



Drought Management and Response Part 3

Agenda Item 6



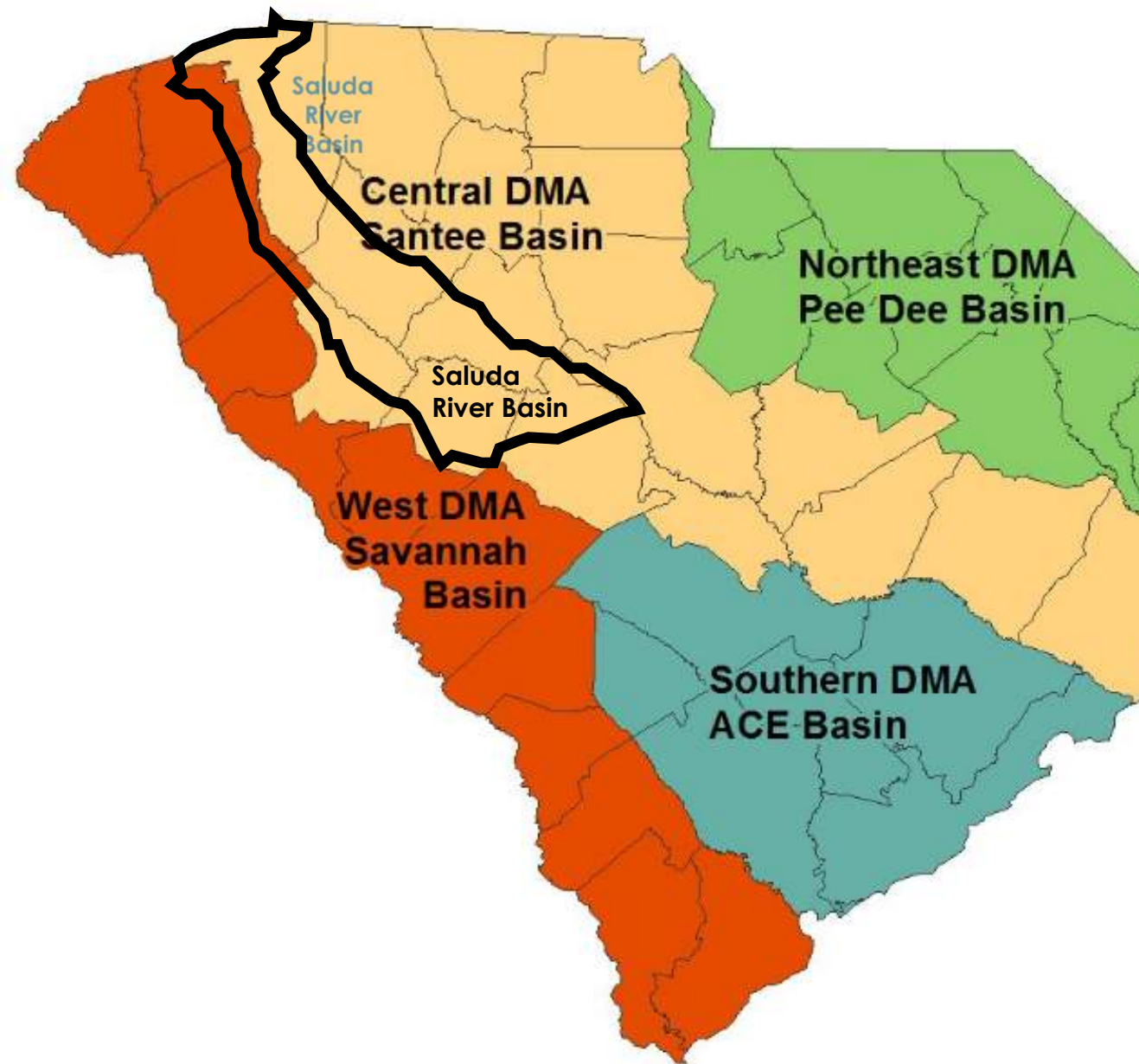
Per the Planning Framework, the Specific Obligations of the RBC, with Support from the SCDNR, are:

1. Collecting and evaluating local hydrologic information for drought assessment.
2. Providing local drought information and recommendations to the DRC regarding drought declarations.
3. Communicating drought conditions and drought declarations to the rest of the RBC, stakeholders, and the public.
4. Advocating for a coordinated, basin-wide response by entities with drought management responsibilities.
5. Coordinating with other drought management groups in the basin as needed.

Planning Framework Outline for **Chapter 8. Drought Response**

1. Summarize **existing drought plans** and **drought advisory groups**
2. Summarize any **drought response initiatives** developed by the RBC
3. List **recommendations** on drought management or drought management strategies
4. Include a **communication plan** to inform stakeholders and the public on current drought conditions and activities regarding drought response

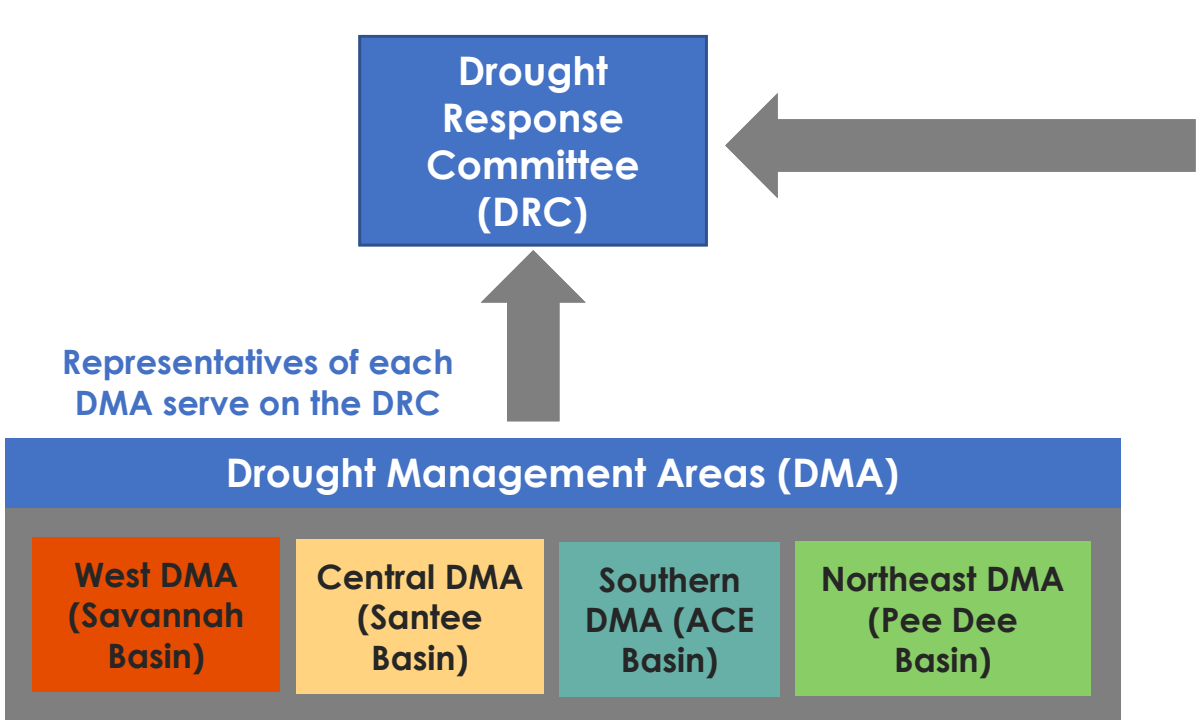
Drought Management Areas



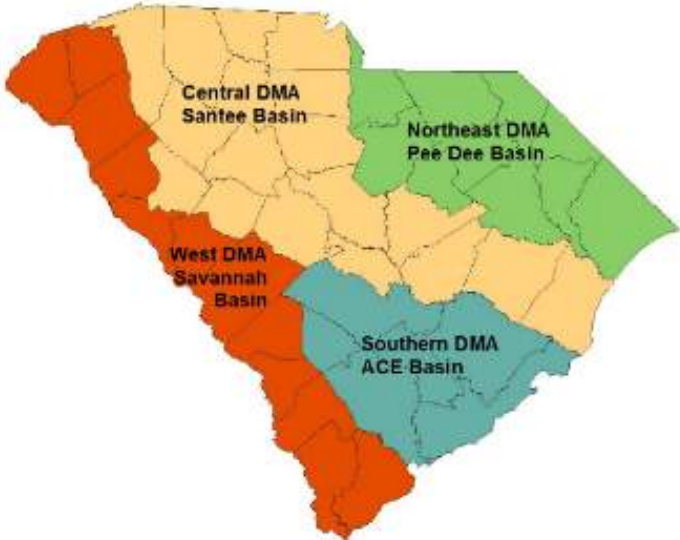
Central Drought Management Area

| Group | Committee Member | County |
|--------------------------------------|----------------------------------|-------------|
| Agriculture | John Irwin | Laurens |
| Commission of Public Works | Ken Tuck | Spartanburg |
| Counties | Peggy Swearingen | Fairfield |
| Domestic User | Christy Jones | Richland |
| Industry | Ed Holder | Greenville |
| Municipalities | James G. Bagley | York |
| Power Generation Facilities | Alan Stuart | York |
| Private Water Supplier | Brad C. Powers | Spartanburg |
| Public Service District | Vacant | |
| Regional Council of Gov. | Gregory Sprouse | Richland |
| Soil and Water Conservation District | John T. Rivers | Sumter |
| Special Purpose District | Fred Castles | Chester |

South Carolina Drought Response Committee



| State Agency Members | |
|----------------------|----------------------------------|
| Committee Member | Agency |
| Mr. Ken Rentiers | SCDNR, LWC Division |
| Mr. David Thachik | SC Emergency Management Division |
| Mr. Joe Koon | SCDHEC |
| Mr. Darryl Jones | SC Forestry Commission |
| Mr. Chad Truesdale | SC Department of Agriculture |

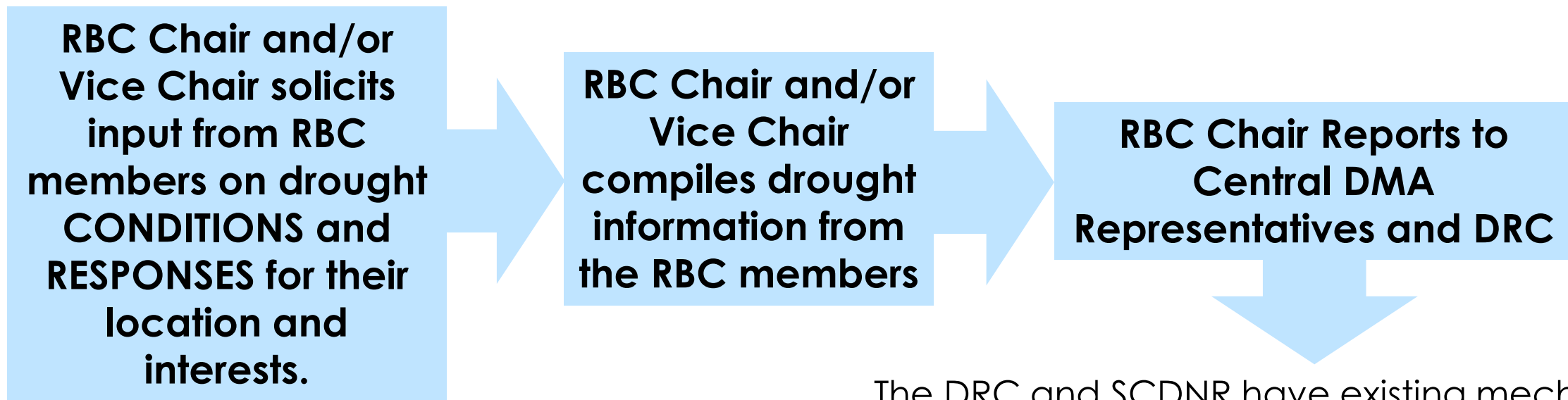


The DRC carefully and closely monitors, conserves, and manages the State’s water resources in the best interest of all South Carolinians.

Drought Response – Communication Plan

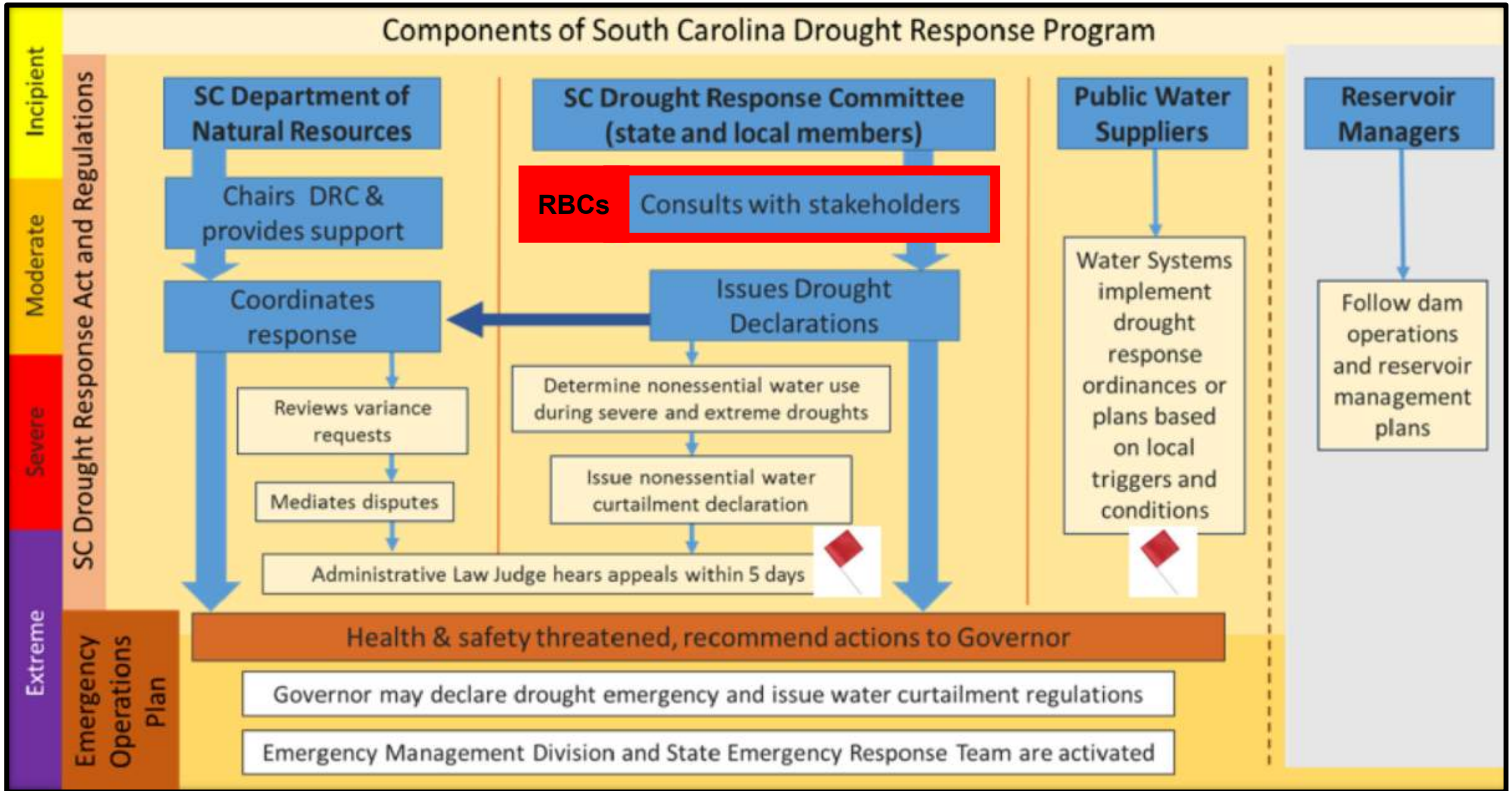
1. How does the RBC want to **Communicate** to the rest of the RBC, the public, and stakeholders?

One suggested approach (to start a discussion)...



The DRC and SCDNR have existing mechanisms to communicate and coordinate drought response with stakeholders and the public.

Components of South Carolina Drought Response Program



From: Broad RBC Meeting #3, **Drought Response and Planning in South Carolina**, Elliot Wickham, Ph.D.



Drought Management and Response

2. Does the RBC want to develop any **drought management or response strategies?**

Example 1: Edisto RBC's Low Flow Management Strategy

The strategy serves to augment statewide and municipal drought management plans by triggering tiered withdrawal curtailment by the **largest surface water users** in the basin when Edisto River flow reaches certain low levels.

| Incremental Percent Below 20% of Median Flow | Edisto River Flow Range (cfs) at Givhans Ferry | | Reduction Goal for Surface Water Withdrawals |
|--|--|-------|--|
| | Lower | Upper | |
| 0-20% | 266 | 332 | 20% |
| 20-40% | 199 | 266 | 40% |
| 40-60% | 133 | 199 | 60% |
| 60-80% | 66 | 133 | 80% |
| 80-100% | 0 | 66 | 100% |



Example 2: CWWMG Low Inflow Protocol

| Stage * | Water Use Reduction Actions | | |
|------------|--|--|---|
| | Licensee (Duke) | Public Water Suppliers | Owners of Large Water Intakes |
| 0 | Reduce Wylie Recreation Flow Releases | None | None |
| 1 | Reduce Project Flow Requirements | Implement voluntary water use restrictions, 2 day/wk irrigation, reduce vehicle washing GOAL: 3-5% water use reduction | Request voluntary reductions of customers/employees |
| 2 | Eliminate recreation flows, further reduce other Project Flow Requirements | Implement mandatory water use restrictions, 2 day/wk irrigation, eliminate vehicle washing GOAL: 5-10% water use reduction | Request voluntary reductions of customers/employees |
| 3 | Reduce releases to Critical Flows | Implement increased mandatory water use restrictions, 1 day/wk irrigation, limit other outdoor water uses GOAL: 10-20% water use reduction | Request voluntary reductions of customers/employees |

** Triggers for each stage are based on a storage index, Drought Monitor 3-month avg, and 6-month average streamflows*

Example 3: Keowee-Toxaway Low Inflow Protocol

| LIP Stage Triggers | | | | |
|---|---|--------------------------|---|--|
| Stage | Trigger | | US Drought Monitor ² (12-wk avg) | Streamflow (LTA versus previous 4 months) ³ |
| 0 | Duke Energy Storage Index ¹ < 90% & USACE Storage Index ⁴ < 90% | and one of the following | >=0 | < 85% |
| 1 | USACE in DP 1 | | 1 | < 75% |
| 2 | USACE in DP 2 | | 2 | < 65% |
| 3 | USACE in DP 3 | | 3 | < 55% |
| 4 | Duke Energy Storage Index < 25% | | 4 | < 40% |
| Notes: | | | | |
| LTA - long-term average; DP - Drought Plan | | | | |
| ¹ The Duke Energy Storage Index is based on the usable storage for Keowee, Jocassee, and Bad Creek as specified in the LIP | | | | |
| ² The US Drought Monitor area-weighted average | | | | |
| ³ Streamflow gages are composite averages of Twelvemile Creek near Liberty, SC; Chattooga River near Clayton, GA; French Broad River near Rosman, NC | | | | |
| ⁴ USACE Storage Index includes usable storage for Hartwell, Russell, and Thurmond | | | | |



Drought Response

3. Does the RBC want to develop **Recommendations** on drought management?

Example Drought Response Recommendations

1. The RBC recommends that water utilities review and if appropriate update their drought management plan and response ordinance every 5 years or more frequently if conditions change. Once updated, the plans should be submitted to the SCO for review. Changing conditions that could merit an update might include:

- Change in the source(s) of water
- Significant increase in water demand (such as the addition of a new, large wholesale customer)
- Significant change in the proportion of water used by one sector compared to another (e.g., residential versus commercial use)
- Addition (or loss) of another user relying on the same source of water
- New water supply agreement with a neighboring utility
- Incorporating lessons learned (if any) from a recent drought

Following discussion, the Saluda RBC decided to include this recommendation as modified

Example Drought Response Recommendations

~~2. The RBC recommends that water utilities, when updating their drought management plan and response ordinance, look for opportunities to develop response actions that are consistent with those of neighboring utilities.~~ While triggers are likely to be unique to each water utility based on their source(s) of water, coordination of response actions identified in their ordinance, to the extent practical, supports consistent messaging through the basin, and helps avoid confusion between customers. Many water utilities in the Broad River basin already meet monthly to discuss and coordinate on various water issues. This standing meeting offers the opportunity to discuss drought response actions, and improve the consistency of those actions, where feasible.

Following discussion, the Saluda RBC decided that this recommendation was not needed or useful for the Saluda River Basin. It will not be included in the Plan

Example Drought Response Recommendations

3. The RBC recommends that water utilities coordinate, to the extent practical, their drought response messaging. Drought messaging refers to both the content and the method or mechanism to deliver the message. During droughts in the early and late 2000s, many water utilities in the Broad River basin collaborated on outreach mechanisms. Billboards and other methods were used to encourage conservation and reduce water demand regardless of the water service area. Since that time, more targeted means to reach water customers have emerged including emails, text messages, automated phone calls, and social media. While the RBC recommends that coordinated messaging continue, the need to coordinate how the message is delivered has largely been eliminated because of the more effective outreach mechanisms. Coordination on the content of the messaging should continue through the standing, monthly meetings, and other means as appropriate.

CDM Smith will revise the above, based on the RBC discussion, and provide a revised recommendation for RBC consideration.

Example Drought Response Recommendations

4. The RBC encourages water utilities in the basin to consider drought surcharges on water use during severe and/or extreme drought phases. Drought surcharges, when used, are typically only implemented if voluntary reductions are not successful in achieving the desired reduction in water use. In the Broad River basin, several water utilities have already built into their response ordinance the ability to implement drought surcharges during the severe and/or extreme drought phases. Two examples are detailed below:

Example 1: The ICWD may, at its option, implement the following excessive use rate schedule for water for its residential customers during severe and extreme drought phases:

| Tier | Water Usage (gallons per month) | Rate |
|------|---------------------------------|------------------------------------|
| I | 0-5,000 | Regular water rate |
| II | 5,000-12,000 | Two times the regular water rate |
| III | Over 12,001 | Three times the regular water rate |

Example 2: In the event of an extreme drought, Greer CPW limits domestic water use to 55 gallons per household member per day and may include a surcharge of \$0.02 per gallon for use above that limit. Institutional, commercial, industrial, and recreational water users are subject to water use surcharges of \$20 per 1,000 gallons of water used if it is deemed that adequate conservation measures were not implemented.

Following discussion, the Saluda RBC decided to include this recommendation but not include any examples of existing surcharges used by water utilities in the basin.

Example Drought Response Recommendations

5. When droughts occur, the RBC encourages water users and those with water interests to submit their drought observations through the Condition Monitoring Observer Reports (CMOR). The CMOR system, maintained by the National Drought Mitigation Center (NDMC), provides supporting evidence in the form of on-the-ground information to help the authors of the U.S. Drought Monitor better understand local conditions. The U.S. Department of Agriculture (USDA) uses the Drought Monitor to trigger disaster declarations and determine eligibility for low-interest loans and some assistance programs. The SCO also reviews and uses the CMOR system in a variety of ways. CMORs can be submitted by clicking the “Submit a Report” button at the NDMC’s Drought Impacts Toolkit website.

Following discussion, the Saluda RBC decided to include this recommendation.