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Basin Plan

## Saluda River Basin Council Vision: *A resilient and sustainably managed Saluda River Basin that balances human and ecological needs.*



SALUDA RIVER BASIN PLAN

# Saluda River Basin Plan SUMMARY SHEET

## River Basin Planning Process

The Saluda River Basin Plan (Plan) is one of eight river basin plans under development for South Carolina. Once completed, the plans will converge into an updated South Carolina State Water Plan. The Plan includes data, analysis, and water management strategies to guide water resource development in the basin for a planning horizon of 50 years. The Plan was developed over a two-year period by the Saluda River Basin Council (RBC), a group of vetted volunteer stakeholders, representing a cross section of water interests, and organized by the South Carolina Department of Natural Resources (SCDNR) in 2022.



## Composition of the Saluda River Basin Council.

Numbers in parentheses indicate RBC member representation at the time the plan was approved.

## Current and Future Water Use

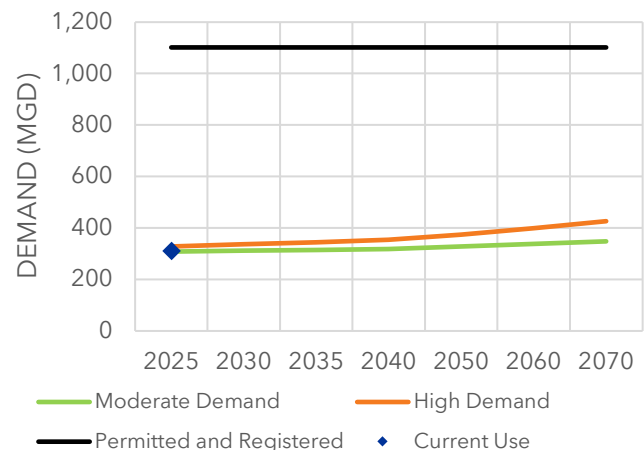
Current withdrawals from permitted and registered users in the Saluda River basin total approximately 312 million gallons per day (MGD) on average. Of this total, 311 MGD comes from surface water sources and less than 1 MGD is from groundwater. About 53 MGD (17 percent) of the water is consumptively used and 259 MGD (83 percent) is returned to streams and rivers after use. The current use of 311 MGD represents only 28.4% of the total permitted and registered surface water amount (1,097 MGD) allowable for withdrawal in the basin. Most of the surface water used in the basin is for thermoelectric energy and public water supply purposes, as shown in the following:

- Thermoelectric\*, 171.2 MGD (54.9%)
- Public water supply, 112.0 MGD (35.9%)
- Manufacturing, 24.9 MGD, (8.0%)

- Golf course irrigation, 0.6 MGD (0.2%)
- Agriculture, 3.1 MGD (1.0%)
- Mining, 0.1 MGD (0.03%)

\*Note: 96% (163.7 MGD) of the water withdrawn for thermoelectric cooling is returned to the river or lake after use.

To identify whether surface water supplies are likely to meet demands up to 50 years in the future, the Saluda RBC investigated two planning scenarios that covered a range of surface water demand projections: (1) a *Moderate Demand Scenario*, which assumed normal weather conditions (average irrigation) and moderate growth projections, and (2) a *High Demand Scenario* which assumed hot and dry weather (high irrigation) and high population and economic growth. The *High Demand Scenario* is considered a conservative estimate of future demand and was used as the basis for selecting water management strategies. It accounts for 39 percent of the currently permitted and registered amount of surface water in the basin. Both projections, which include surface water and groundwater are shown below:



## Water Demand Projections: Saluda River Basin

### Key Findings

The Saluda RBC used a surface water quantity model to evaluate whether existing surface water supplies were sufficient to meet projected water demands through 2070. Some of the most significant findings include:

- Current Water Use:** Modeling suggests a low risk of water supply shortages based on current water demands.
- Growth Projection Impacts:** Modeling also suggests low probability of shortages under moderate and high economic growth assumptions through 2070.
- Overall allocation:** There may not always be enough water in every stream reach to satisfy all demands if all users withdrew their fully Permitted and Registered amount 100% of the time. Many agricultural users and even some water suppliers would likely experience shortages, and



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average streamflow would decrease. While this scenario is unlikely, it is allowable within state law.

- **Ecological Flow Metrics:** Analysis indicated low ecological risk for fish species based on flow for the 2070 *High Demand Scenario* projections. However, these findings only apply to wadable streams, do not rule out other ecological risks, and do not apply to streams in the most northern part of the basin within the Blue Ridge.
- **Reservoir Safe Yield:** All reservoirs in the basin were found to have sufficient reliability through 2070 to meet the *High Demand Scenario* projections, with the exception of Lake Rabon, which is one of multiple sources for Laurens Commission of Public Works.
- **If Future Droughts Worsen:** Lake Murray, Lake Greenwood, Table Rock and North Saluda Reservoirs (with help from Lake Keowee) would remain reliable through several hypothetical droughts more severe than historical conditions. Lake Rabon is more vulnerable.

With the exception of the last finding above, these findings are based on historical hydrology. Future phases of planning may evaluate future climate risks.

### Key Recommendations

The RBC developed a range of recommendations related to water management, planning, data collection, future studies, regulation, legislation, policy, and funding. Some of the key recommendations are summarized below.

#### Water Management Strategy Recommendations

- **Supply-side Strategies:** The RBC did not recommend any new supply management strategies because of the identified low risk of water shortages that could not be managed with existing storage and interbasin transfers.
- **Demand-side Strategies:** The RBC recommended a toolbox of municipal and agricultural demand management strategies, including public education, conservation pricing structures, leak detection and water loss control programs, soil management, cover cropping, smart irrigation, and others.
- **Adaptive Management:** Future uncertainties should not be ignored (climate, population, industrial growth, emerging contaminants, etc.). The RBC recognized that an adaptive approach will be necessary to avoid over-investment now and ward off under-investment if risks to water availability are recognized in time.

### Technical Recommendations

- The RBC identified and recommended numerous strategies to reduce sediment loading to reservoirs and waterways, including streambank restoration, riparian buffers, and green infrastructure.

- Future modeling should incorporate scenarios that further examine uncertainties, such as changes in rainfall and hydrology, alternative population growth scenarios, and potential impacts of future development on runoff.
- Future planning efforts should include evaluation of surface water quality and trends, including nutrient loading and sedimentation.
- The legislature should fund and maintain a mesoscale network of weather and climate monitoring stations throughout the state to improve planning and response.

### Regulatory, Legislative, and Policy Recommendations

- The South Carolina Surface Water Withdrawal, Permitting, Use, and Reporting Act should allow for reasonable use criteria to be applied to all new surface water withdrawals, like those that currently exist for groundwater withdrawals.
- Current laws that allow for regulation of water use should be improved so that they are enforceable and effective.
- The South Carolina Department of Environmental Services (SCDES) should review minimum instream flow standards to ensure they are based on best available science to adequately protect designated uses and recognize regional differences.
- Water utilities should consider collaboration and partnerships opportunities.

### Planning Process Recommendations

- SCDES should organize annual coordination meetings of all RBCs.
- SCDES should form an Interbasin River Council with members from the Saluda, Broad, and Upper Savannah RBCs.
- More outreach and education are needed to increase awareness around watershed-based planning.

### Call to Action

The Saluda RBC developed six objectives to guide implementation of the River Basin Plan's strategies and recommendations over the next 5 years. They are intended to improve water use efficiency, protect water resources, improve drought management, and promote engagement in the water planning process. Each objective is linked to actions and strategies that rely on support from state, local, and federal agencies, water users, conservation groups, and other stakeholders. Critical to implementation is future funding. The RBC recommended that the Legislature fund, and SCDES establish and manage, a grant program to help support the implementation of each RBC's River Basin Plan.

Scan the QR code at the top of the page to access the Saluda River Basin Plan and Executive Summary.