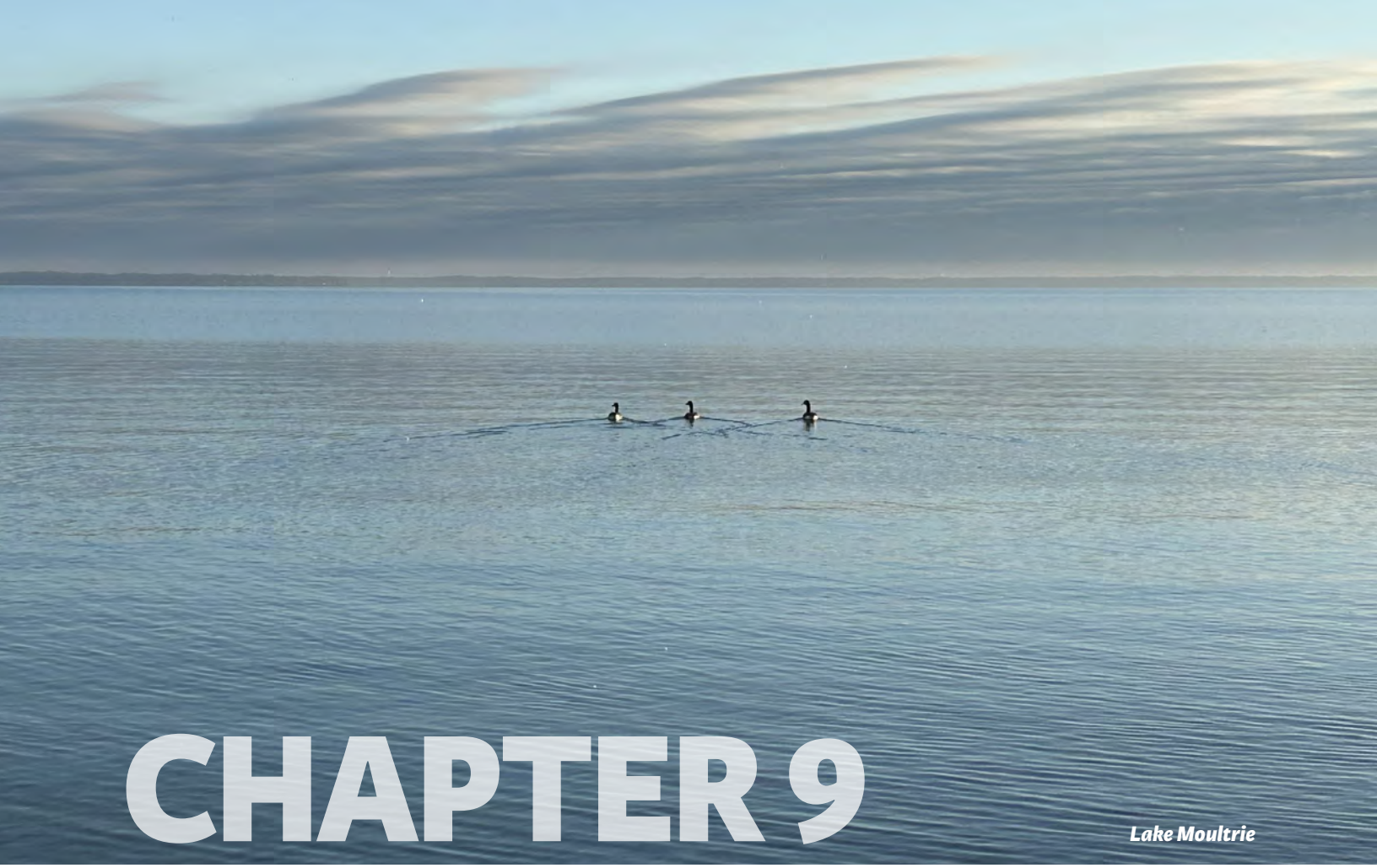

CHAPTER 9

Lake Moultrie

Next Steps and Considerations

This chapter outlines considerations for state leadership as to the state's water policy, interstate planning and coordination, and SCDES's next steps to sustain water planning efforts into the future and improve water resource management and resilience.

In accordance with SCDES's duty under law to advise and assist the Governor and the General Assembly in formulating and establishing a comprehensive water resources policy for the state, including coordination of policies and activities among the state departments and agencies, SCDES has provided recommendations from stakeholders in the preceding chapters and suggests policy review by state leadership and a strategy for interstate collaboration.

The planning process will use an adaptive management approach to address societal, economic, and technological changes or challenges as they arise including any changes in water resource availability. An adaptive management approach is one that responds to changing conditions in an efficient and timely manner and can be updated as needed to respond to rapid changes in the water use and water availability landscape. To implement an adaptive plan, continuing and consistent stakeholder engagement and river basin conditions monitoring will be needed. As waters of the state are a shared resource with shared responsibility, there are roles for all stakeholders and South Carolinians to be a part of this State Water Plan in implementing water resources management and best practices.

To implement the water management strategies and recommendations identified in this State Water Plan, funding from both public and private sources is also essential. Without reliable financial resources, even well-designed strategies risk being delayed, scaled back, or abandoned, undermining the shared vision for sustainably managed water resources that balance human and ecological needs.

SUMMARY

Prior to 2024, SCDNR was responsible for water planning in South Carolina, and SCDES was responsible for the regulation of surface water and groundwater use. As part of restructuring under Act 60 of 2023, the state water planning function was moved to SCDES. As a result of restructuring, SCDES has been able to consider the overall management of the water resource and associated laws in preparing the State Water Plan. SCDES has identified the need for policy review.

Regarding water planning, South Carolina's strategy emphasizes adaptive management to ensure long-term resilience and sustainability of the state's water resources. This approach involves continuous stakeholder engagement, regular updates to planning frameworks, and flexible responses to changing environmental, societal, and technological conditions. RBCs and WaterSC play central roles in implementing the strategies and actions identified in the River Basin Plans, coordinating across regions, and advising SCDES on policy and technical matters. Regular meetings and statewide summits are proposed to foster collaboration and transparency.

Public education and outreach are key priorities. A comprehensive communication plan will raise awareness about water conservation, planning efforts, and the importance of stakeholder involvement. Targeted outreach to government agencies, community organizations, businesses, and the legislature will help align policy and funding with water management goals.

Interstate coordination is critical for river basins and groundwater aquifers shared with Georgia and North Carolina. The plan calls for formalizing data sharing, routine collaboration, and high-level discussions to address cross-boundary water challenges. Successful regional models provide examples for future partnerships.

Robust data collection and modeling are foundational to informed decision-making. The strategy includes expanding surface water, groundwater, and climate monitoring networks; updating groundwater models; and developing tools to assess ecological flows, sedimentation impacts, and coastal water dynamics.

Additional considerations include addressing uncertainties in future water demand, incorporating hydrologic variability into planning scenarios, evaluating water reuse policies, and integrating water quality concerns. These efforts aim to create a comprehensive, forward-looking framework for managing South Carolina's water resources effectively.

Implementing the next steps and considerations is essential to ensuring the sustainability and resilience of South Carolina's water resources, but doing so will require strategic and dedicated funding. From expanding monitoring networks and updating groundwater models, to hosting statewide summits and enhancing public outreach, each state initiative requires financial resources to support staffing, data infrastructure, stakeholder engagement, and technical analysis. Without adequate funding, the state's water resource planning and management may stall, undermining the ability to respond to evolving water challenges.

Jefferies Hydroelectric Station (courtesy Santee Cooper)

9.1 WATER POLICY

The policy of the General Assembly is paramount in planning and management related to the state's water resources. In fact, one of the state's duties – through SCDES – is to provide recommendations to the General Assembly to implement the policy declared in the South Carolina Water Resources Planning and Coordination Act, S.C. Code Sec. 49-3-10, et seq. (Planning Act). See Jowers v. SCDHEC, 423 S.C. 343 (citing S.C. Code 49-3-40(a)(6)). Additionally, the Planning Act directs SCDES to recommend to the General Assembly any changes required to implement the policy declared in the Planning Act.

SCDES is also charged with implementing the South Carolina Surface Water Withdrawal, Permitting, Use, and Reporting Act, S.C. Code Sec. 49-4-10, et seq. (Surface Water Act), and the Groundwater Use and Reporting Act, S.C. Code Sec. 49-5-10 et seq. (Groundwater Act). The Surface Water Act provides for the issuance of permits and agricultural registrations to surface water withdrawers. The Groundwater Act provides for the issuance of permits to groundwater withdrawers in designated capacity use areas.

History of State Water Policy

The South Carolina legislature took decisive action in 1967 to protect and manage the state's water resources when it passed the Planning Act. The General Assembly found that the state had no well-established plan for distribution and use of our water, and for long range development of water resources to their fullest potential (S.C. Act 61 of 1967). The findings of the General Assembly at that time are instructive as to the state's water policy. The General Assembly found:

- With the ever-increasing demand being made for more and more clean, fresh, pure water, means must be found for making the maximum beneficial use of this natural resource in order that all segments of our rapidly growing society may be amply supplied.
- Planning and policymaking further should encompass long range plans for which water quality management and all conceivable beneficial uses to which the waters of the State may be put in the foreseeable future.
- Proper utilization and control of the water resources of the state can be best achieved through a coordinated, integrated state water resources policy, through plans and programs for the development of such water resources and through other activities designed to encourage, promote and secure the maximum beneficial use and control of such water resources.

In 1969, the Groundwater Act was passed and provides the following legislative declaration of policy:

> "...the general welfare and public interest require that the groundwater 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 and protect these resources, prevent waste, and to provide and maintain conditions which are conducive to the development and use of water resources (S.C. Code Sec. 49-5-20)."

In 1982, the South Carolina Water Use Reporting and Coordination Act (Reporting Act) was passed. S.C. Act 282 of 1982. The Act provided, "The General Assembly declares the basic state policy in the implementation of this act to be to establish an accurate inventory of water use in the State in furtherance of an integrated state water resources policy mandated by the [Planning Act]."

In 2010, the Surface Water Act replaced the Reporting Act and went beyond establishing inventory to include permitting and registration requirements. While the Surface Water Act provides the Department authority to promulgate regulations necessary to implement the policies and purposes of the Act, there is no policy stated in the Act.

Current Surface Water and Groundwater Policy

The Planning Act and Groundwater Act contemplate beneficial use of the entire water resource; however, the Surface Water Act is silent as to policy. The Surface Water Act provides prescriptive requirements for the issuance of permits and agricultural registrations. As highlighted in the WaterSC recommendations, SCDES needs to maximize its existing authority to allocate available water to new users and to put surface water to its most beneficial use, and seek legislative authority to fulfill the responsibility where needed.

A coordinated, integrated approach to water planning and use is necessary because groundwater and surface water are inextricably connected. Surface water serves as the water "bank" during times of plentiful rainfall. Groundwater can be used when surface waters recede due to drought. In times of rain, surface waters can be used while groundwaters recharge. A consistent, comprehensive approach to water planning and use would allow the state to provide more flexibility to users as they manage water use in times of plentiful rainfall and in times of drought.

Summary

As contemplated in the Planning Act, the state must utilize its water resources to their full potential. As such, the policies of the implementing acts governing management of surface water and groundwater in South Carolina should be reviewed by the General Assembly and, if appropriate, revised to allow a consistent, integrated approach to water planning and use in South Carolina.

Water tank in the Santee River basin

9.2 Interstate Planning and Coordination

The Upper and Lower Savannah, Broad, Catawba, and Pee Dee Basins all share watershed area with either North Carolina or Georgia. More effective and consistent ways of planning and managing these shared water resources will be explored through improved interstate coordination and collaboration.

Historically, collaboration on water resource management between Georgia and South Carolina has been limited. There has been coordination on the Savannah River and shared use of groundwater resources in the Savannah and Hilton Head area. Recently, South Carolina has participated in some of Georgia's regional water planning activities, and information from Georgia has been used by the Upper and Lower Savannah RBCs in formulating their plans. North Carolina and South Carolina have a more consistent history of sharing information and collaborating on interstate issues, citing the CWWMG as an example of effective management collaboration and strategic thinking. North Carolina and South Carolina routinely exchange information, but no formal framework exists with either Georgia or North Carolina to resolve disputes, share data more routinely, or participate jointly in water management decisions.

Improve and Sustain Interstate Collaboration

South Carolina will seek ways to improve and sustain engagement with North Carolina and Georgia on interstate water management strategies. Communication and cooperation must continue and be improved, to include routine sharing of water use data. Coordinated discussions of hydrologic models or decision-making tools should take place routinely. Formal discussion at the legislative or executive level of state governments should also be considered.

SCDES will lead an effort to better organize routine coordination and collaboration with both Georgia and North Carolina, with the support of the relevant RBCs. This collaboration can use the CWWMG and the YPDWMG as examples, in which organized, funded groups address the concurrent needs of river basins in both North Carolina and South Carolina. Cross-boundary collaboration may also include engaging regularly with Georgia's Regional Councils, the Georgia equivalent of an RBC, with respect to regional water planning, especially in the Upper Savannah and Lower Savannah-Salkehatchie River basins.

9.3 Next Steps and Considerations

Building on River Basin Council (RBC) and WaterSC management strategies and recommendations (discussed in Chapter 7 and Appendix C), SCDES next steps and considerations are organized around the following overarching themes, as summarized in **Table 9-1** and discussed in the subsections that follow:

- Continuous water planning
- Intentional education and outreach
- Enhanced data collection and modeling
- Other planning considerations
- Funding for River Basin Plan implementation

These activities are split into "next steps," which represent steps for which SCDES has committed funding, and "considerations," which represent opportunities to expand existing or begin new technical and planning activities. The considerations require additional definition of scope and funding allocation.

Table 9-1. Summary of SCDES Next Planning Steps and Considerations*

Next Steps		Considerations		
Continuous Water Planning	Intentional Education and Outreach	**Enhanced Data Collection and Modeling**	**Other Planning Considerations**	**Funding for River Basin Plan Implementation**
RBCs and Inter-Basin Councils	Education and Outreach Plan and Goals	Expand Monitoring Networks	Hydrologic Variability	Federal Funding
WaterSC Continuation	State Water Plan Awareness	Expand Ecological Flow Relationships	Water Reuse	Private Funding
State Water Summit	Public Outreach	Other Models	Water Quality	State/Grant Funding
Updates of River Basin Plans and State Water Plan	Legislative Outreach			

****Each entry in this table is discussed below in organized subsections.***

Lower Savannah-Salkehatchie RBC

9.3.1 Continuous Water Planning

As South Carolina continues to grow and thrive, the state's needs for water are evolving. Continuous water planning is necessary to keep up with these growing water needs and ensure the reliability, resilience, sustainability, and sufficiency of the state's water resources for all existing and future uses. To this end, SCDES proposes the following actions to continue statewide water planning and support implementing key stakeholder recommendations made to date.

WaterSC Working Group

As the WaterSC working group concludes its efforts advising on this State Water Plan, SCDES will continue to convene WaterSC as a diverse statewide stakeholder advisory group. They will meet as needed to collaborate and advise on evolving needs, SCDES water planning efforts, and the RBC activities.

River Basin and Interbasin River Councils

RBCs will retain their broad composition and have a continuous long-term role in water planning and implementing recommendations. These groups will continue to meet periodically to pursue River Basin Plan implementation activities and discuss evolving needs. With the updated State Water Plan, SCDES will assist with coordinating and facilitating RBC meetings. Frequency of meetings will be flexible and adaptable to meet needs.

SCDES will initially focus these meetings on the following activities and adapt as necessary:

- Review and prioritize objectives and implementation activities in each River Basin Plan.
- Explore funding for implementation and assign responsibilities to manage activities.
- Coordinate with other RBCs who are implementing or advocating for similar initiatives, policies, and/or funding.
- Consider the formation of Interbasin River Councils (IRCs) to increase collaboration between RBCs. If IRCs are formed, decide how often they will meet and specify discussion topics to be explored, as well as define roles and responsibilities that complement, or are distinct from, those of the individual RBCs. Improving communication on issues common to multiple basins will be the focus of the IRCs.
- Review membership and bylaws and consider any beneficial updates or revisions.

Based on the experiences and influence of other organized river basin groups, such as the Catawba-Wateree Water Management Group (CWWMG) and the Yadkin-Pee Dee Water Management Group (YPDWMG), SCDES and some or all the RBCs may consider more formal charters and funding mechanisms in the future.

Saluda RBC at the LCWSC
Lake Greenwood Water Treatment Plant

These meetings will initially focus on the following activities and be adapted as needed:

- Consider service timeframes for members.
- Formalizing WaterSC bylaws and charter.
- Support SCDES in reviewing the Planning Framework for overall sufficiency, and recommend amendments or revisions as needed.
- Receive updates and discuss implementation of the State Water Plan and River Basin Plans.
- Continue advising and assisting SCDES regarding water policy and current issues.

Backed by the planning to date, and based on continued engagement with the South Carolina Legislature, SCDES will continue to seek opportunities to discuss or suggest potential changes in South Carolina water policy, laws, and/or regulations that could help achieve broadly agreeable goals for the state's water resource management. SCDES expects that opportunities may arise from review and discussion of the RBC and WaterSC recommendations summarized in Chapter 7.

Water Summit

SCDES will host an annual or biannual water summit of RBCs, WaterSC, and the water resource stakeholders. This water summit will bring together the many stakeholders of South Carolina's water resources to discuss yearly accomplishments, issues of concern, changes in priorities, and collaboration in implementing common goals around water planning and water resource management.

WaterSC

River Basin Plan and State Water Plan Updates

With guidance from the RBCs and WaterSC, SCDES will develop a flexible schedule for updating the River Basin Plans and the State Water Plan. In addition, the Planning Framework will have an associated schedule by which it is reviewed and updated to remain current with the needs of the state, to reflect successes of the planning process, and address evolving conditions of its water resources. These updates will require a long-term funding commitment, staff commitments from SCDES, and continued volunteer support from stakeholders.

River Basin and State Water Plan updates will involve:

- Regular meetings of the RBCs and WaterSC.
- Update of water demand projections. Future demand projections will incorporate more recent population projections from the South Carolina Office of Revenue and Fiscal Affairs than were available during the RBC planning process. More recent projections may estimate considerably higher population growth in some counties. The updated demand projections will also consider the recent growth in demand for energy production and data center development.
- Update and application of the Simplified Water Allocation Model (SWAM) for analyzing planning scenarios.
- Application of the Coastal Plain groundwater models for analysis of planning scenarios.

The original intent of the Planning Framework was to supplement surface water modeling with groundwater modeling in the Edisto, Lower Savannah-Salkehatchie, Pee Dee, and Santee River basins. While this was accomplished for the Edisto River basin, the U.S. Geological Survey (USGS) groundwater modeling effort for the remaining Coastal Plain basins was paused because of model development and calibration issues that could not be resolved within the planning timeline. Continual funding and support will be considered for groundwater model development and its use by the RBCs to assess future groundwater availability and update their River Basin Plans.

SCDES will also evaluate its technical role in future iterations of the plans and Planning Framework. Specifically, SCDES will review its roles in developing demand projections, performing groundwater and surface water modeling, coordinating ecological flow assessments, water quality, and participating in other technical work that may expand the planning envelope in accordance with RBC and WaterSC recommendations.

Lake Blalock

9.3.2 Intentional Education and Outreach

The public and stakeholders will be made aware of water planning activities and be educated on South Carolina's water resources, efficient water use, and conservation practices. This section outlines SCDES's planned goals and activities to provide public awareness, education, and opportunities for involvement in water planning.

Education and Outreach Plan and Goals

SCDES will develop and implement an education and outreach communication plan and engage with all stakeholders involved in water planning in South Carolina. SCDES will collaborate with other organizations already engaged in this type of outreach at local, regional, and statewide levels. The goals of the education and outreach plan are as follows:

1. **The public obtains a general understanding of water resources and their availability and use throughout the state and sees value in water planning.** SCDES will ensure that planning activities are transparent and accessible to the public, and that opportunities for public participation are integrated throughout stakeholder processes.

2. **Water conservation during normal and drought conditions is understood and resources are available to promote efficient use of water.** SCDES will promote the public's understanding of how water is used in the state, the need for water conservation during drought, and the actions individuals, households, and businesses can take to conserve water.

3. **The public and water planning stakeholders are engaged and aware of ongoing water planning activities and plans.** SCDES will conduct targeted outreach to stakeholders including other state agencies, county and municipal governments, councils of governments, businesses, watershed organizations, and conservation groups to raise awareness about the State Water Plan and the importance of the planning process.

4. **The state legislature is engaged and updated on water planning activities.** SCDES will identify opportunities to improve engagement with the legislature so that water planning activities and actions can be routinely evaluated.

State Water Plan Awareness

To increase awareness, targeted outreach to stakeholders will include the following strategies:

1. **Develop appropriate communication plans for important announcements related to the State Water Plan.** These announcement-specific communication plans may include any or all the following communication strategies: media release, press conference, social media announcements, Spotlight posts, billboards, commercials, and others.

2. **Deliver presentations at strategic stakeholder events and conferences.**

3. **Develop a social media toolkit with graphics and suggested text promoting the State Water Plan.**

Public Outreach

SCDES will collaborate with other organizations at local, regional, and statewide levels to promote the public's understanding of how water is used in the state, the need for water conservation during normal and drought conditions, and the actions individuals, households, and businesses can take to conserve water. In collaboration with these public education partners, SCDES may conduct a needs assessment to identify what types of public education are currently available, and where there are gaps in educational content or delivery. Then, SCDES will work with partners to develop and implement strategies to promote public education on these topics. Progress toward this goal will be evaluated annually, and the strategy can be modified as needed for effectiveness.

Legislative Engagement

SCDES will identify opportunities to collaborate with legislative committees and representatives regularly. This may include the Water Resources Legislative Committee (previously referred to as the Surface Water Study Committee). The goal of this engagement is to assist in developing water planning priorities, identify funding opportunities, and understand how water needs can be addressed most effectively and fairly across the state.

9.3.3 Enhanced Data Collection and Modeling

Water planning relies on sufficient data and decision-making tools (e.g., hydrologic models) to make informed planning decisions. To that end, the actions that follow will be considered.

Monitoring Networks

Water planning and decision-making requires reliable data to quantify the condition and availability of water resources. Comprehensive, reliable, long-term monitoring efforts provide critical data to make informed decisions. To that end, all options will be considered to allow the following monitoring networks to be expanded:

- **Statewide Surface Water Monitoring Network** - Surface water monitoring includes measuring stream discharge and river and reservoir stage. Although the state's surface water monitoring network has significantly expanded since the publication of the *South Carolina State Water Plan Second Edition* (2004 Plan), data gaps remain.
- **Statewide Groundwater Monitoring Network** - Groundwater monitoring includes measuring groundwater levels in all aquifers across the state. Although the state's groundwater monitoring network has significantly expanded since the publication of the 2004 Plan, data gaps remain.
- **Statewide Weather/Climate Monitoring Network** - An automated environmental monitoring network of weather and climate stations should be developed, with the goal of installing at least one complete weather station in each county.

Funding options for enhanced data collection may include additional recurring state appropriations, expanding public-private partnerships, and increasing collaboration among state and federal agencies.

Streamflow Gage on the Coosawhatchie River (Courtesy Kari Foy)

Ecological Flow Relationships

The state will consider further supporting and expanding collection of fish and macroinvertebrate data to improve the evaluation of ecological flow relationships. Ecological flow relationships offer a quantitative method to evaluate the impact of varied hydrology on riverine ecosystems. Expanding data collection will aid in characterizing stream types in which the relationship between streamflow and ecology is currently not well known.

Other Models

The state will consider developing a hydrologic model capable of evaluating the impacts (economic and physical) of sedimentation on reservoirs and streams to be used during future iterations of water planning. Such a model can be used to predict the effectiveness of proposed land use management strategies in mitigating the negative impacts of sedimentation. For example, a WaterFALL® model developed by Research Triangle Institute (RTI) was used by the CWWMG to evaluate the impacts of sedimentation in the Catawba-Wateree basin, fulfilling one component of their Integrated Water Resources Plan. Such models can also be used to evaluate the impacts of future land use change on sedimentation and water quantity in general and can be used to prioritize land for the conservation and protection of water resources.

Surface water modeling may need to be extended to and include coastal tidal areas. Because the SWAM model does not include users in tidal areas, new modeling tools or decision support systems are needed to better assess surface water availability in the coastal regions of the Edisto, Lower Savannah-Salkehatchie, Pee Dee, and Santee River basins. This is especially important considering the amount of growth expected in coastal areas, and because of ongoing concerns regarding saltwater intrusion.

9.3.4 Other Planning Considerations

This process, focused on water quantity, did not have the breadth to cover topics such as water quality, saltwater intrusion, water reuse, and more. As such, these topics will be evaluated further for their potential impacts on water resources.

Hydrologic Variability

Although some RBCs examined the possibility of more severe future droughts, this has not been an explicit requirement in the Planning Framework. A major assumption incorporated into the water availability assessments completed by the RBCs is that South Carolina's future hydrologic conditions will be identical to its historic hydrologic conditions, as determined for the period of record of USGS streamflow gages. However, historical evidence suggests South Carolina has experienced much more severe droughts than have occurred in the past 100 years (Pederson et al 2012; Cook et al 2016). SCDES may incorporate different assumptions or scenarios about future hydrologic and climatological conditions in future planning efforts to evaluate the potential impacts of hydrologic variability and more severe droughts on future water availability.

Columbia Canal

Water Reuse

The state will continue to evaluate water reuse policy in South Carolina and may consider new regulatory programs necessary to implement this policy. The state will continue to participate with the WateReuse Association to evaluate laws, policy, funding, and public acceptance of water reuse. Collaboration with utilities, businesses, government agencies, and nongovernmental organizations on using water reuse should continue. Lessons learned from other states will be gathered and used to help guide future policy and planning efforts.

Water Quality Considerations

Water quantity is not the only consideration for water planning; water must also be of adequate quality for beneficial use. Future iterations of river basin planning should incorporate the water quality issues experienced throughout the state. Priority topics to address include sedimentation, saltwater intrusion, aquatic health, and source water protection.

In addition to directly incorporating water quality into future planning activities, SCDES' Bureau of Water has outlined some projects they may consider in the coming years.

These projects may include the following:

- In partnership with the South Carolina Department of Natural Resources, review and evaluate the South Carolina Estuarine and Coastal Assessment Program.
- Coordinate the efforts of the river basin planning process in consultation with the nonpoint source watershed program.
- Review the baseline ambient surface water monitoring program to consider additional locations to address specific and evolving needs.
- Temporarily reinstate the ambient groundwater quality monitoring program to update the dataset.
- Increase the number of locations and parameters of macroinvertebrate and fish monitoring.

Lake Murray Dam spillway gates

9.3.5 Funding

SCDES is committed to working with all water resource stakeholders to identify funding opportunities for continued water planning and implementation of strategies and recommendations. All options for funding should be explored including federal, private, state, grant opportunities, and public-private partnerships.

Federal Funding

Existing federal funding sources may be leveraged to promote implementation. These sources offer funding to support eligible water and wastewater infrastructure projects including those related to drought prevention, reduction, and mitigation. Other funding to support drought mitigation efforts may also be available. Numerous organizations offer programs for farmers and ranchers to reduce risk from drought or to restore land impacted by drought. The Farm Bill has authorized several programs to provide relief to farms and ranches experiencing drought, and other programs provide aid to farm operations that implement water conservation measures. A summary of these programs is provided in Table 1 of Appendix D.

Private Funding

Private funding options may offer unique opportunities to implement certain water management strategies identified in the River Basin Plans. For example, water replenishment programs offered by corporations aim to restore more water to the environment than they consume, especially in areas where their operations use water. Other foundations and non-profits may also have grant funding opportunities to explore. There may also be opportunities for private entities to leverage public funds in public-private partnerships.

State Funding and Support of Grant Opportunities

South Carolina legislature could also consider developing a dedicated funding source for implementing water management strategies. Numerous other states have developed funding programs, which serve as examples. Examples of other states' water funding programs are summarized in Appendix D.

Broad River (courtesy Bill Stangler)