Group Discussion of Water Management Strategies

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Agenda Item 5

Group Breakout Exercise

1. **What existing water management strategies are already used in the Santee River basin?** Consider and group these strategies by water use sector and whether they are:
   a. Supply-side strategies
   b. Demand-side strategies
   c. Drought or low flow management strategies

2. **How effective are the existing strategies?** Think in terms of their ability to reduce demands, increase supply availability, and prevent shortages. Are they effective at a local scale, but not necessarily at the basin scale? Do the strategies have other benefits, like reducing costs of operations?

3. **Do you think strategies that are already in-place can be expanded or improved?**

4. **What types of strategies are likely to be relevant in the Santee River basin to reduce or eliminate projected shortages, increase available supply, minimize low flows, and help improve the flow regime for aquatic organisms and recreation**?

Group Reports – Q1: Existing Strategies in the Basins

Supply side:

- Multiple Intake Sources
- Additional Storage and Impoundments
  - Dredging existing impoundments
  - Smaller scale storage (such as private water barrels, cisterns)
- Conjunctive Use (using groundwater in addition to surface water)
- Inter-basin transfers
- Aquifer storage and recovery
- Stormwater methods that improve recharge
  - Water quality buffers
  - Biowales, etc.

Demand Side:

- Improvements in non-consumptive use (Wateree Station cooling tower)
- Recycled water programs (small amount already occurring in Basin)
- Drought and contingency plans
- Water loss/control programs (water audits) via use of smart meters
- Graduated rate structures to disincentivize high water use
- Public education and outreach
- Improvements in agricultural/ golf course irrigation
- Policy Recommendations

Group Reports – Q2: Effectiveness of Existing Strategies

More Effective
- ASR (in mount pleasant, other basins have had issues)
- Maintaining multiple water sources
- Utilizing water within drinking water conveyance system (such as elevated tanks) in flash shortages

Possibly Effective
- Household conservation techniques

Priority
- Increased Water Reuse, especially with ASR. Currently, drinking water injected in wells, going forward would like to use treated effluent.
- Incorporating latest technology (such as AI) to optimize reservoir releases

Group Reports – Q3: Can Existing Strategies be Expanded?

- ASR well expansion
- Expand water reuse/recycling – will need to consider regulations, new statutes are coming into play. This will be a priority of the Santee river basin plan.

Group Reports – Q4: What Strategies are Relevant in the Lower Savannah and Salkehatchie River basins and Should be Further Evaluated?

Text…

Water Management Strategies

Important Considerations:

- Water users have different financial and technical resources.
- Not every strategy is applicable to every water user.
- Due to **uncertainty** of future water availability, it is becoming increasingly important to use water as efficiently as possible.
- Some strategies may be identified as part of an **adaptive management plan**. They are only recommended if certain risk triggers occur, or conditions change beyond what is expected.

Adaptive management is a framework that can be used to implement options as the future unfolds in a structured way to avoid the pitfalls of either **under-performance** or **over-investment.**

What Are Some Potential Uncertainties that May Impact the Santee River Basins?

RBC identified Uncertainties
Recurrence of earthquakes
Power demand and supply
Hydrologic variability
Evaporative losses
Regulations, both quality and quantity
Waste management (I.E. Pinewoods)

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Common uncertainties in water resources planning

What Strategies Should be Recommended as part of the River Basin Plan?

Also consider which strategies might be most effective to adapt to changing conditions.

Supply-Side Strategies Already in Use

- Onsite retention of stormwater (impoundments for agriculture and golf)
- Conjunctive use (ag, public supply, energy, and other sectors)
- Interconnections and regionalization of public supply systems
- Interbasin transfers (e.g., from Edisto to Santee)
- Aquifer Storage and Recovery (e.g. Mount Pleasant Waterworks)

Should any of these existing strategies prioritized?

Are there other supply-side strategies that should be recommended?

Which strategies would be most useful to adapt to changing conditions?

Water Conservation and Efficiency Strategies
(Demand-Side Strategies)

RBC Decisions

Irrigation (Ag & Golf Courses) Portfolio of Water Efficiency Strategies	Supported?	Priority?
Water Audits and Nozzle Retrofits		
Irrigation Equipment Changes		
Soil Management and Cover Cropping		
Irrigation Scheduling		
Crop Variety, Crop Type, and Crop Conversions		
Moisture Sensors / Smart Irrigation Systems		
Wetting Agents (golf courses)		
Future technologies		

Water Conservation and Efficiency Strategies
(Demand-Side Strategies)

RBC Decisions

Municipal Portfolio of Water Conservation and Efficiency Strategies	Supported?	Priority?
Conservation Pricing Structures / Drought Surcharge		
Public Education of Water Conservation		
Landscape Irrigation Program and Codes / Time-of-Day Watering Limits		
Leak Detection and Water Loss Control Programs (and replacement of aging Infrastructure)		
Advanced Metering Infrastructure (AMI) and Automated Meter Reading (AMR)		
Car Wash Recycling Ordinances		
Water Waste Ordinance		
Toilet Rebate Program		
Residential Water Audits		
Building Code Requirements (Water Efficiency Standards for New Construction)		

Water Conservation and Efficiency Strategies
(Demand-Side Strategies)

RBC Decisions

Industrial and Energy Portfolio of Water Conservation and Efficiency Strategies	Supported?	Priority?
Water Audits		
Rebates on Energy Efficient Appliances		
Water Recycling and Reuse		
Water Saving Equipment and Efficient Water Systems		
Installing Water Saving Fixtures and Toilets		
Educating Employees		