC), South Carolina Department of Natural Resources (DNR), and the U.S. Geological Survey, South Carolina Water Science Center (USGS, SCWSC) manage the networks. The goal of the cooperative effort is to develop and maintain a statewide ground-water monitoring network that provides scientifically defensible information for use in planning, managing and developing South Carolina's ground-water resources in a responsible and sustainable manner for all current and future users. Contact Harriet Glikerson (glikernh@dhec.sc.gov), Joe Gellici (gellici@dnr.sc.gov), or Bruce Campbell (bcampbel@usgs.gov) for information.



Approximately 200 monitoring wells.

Stakeholder Meetings

Consensus on:

- Need for regional planning
- Planning regions should conform to basin boundaries
- A “roadmap” guidance document is needed detailing the regional planning approach for the State.



QUESTIONS
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The Middle Saluda River at Jones Gap State Park.

