

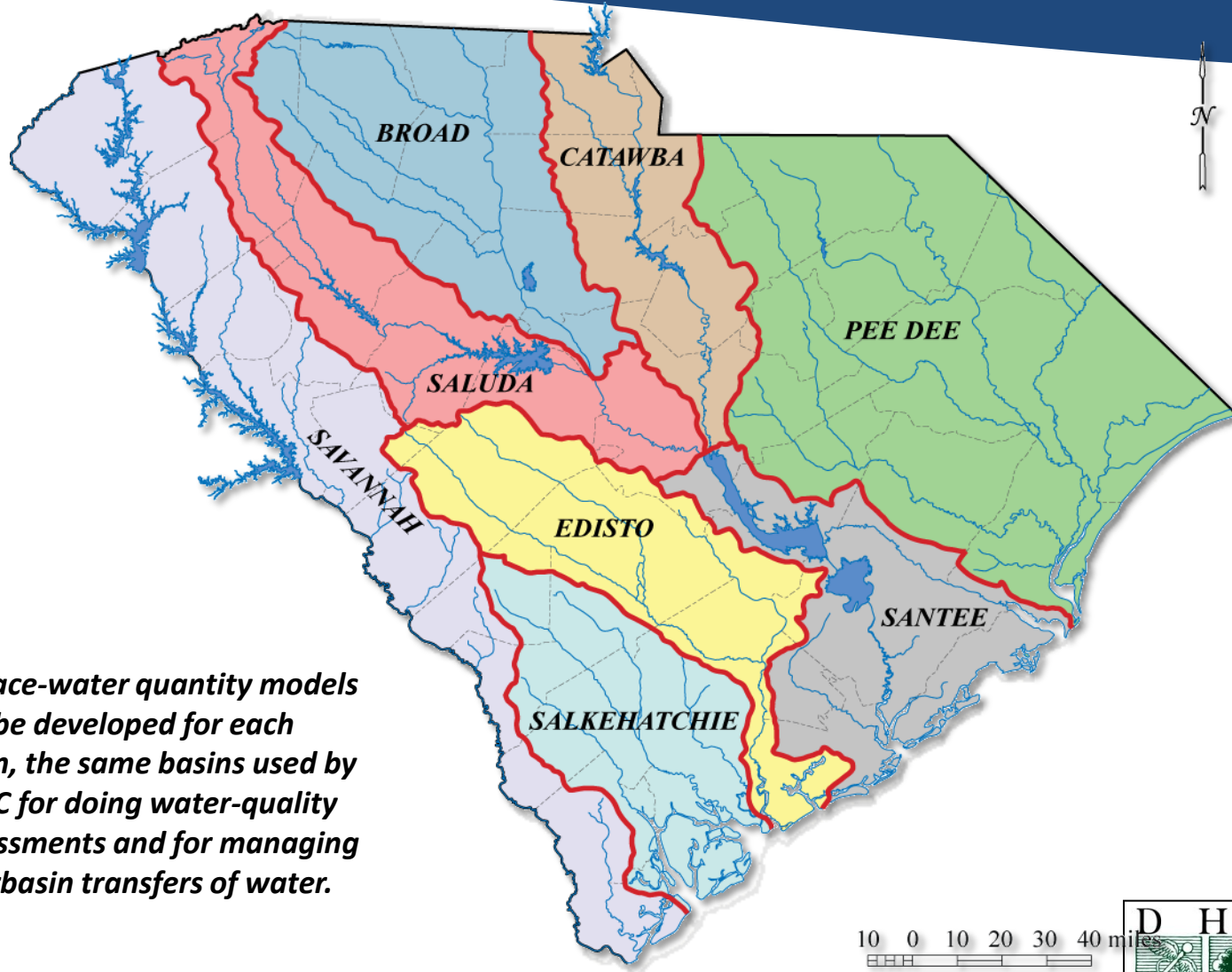


# South Carolina Surface-Water Quantity Models

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**SCDNR**

# 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.*

10 0 10 20 30 40 miles

- CDM Smith, Inc. was contracted to develop the models using its *Simplified Water Allocation Model* (SWAM) modeling tool

**CDM  
Smith**

- Clemson University will facilitate the stakeholder engagement process

**CLEMSON<sup>®</sup>**  
U N I V E R S I T Y

# 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

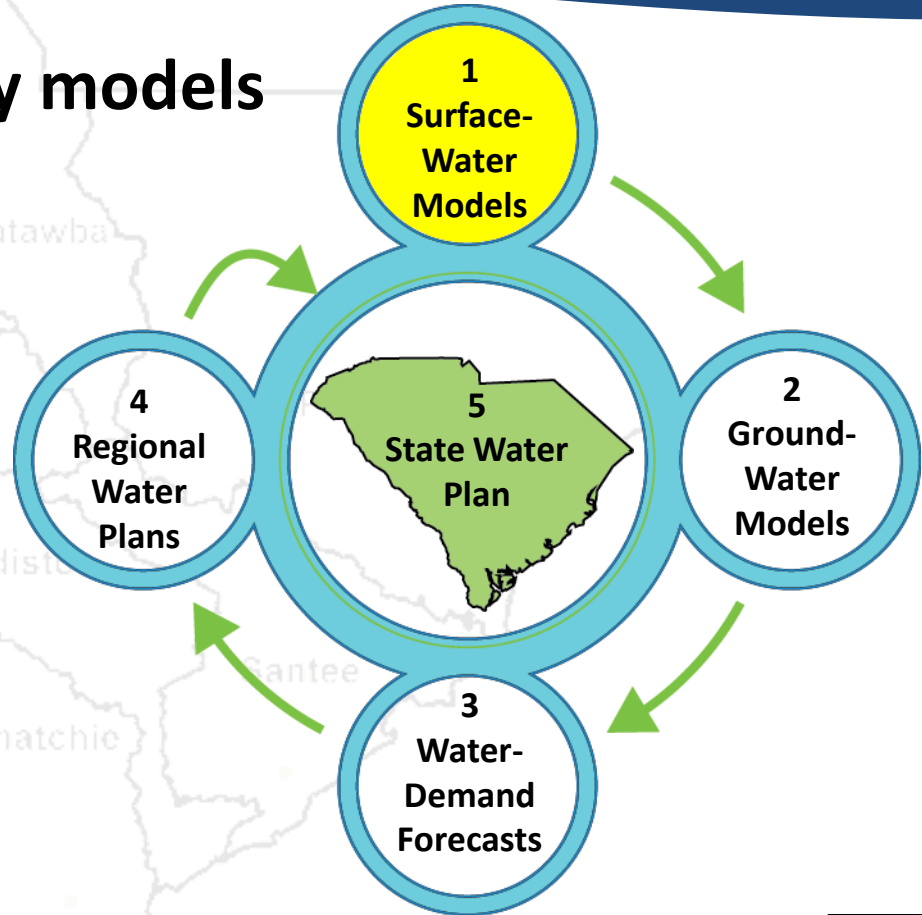
- **Permitting**
  - Evaluate withdrawal permits and interbasin transfers
  - Evaluate the impacts of future withdrawals on instream flow needs and other users
- **Water Planning**
  - Determine surface-water availability
  - Predict where and when water shortages might occur
  - Test alternative water-management strategies
  - Help resolve water disputes
  - Support development of drought management plans

# Five-Step Process for Water Planning

## 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.

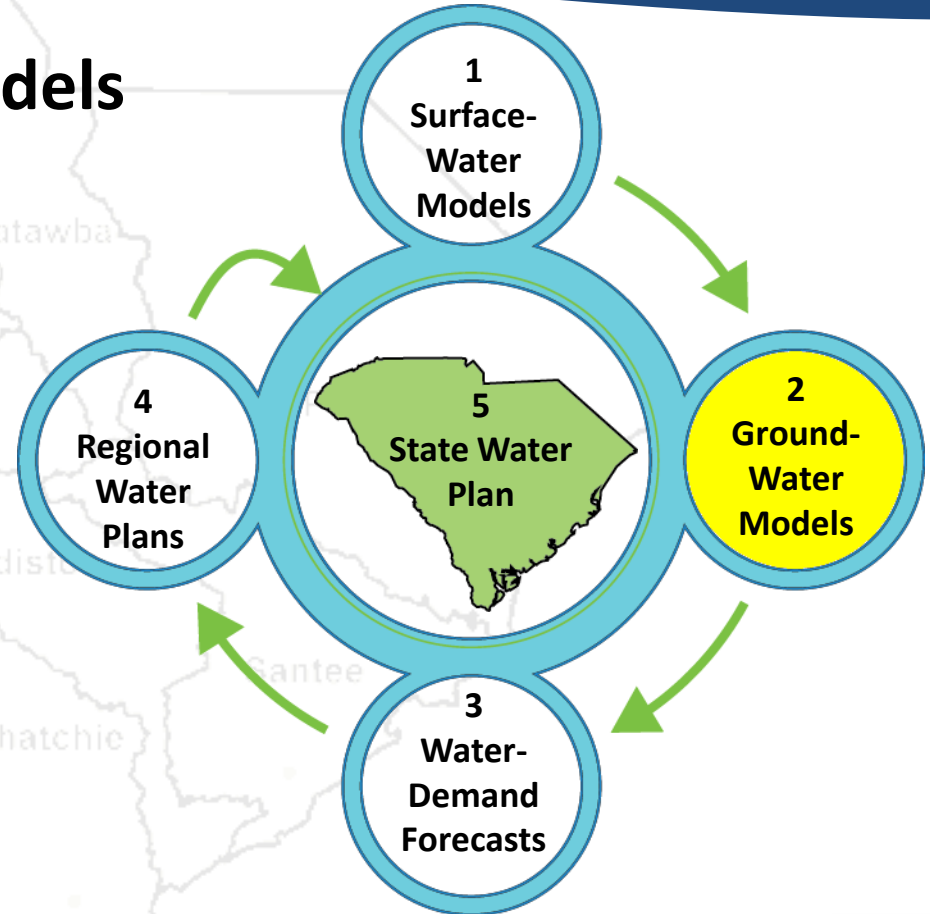


# Five-Step Process for Water Planning

## 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.

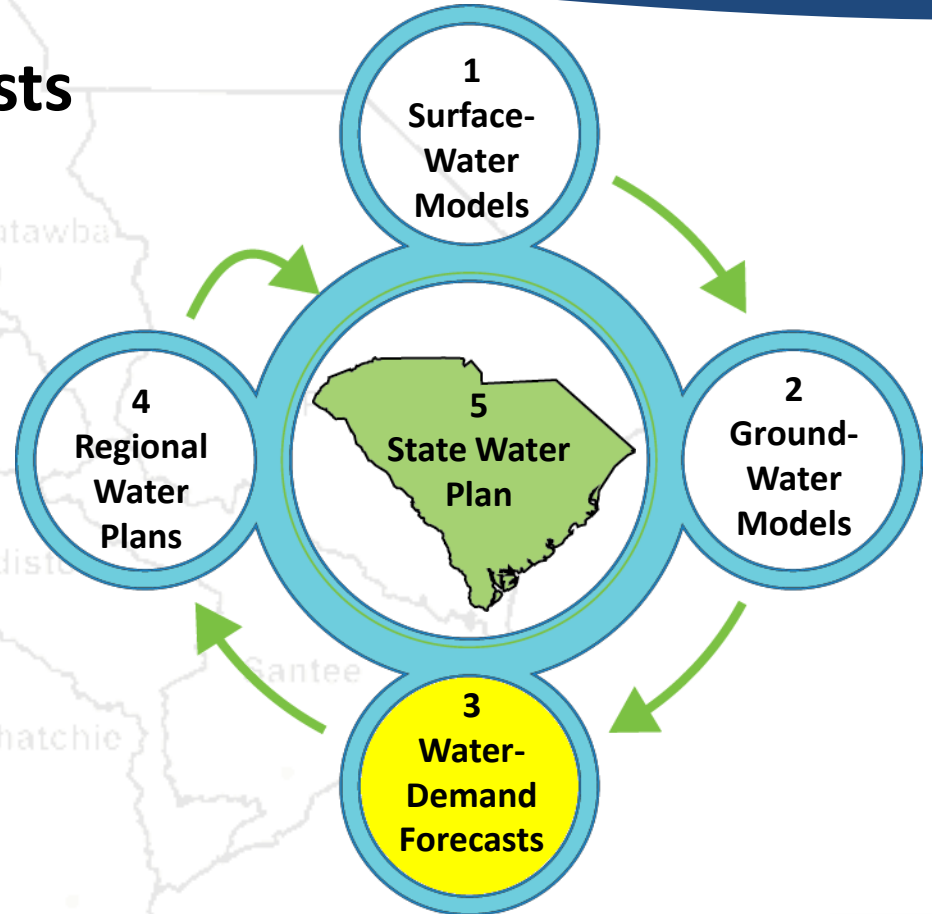


# Five-Step Process for Water Planning

## 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.





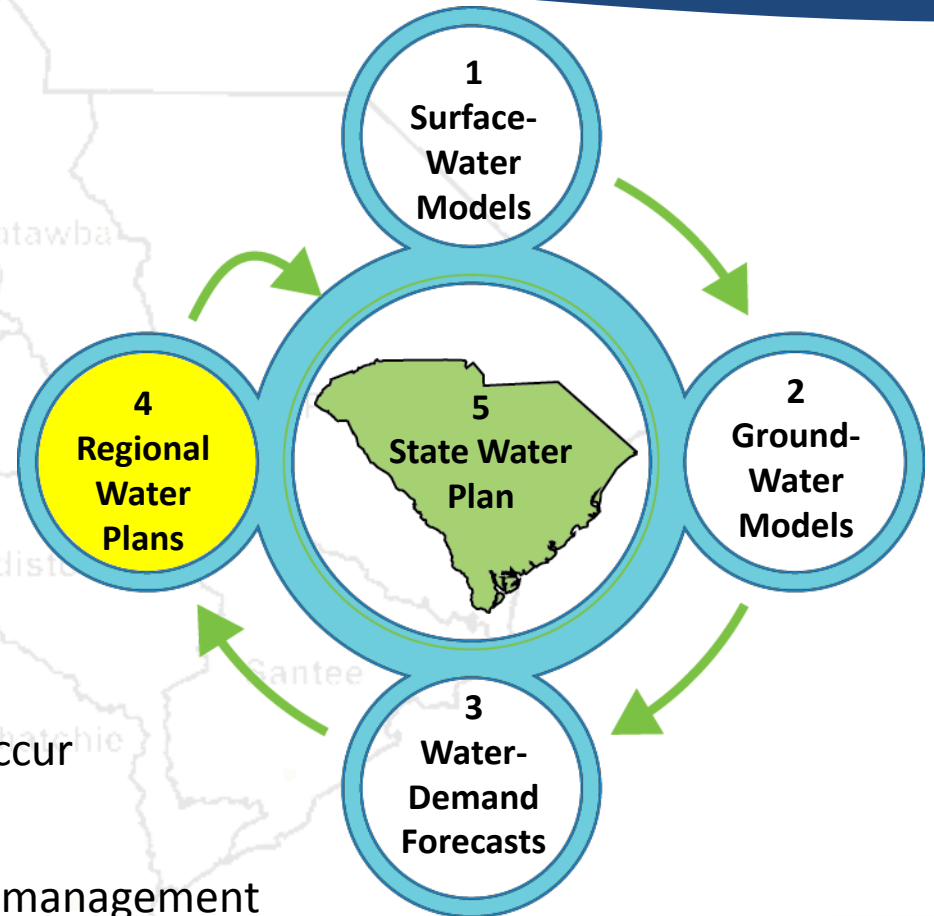
# Five-Step Process for Water Planning

## 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



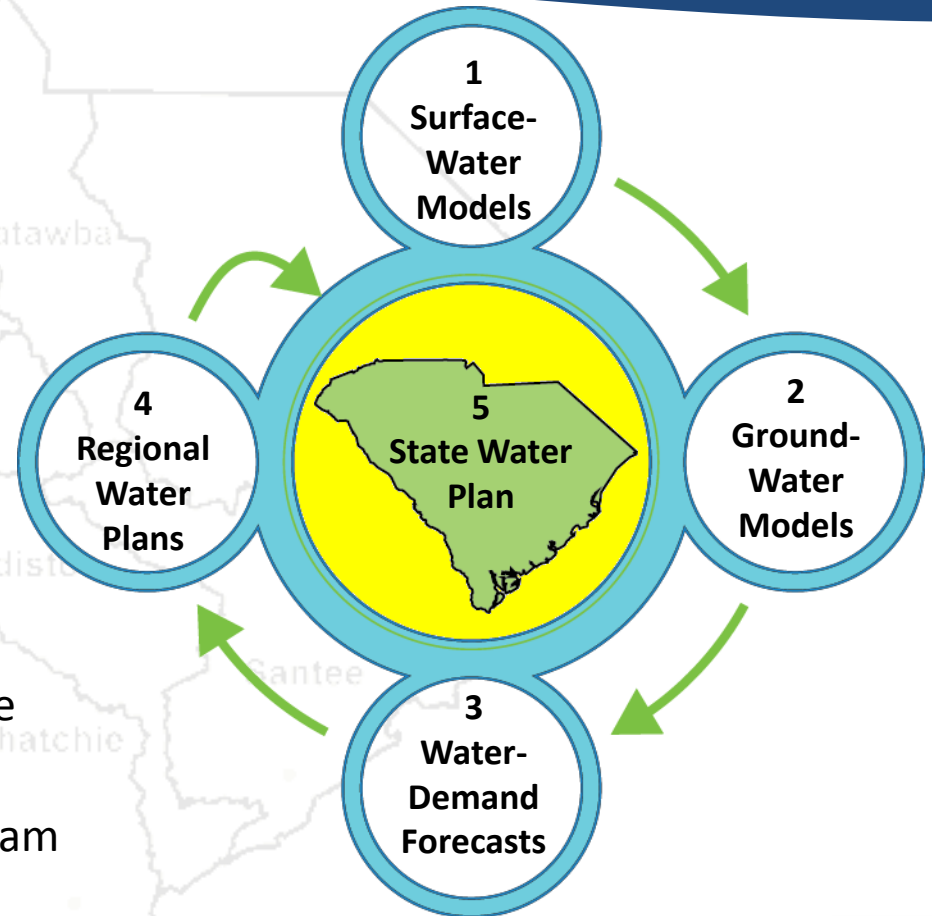
# Five-Step Process for Water Planning

## 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

