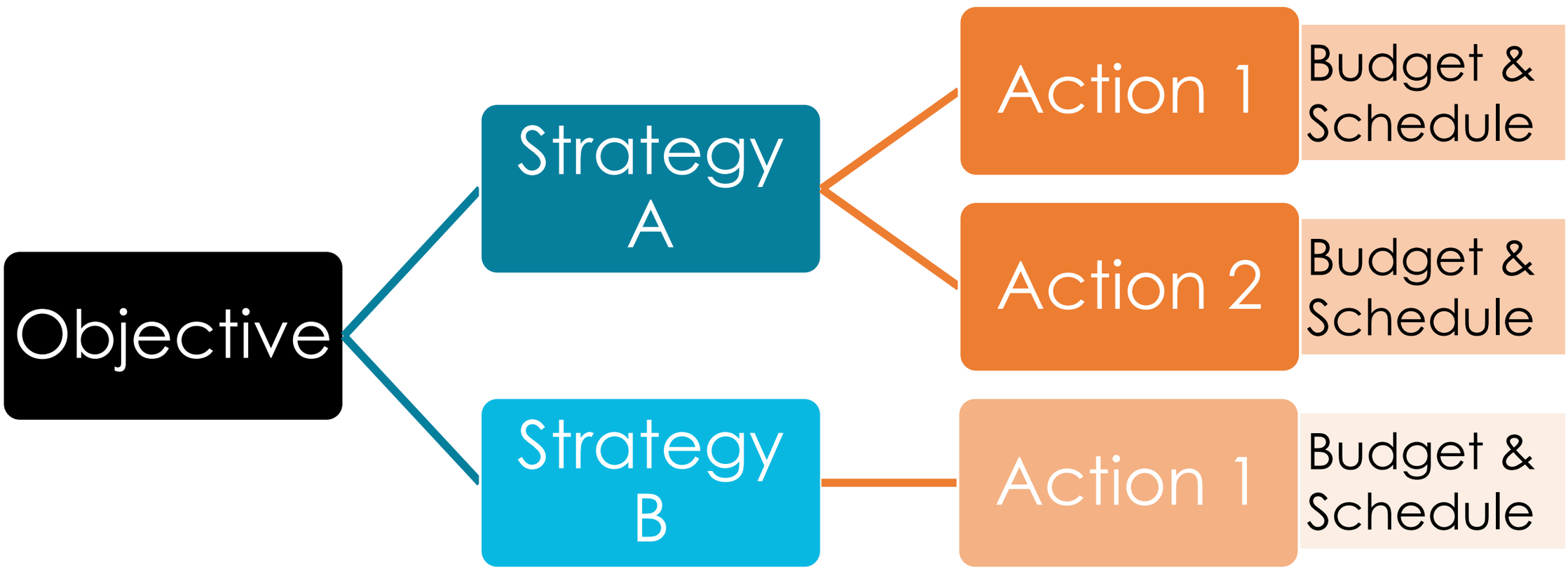
Discussion and Development of Plan Recommendations

Agenda Item 6

Quick "Look Ahead" to the Implementation Plan

- **Objectives, Strategies, and Actions**
  - Address water shortages or other identified issues
  - Informed by the recommended water management strategies and other Plan recommendations made by the RBC
- **Schedule**
  - Focuses on the first 5 years following adoption of the River Basin Plan
- **Budget**
  - Budget needed to accomplish each objective
  - Identifies potential funding sources

Implementation Plan
Objectives, Strategies & Actions



Implementation Plan – Broad RBC Identified Objectives

Objective	Prioritization	Prioritization Justification
Objective 1. Improve water use efficiency to conserve water resources	High	The Broad RBC did not find the strategies associated with one of these objectives to be of higher priority than another. Each water withdrawer will ultimately determine which strategies to prioritize based on their individual circumstances.
Objective 2. Optimize and augment sources of supply	Medium	
Objective 3. Improve drought management	High	Maintaining up-to-date drought plans is critical for public supplier response and to coordinate actions at a basin- and state-level.
Objective 4. Effectively communicate RBC findings and recommendations	High	Communication is essential to ensuring all objectives are pursued by stakeholders.
Objective 5. Improve technical understanding of water resource management issues	Medium	Additional technical information is necessary to inform and continually update the RBC's understanding of basin issues and best practices to manage concerns.

- Objectives should be ranked by importance and prioritized
- Each objective should include a justification describing its importance to water management in the basin

How do Recommendations Feed the Implementation Plan? An example from the Broad:

Broad RBC Recommendation:

The Broad RBC should identify the financial impacts of increased sedimentation on reservoirs and water resources and communicate the results to local governments to demonstrate the value of riparian buffers, sedimentation and erosion control measures, and other policies and controls that reduce sediment generation and transport. The RBC noted that proper protection of riparian buffers to minimize sedimentation requires both cooperation between jurisdictional governments and enforcement of existing policies.

How do Recommendations Feed the Implementation Plan? An example from the Broad:

Objective 5. **Improve technical understanding of water resource management issues**

Strategy C. **Research financial impacts of increased sedimentation on reservoirs and water resources and communicate impacts to local governments.**

Five Year Actions:

1. Using estimates of sedimentation, and considering future land use (2070), estimate current and future loss of storage to Broad River basin reservoirs (yrs 1-2)

2. Develop methodology to estimate financial impacts related to loss in storage (yrs 1-2)

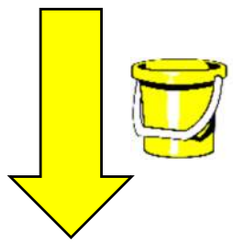
3. Communicate financial impacts of sedimentation in reservoirs to local governments (yrs 3-5)

Approach to Considering Recommendations

1. Facilitator will read the proposed recommendation and ask if the RBC understand the recommendation.
   - *RBC members can offer wording changes if the rec is not clear*
2. Facilitator will take a straw poll:
   1. All can live with it

Move to next rec

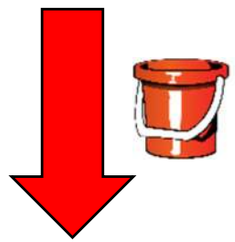
   2. Maybe can live with it if revised



RBC discussion, revision and revote.

Our goal is *not* to leave yellow bucket recs for next month, in most cases.

   3. Some Don't support it



Is there enough to support to list the rec in an appendix (listing pros/cons) for future consideration?

For Recommendations that Don't Have Full RBC Support…

Edisto RBC's Approach: For certain policy, legislative and regulatory recs, the RBC did not reach consensus but decided to include the rec in the Plan along with a discussion of why it **was supported** or **not supported**.

Broad RBC's Approach: Consensus was important to them. If a rec did not have consensus (any member could not "live with" it), it was excluded from the Plan. This only happened for a few recs.

Saluda RBC's Approach: For recs where the RBC does not reach consensus, but there is still strong support, these will be added to an appendix along with a discussion of why it didn't receive full support, where possible.

Planning Process Recommendations

On the following slides with recommendations:

[B] indicates a Broad RBC Recommendation
[US] indicates an Upper Savannah RBC Recommendation

Continued Funding

- To continue positive progress at the state level for river basin planning, the RBC calls for a state led assessment of the current funding to SCDES to support river basin planning. A memorandum should be prepared explaining the funding needed to support our growing population and critical activities including the funds needed to implement the basin recommendations provided in the plans.

[US RBC had a similar, but simpler rec]

Building on Resiliency Planning Efforts

- The RBC recommends that as part of the comprehensive planning process each local government consults the Resilience Plan developed by the South Carolina Office of Resilience, local Hazard Mitigation Plans, and the associated River Basin Plan(s) developed by the RBCs for inclusion within the resilience element as required by the South Carolina Local Government Comprehensive Planning Enabling Act as amended in 2020. Encourage land use regulations and corresponding ordinances be adjusted to support the resilience element. **[US RBC also adopted this]**

Recommendations made by the Broad RBC for Consideration

- SCDES, the RBC Planning Teams, and the RBCs should conduct regular (every 6 months) reviews of the RBC membership to make sure all interest categories are adequately represented and attendance across all interest categories meets the requirements of the RBC Bylaws. **[B]**

- Where appropriate and allowed, experts who present technical information to the RBCs should offer potential recommendations for RBC consideration. **[B]**

RBC DISCUSSION NOTES

Technical Recommendations

Groundwater Resources and Use

In future planning phases, the RBC recommends understanding the potential impacts of private and community/commercial wells, and how they may affect surface water (especially during droughts) and/or better characterize growth potential. **[US RBC also adopted a similar rec]**

Modeling

- Incorporate future climate projections into modeling analyses (e.g., projected temperature, evapotranspiration, and precipitation trends) to better address potential supply-side changes in hydrology. Incorporate historical climate information such as dendroclimatology (tree ring data) to inform drought risk and/or drought scenarios. **[B]**

- Update models to consider future uncertainties (changing weather patterns, population growth, development scenarios, etc.) **[US]**

Supporting Stream Gages

- Support continued efforts to maintain and expand streamflow gages. Priority consideration to the following water bodies is recommended **[B]**:

  a. S. Saluda at SC 186 and Middle Saluda at SC 288

  b. Oolenoy River

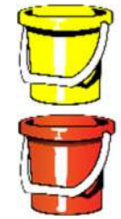
  c. Saluda below Holiday Dam

  d. Tribs in Lower Saluda basin may need more gages

The RBC also recommends that local governments that collect streamflow data make it more publicly accessible.

RBC DISCUSSION NOTES: adjust language to note these specific locations are suggested, and need further consideration during implementation. USGS is considering moving S. Saluda gage.

Climate Monitoring



- The Saluda RBC recommends the funding and establishment of a mesoscale network of weather and climate monitoring stations in South Carolina. **[B and US]**

RBC DISCUSSION NOTES: important issue for agriculture. It helps with disaster assistance, etc…

Water Quality and Reservoir Sedimentation

- Future planning efforts should include evaluation of surface water quality and trends, including nutrient loading and sedimentation. **[B and US had similar versions]**
- The Saluda RBC should collect information to quantify sedimentation on reservoirs and water resources and communicate the results to local governments to demonstrate the value of riparian buffers, sedimentation and erosion control measures, and other policies and controls that reduce sediment generation and transport. **[B and US]**

RBC DISCUSSION NOTES

Water Quality and Reservoir Sedimentation

- The RBC supports reducing sediment loading to reservoirs through:
  - The implementation of infiltration, riparian buffers, land use planning, setbacks, minimizing streambank erosion, scour, and sources of sedimentation to reservoirs.
  - Studies to better identify sources of sediment load to reservoirs
  - Further incentivize the establishment of riparian buffers, streambank restoration, and other practices that reduce sediment load to streams and reservoirs.
  - Encouraging local govts to incorporate green infrastructure and enhance stormwater ordinances
  - Strengthen penalties for non-compliance of stormwater ordinances. **[US]**

RBC DISCUSSION NOTES: in explanation, define green infrastructure.

Water Quality and Reservoir Sedimentation

- The RBC supports reducing sediment loading to reservoirs and waterways through:
  - Encouraging local governmental ordinances with incentives or green infr.
  - Studies to better identify sediment loading sources and the financial costs associated with mitigating those sources to our reservoirs and waterways.
  - Strengthen penalties for non-compliance of erosion/sediment control permits and ordinances and stormwater permits and ordinances. **[US]**

RBC DISCUSSION NOTES: in explanation, define green infrastructure.

Water Quality and Reservoir Sedimentation

- The Saluda RBC, with support from technical experts, should evaluate the impact of future land use changes on water resources quantity and quality. **[B]**

- In future phases, include more analysis on the relationship of water quantity to water quality, such as the ecological flow relationship analysis that was performed. For example, evaluation of land use-based pollution and sediment loading could be included.

RBC DISCUSSION NOTES: first bullet.. Conversion of ag land to development and impact on inc. peak flow and reducing baseflow.

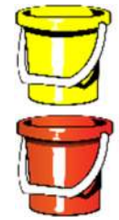
Water Quality and Reservoir Sedimentation

- The Saluda RBC should identify potential pinch points where current and projected low flows may lower the assimilative capacity of the streams. Strategies may need to be identified to mitigate low flows at these potential pinch points. **[B]**

RBC DISCUSSION NOTES

Changing Land Use and Conservation

- The RBC supports the study impacts of changing land use on streamflow characteristics (magnitude of flows, timing of flows, flashiness, etc.) **[US]**



- The RBC supports:

  - The development of a land prioritization analysis that prioritizes future land uses, such as…[**Rebecca** to wordsmith]
  - The development and funding of county conservation and mitigation banks for land conservation and collaborate with SC Conservation Bank and Land Trusts to conserve those properties **[US]**

RBC DISCUSSION NOTES: RBC should develop a strategy, for others to implement.

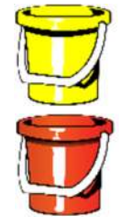
Future RBC Planning Efforts

- The RBC supports adequate state funding for:
  - smaller tributary water quality sampling and other areas without much sampling data, such as:

    - Expand the ambient SW and macroinvertebrate monitoring programs
    - "Adopt a stream" – citizen science approved by USEPA.
  - Conservation Districts

RBC DISCUSSION NOTES: revisit and see if it's redundant or if something else needs to be added, that was noted in an other rec.

Building RBC Technical Capacity



- SCDES should create and maintain an online library of, or a catalog of links to, technical information that will enhance the RBC's technical understanding of water resources concepts and issues. **[B]**

Data / Filling Data Gaps

- Coordinate with DES to identify and define data gaps and possible avenues for filling gaps in future phases.
- Support the funding of the joint USGS and Clemson proposal to quantify flow-ecology relationships in the Blue Ridge ecoregion of SC.
- Support the funding the joint USGS and Clemson proposal to quantify flow-ecology relationships in the larger rivers.

RBC DISCUSSION NOTES: macroinvertebrates? Check with Luke Bower.

Data / Filling Data Gaps

- Data Usage and Acquisition: compile the data obtained from established credible systems in alignment with RBC goals for utilization across the State before creating new systems, databases, or monitoring stations. Historic data, and new data when developed, needs to be publicly accessible and in a consistent, standardized, format that supports public comprehension. **[US]**

RBC DISCUSSION NOTES: Could be worked into "library" rec

Educating the Public

- Identify/support programs that help educate the public at all ages.

  One example may be collecting information on septic tanks and where older/failing septic tanks may be impacting water quality.

RBC DISCUSSION NOTES: RBC also needs to get out and promote the Plan.

Assessing Alignment with Other Plans

- For river basins with state or federal specially designated streams (e.g., National Wild and Scenic Rivers or State Scenic Rivers), watershed-based plans, and any other similar plans, the RBCs should assess alignment between the River Basin Plan and the management plan associated with the special designation. **[B]**

Who's responsibility??

RBC DISCUSSION NOTES

Policy/Legislative/Regulatory Recommendations

Policy/Legislative/Regulatory

- **The RBC encourages utilities to build resilience to ensure adequate quantity if water through identification of alternative sources including interconnections.**

- **The RBC encourages consideration of regionalization opportunities among water utilities.** Regionalization is one tool to better manage the availability of water resources and build resilience.
- Amend the building permitting process in counties and municipalities to require developers work with water utilities to ensure adequate water availability **[US].**

Policy/Legislative/Regulatory

- Laws that allow for regulation of water use need to be enforceable to be effective. The current water law, which grandfathers most water users, must be improved to support effective management of the state's water resources. **[B]**
- Water law and implementing regulations should not distinguish between registrations and permits. All water users that withdraw above the identified threshold should be required to apply for a water withdrawal permit. **[B]**
- Require permits statewide for all existing and new water withdrawals over 3 MGM, including those before 2011 and all registered users. All users must be evaluated for reasonableness and must meet minimum instream flow (MIF) requirements **[Save Our Saluda proposed Recommendation]**.

Policy/Legislative/Regulatory

- Remove “safe yield” (SY) entirely as a metric in the SC water withdrawal law and implementing regulations. **[Save Our Saluda proposed Recommendation]**
- Revise minimum instream flow (MIF) standards based on best available science to adequately protect designated uses and recognize regional differences. **[Save Our Saluda proposed Recommendation]**

Policy/Legislative/Regulatory

- The WaterSC should work with all RBCs to develop model riparian buffer ordinance language for local jurisdictions to consider. **[B]**
- The water withdrawal permitting process should specifically assess the permit application's alignment with the current River Basin Plan, particularly regarding proposed withdrawals, returns, resource conservation, and drought response. **[B]**

Policy/Legislative/Regulatory

- SCDES, with input and support from WaterSC Water Resources Working Group (Executive Order 2024-22) and all the RBCs, should study peer states with similar hydrology, physical setting, climate and water use patterns for information and alternative methods for allocating surface water resources and to inform specific science-based recommendations in the State Water Plan.

Policy/Legislative/Regulatory

- **Land/Water Management Laws, Regulations, Policies, and Manuals.** To better manage runoff, encourage infiltration, and reduce sedimentation, the RBC recommends that SCDES perform a benchmark analysis of our statewide water law, regulations, policies, and manuals including but not limited to:
  - riparian buffer protection
  - aquatic resource alterations
  - mass grading construction activities
  - other land disturbance activities including small-scale construction, and
  - the Storm Water Management BMP Field Manual.

  Documents should then be updated/condensed to eliminate redundancy and inconsistencies while incorporating recommendations from each RBC and industry standards. The result should be easily accessible as a guideline for local governments.

Policy/Legislative/Regulatory

- Upon completion of the statewide assessment of land/water management laws, regulations, policies, and manuals, the RBC requests a call to action to each local government within the basin to review and update their ordinances and design guidelines to be concurrent with the State recommendations. Examples include promotion of:
  - **Riparian Buffers** - A vegetated area of land that is adjacent to a body of water. Riparian buffer help filter pollutants from runoff, reduces erosion, stabilizes streambanks, reduces flooding, and provides valuable riverside habitat for native plant and animal species.
  - **Green Infrastructure** - The Water Infrastructure Improvement Act of 2019 by the 115th Congress defines green infrastructure as "*the range of measures that use plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspirate stormwater and reduce flows to sewer systems or to surface waters*."
  - **Tree ordinances** that evaluate tree canopy coverage as a stormwater mitigation tool. Consideration to the Green Infrastructure Center and the US Forest Service's Southern Region Trees 2 Offset H2O studies as a starting point is recommended.

Other Topics, Issues and Questions that May Lead to Recommendations

Implementation Funding

- A grant program should be established to help support the implementation of the actions and strategies identified each RBC's River Basin Plan. One example is Georgia's Regional Water Plan Seed Grant Program which supports and incentivizes local governments and other water users as they undertake their Regional Water Plan implementation responsibilities.

[The US RBC is working on finalizing this rec, but not there yet. They may revise it to include non-profit organizations as eligible entities]

Flow Statistics

Is there value in a periodic review of basin flow characteristics (over a more condensed recent past ~30ish years)?

Does 7Q10 really make sense as we plan for the future, especially as we consider the distant (75+ year) past data?

Stream and river systems change over time, if we are incorporating stream data within the 7Q10 analysis that experienced significant change (installation of a dam, channel straightening, significant land use change) are we really getting an understanding of what could be the future flow?

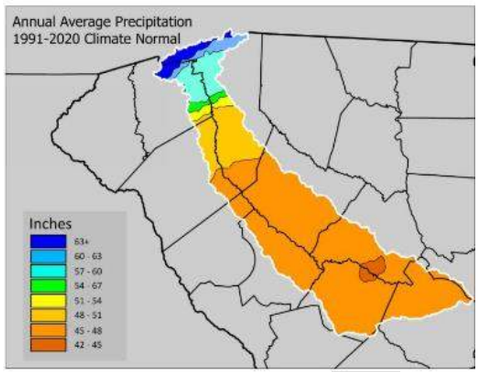
Use of median flow rather than mean for water allocation…

RBC DISCUSSION NOTES

- There was discussion regarding a recommendation about focusing the analysis using hydrologic data from only the past 30-years, recognizing that land use changes and climate trends over the last 30 or so years may be more useful for modeling purposes, than using hydrologic data from 30-90 years ago.
- The September RBC meeting will resume with this discussion.

Potential Data Gaps to Fill:

- Better understanding of agricultural resilience with their farm ponds?
- Better understanding of the "non-consumptive" users and the quantity returned to the system?
- What data in SWAM is the most inaccurate? How can we fix that though better data gathering?
- How can we think forward about water quality concerns and gathering data that benefits both quality and quantity implications and is more efficient?
- Data transparency for allocated versus used for water permit holders
- Data transparency for both groundwater and surface water withdrawal reporting with a clear list of who is compliant for users withdrawing greater than 3 MGM.
- Would data from those withdrawing less than 3 MGM be helpful?
- More sampling? – what and where?
- A lot of gaps in this report – how often could this be updated? Needed? Changes to it? https://des.sc.gov/sites/des/files/media/document/Safe%20Yield%20Report.pdf
- We have little data on flow characteristics, and the tributaries midway and lower in the basin have substantially lower annual rainfall than the headwaters (see map).



Data

Could SCDES improve upon the SC Watershed atlas to include additional permit/registration information including violations, consent orders, consent decrees, for public consumption and transparency?

Collaboration

Did we experience anything with the recent drought this summer and subsequent heavy rains from Debby or Helene that should aid us in considering any specific recommendations?

Cross basin collaboration. Who, what frequency, intent – we talked about this at the June meeting but need to further develop.

Collaboration

What is the RBC's role and SCDES's role in education and citizen science initiatives and how can those be funded? How can we build off existing success (like adding CMOR to Adopt-A-Stream?)

- CoCoRaHS? – promote this citizen science tool? It's already being widely used in SC – not sure who is already promoting this https://maps.cocorahs.org/
- Photo comparison with QR coded sign? https://www.chronolog.io/ Consider pilot at Unity Park with City of Greenville/Friends of the Reedy River.
- Statewide educational strategy? – We could consider endorsing several specific educational tools and determine our role in getting the word out (https://www.projectwet.org/)
- The city of Greenville has a stormwater credit policy (NOTE – Friends of the Reedy River is going to help them update this policy during the FY24/25 fiscal year. The current policy endorses several educational tools – I'm sure that list will be updated. https://www.greenvillesc.gov/DocumentCenter/View/1265/Stormwater-Fee-Credit-Policy-PDF?bidId=

Regulatory Challenges

What challenges does SCDES have today that make it hard to administer/enforce the CURRENT regulations that we should consider as we develop policy recommendations?

Land Use and Economic Analysis

Could a land use and economic analysis be performed to determine the breakdown of zoning (by type and municipality) including unzoned acreage and then assign projected increases in water demand based on projected land use conversion trends? For example, conversion to irrigated agriculture or commercial/industrial?

Riparian Water Rights

We could consider benchmarking SC protection for riparian buffers to similar states – figure out where we fit, and we should take steps to get ourselves to being the best in the southeast?

Rethinking our regulated riparian water rights.

- How do we want to respond to the changing demands and the existing expectations from current users?
- How does the regulated part need to advance? Both overreaching and inadequate legal response will produce social turmoil and will not balance private values and public values. Is there a way to balance this?

The South Carolina Surface Water Withdrawal, Permitting Use, and Reporting Act

Idea: For agricultural users perhaps pilot a meter tracker so we better understand withdrawal – could incentivize this program. That could help determine changes to the registration system or leading to agricultural users becoming part of the permitting system.

What could conversion to a permitted system for agricultural users look like? How could we pilot?

What would it mean to require agricultural users to have a contingency plan and to include farm ponds in that plan? What could the data gathered do for us to help us better understand farm resiliency and where we have redundancy during times of drought? How are farm ponds being filled (from groundwater?)