South Carolina
Surface-Water Quantity Models

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River Basin Delineation

Surface-water quantity models will be developed for each basin, the same basins used by DHEC for doing water-quality assessments and for managing interbasin transfers of water.
• CDM Smith, Inc. was contracted to develop the models using its *Simplified Water Allocation Model* (SWAM) modeling tool

• Clemson University will facilitate the stakeholder engagement process
Purpose of the Models

• South Carolina has limited scientific information about the availability of our water supplies, and future demands on those supplies

• Surface water models are necessary to support SCDHEC’s new surface water permitting program and for SCDNR’s update of the State Water Plan
Potential Uses

- **Permitting**
  - Evaluate withdrawal permits and interbasin transfers
  - Evaluate the impacts of future withdrawals on instream flow needs and other users

- **Water Planning**
  - Determine surface-water availability
  - Predict where and when water shortages might occur
  - Test alternative water-management strategies
  - Help resolve water disputes
  - Support development of drought management plans
Step 1...

**Surface-water quantity models**

Development of the surface-water models is just the first step in the development of regional and statewide water plans.
Step 2...

Groundwater flow models

Groundwater models will be used to predict water-level declines, recharge rates, and impacts of groundwater withdrawals on aquifers, streamflows, and on other users in the basin.
Step 3...

Water-demand forecasts

Water-demand forecasts will be made for agriculture, energy, industry, and public-supply at 5-10 year intervals over a 50-year planning period.
Step 4...
Regional water plans
Using the models and forecasts, and with oversight from State agencies, stakeholders will begin the process of developing regional water plans for each basin.

- Determine if water deficits will occur
- Evaluate management strategies
- Water conservation and drought management recommendations
Step 5…

State water plan

Upon completion of the regional water plans, the State water plan will be updated by DNR.

- Assess the overall condition of water resources in the State
- Evaluate statewide trends in water use and availability
- Offer water-resource policy and program recommendations
- Introduce innovative practices
Schedule for Surface-Water Models

- **Pilot Model** of the Saluda River Basin
- Other models to follow, with order based on data availability
- 2-year schedule requires that groups of models be constructed in parallel