Groundwater Planning and Availability in South Carolina

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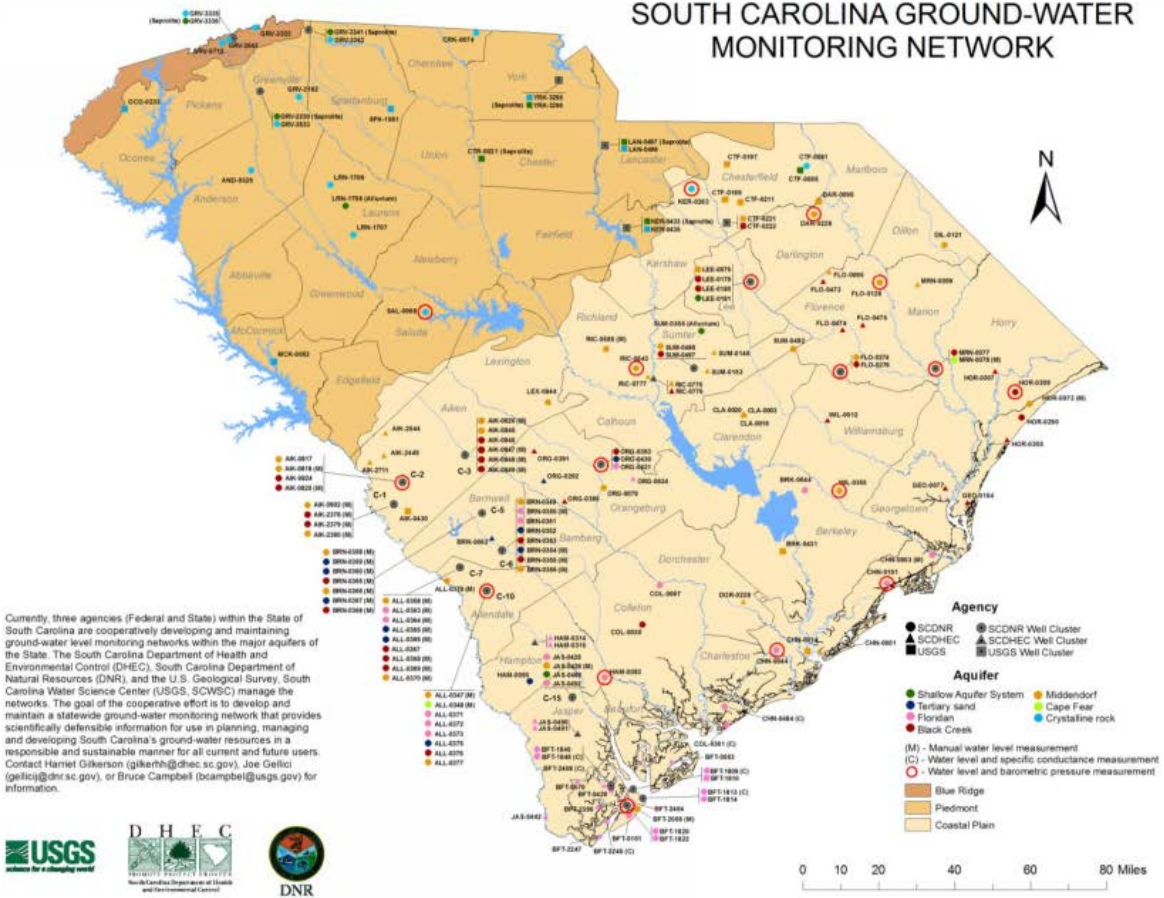
Mount Pleasant Waterworks

MOUNT PLEASANT WATERWORKS
CLEAN WATER

BEST PLACES TO WORK
in SOUTH CAROLINA
2017

SOUTH CAROLINA GROUND-WATER MONITORING NETWORK



Currently, three agencies (Federal and State) within the State of South Carolina are cooperatively developing and maintaining ground-water level monitoring networks within the major aquifers of the State. The South Carolina Department of Health and Environmental Control (DHEC), South Carolina Department of Natural Resources (DNR), and the U.S. Geological Survey, South Carolina Water Science Center (USGS, SCWSC) manage the networks. The goal of the cooperative effort is to develop and maintain a statewide ground-water monitoring network that provides scientifically defensible information for use in planning, managing and developing South Carolina's ground-water resources in a responsible and sustainable manner for all current and future users. Contact Harriet Gilkerson (gilkerhh@dhec.sc.gov), Joe Gellici (gellicij@dnr.sc.gov), or Bruce Campbell (bcampbel@usgs.gov) for information.

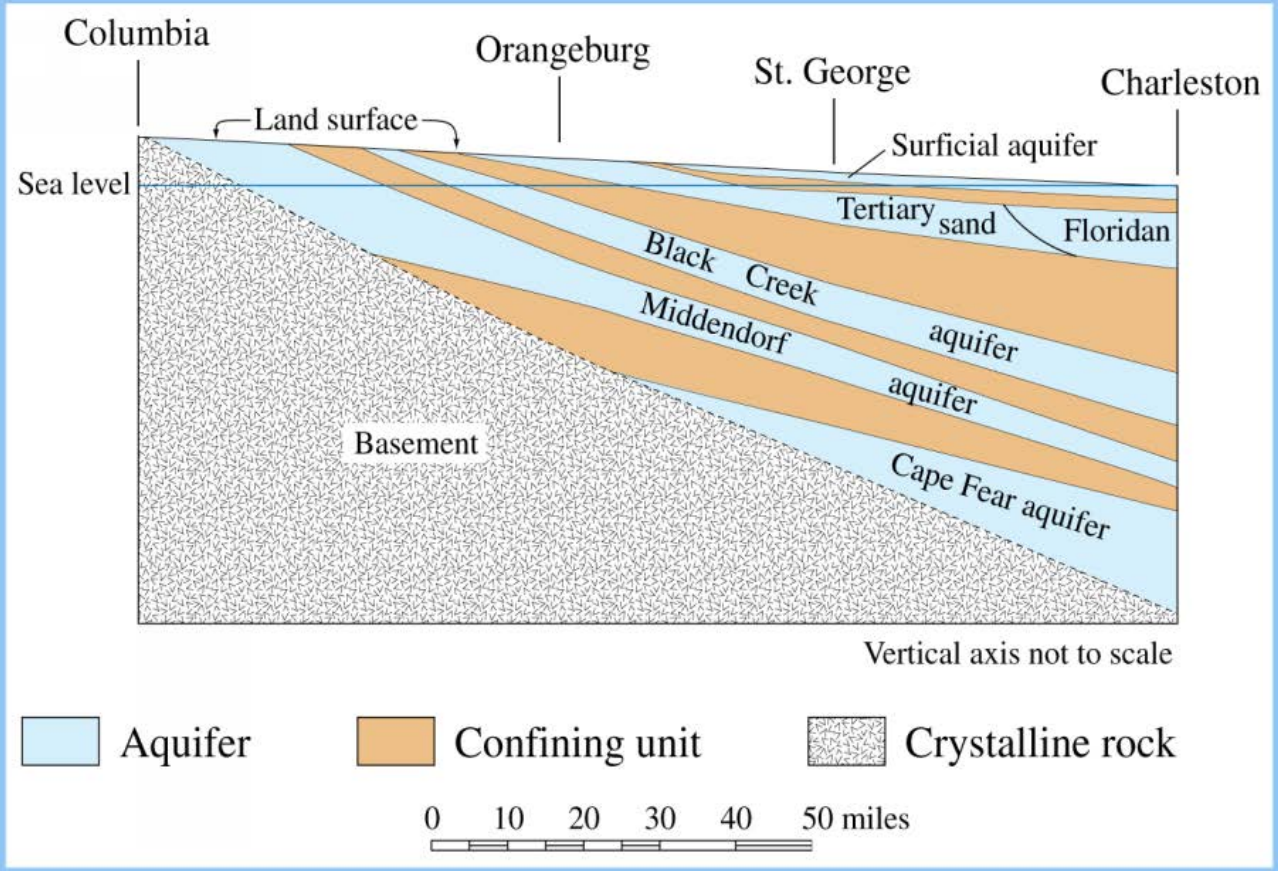
USGS science for a changing world

DHEC

DNR

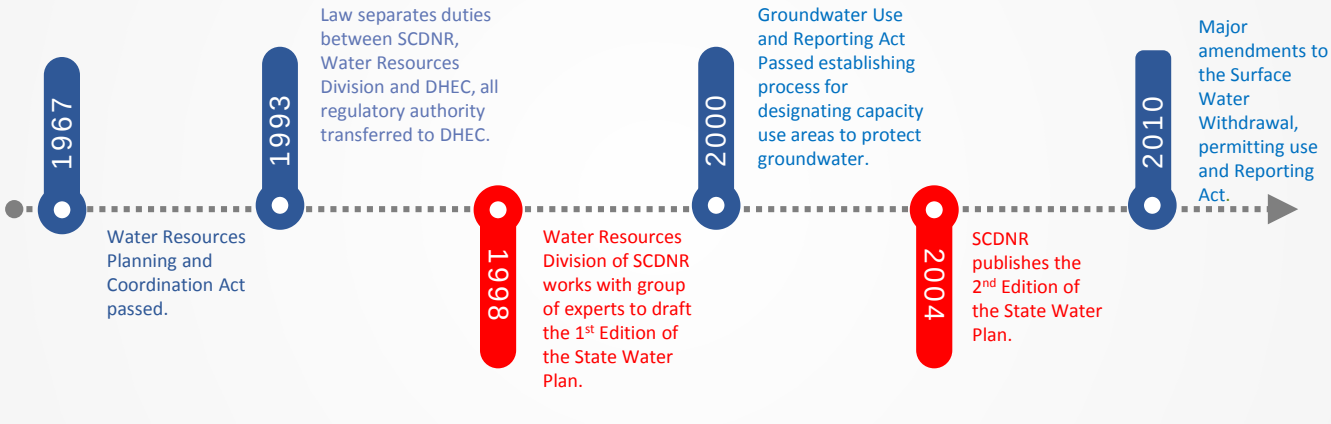
Map prepared by the Land, Water & Conservation Division of the South Carolina Department of Natural Resources, September 2012.

Principal Coastal Plain Aquifers



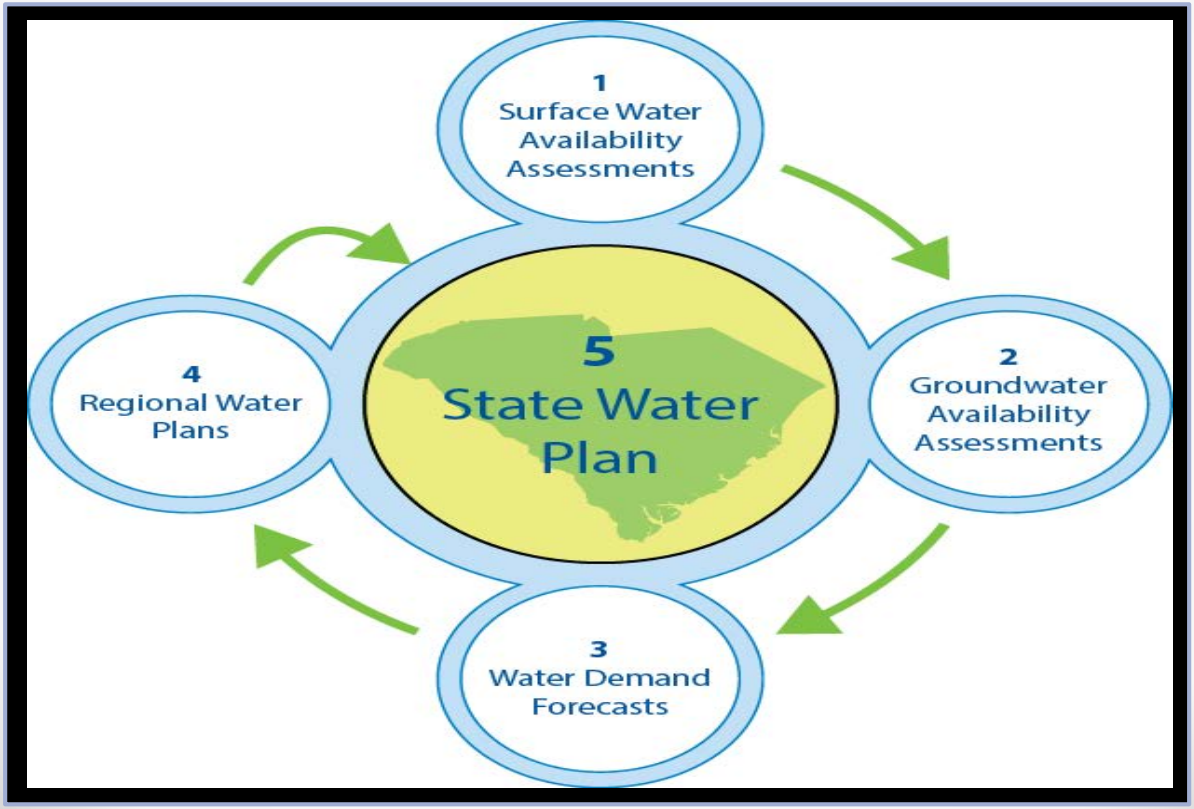
Summary of Laws and Plans

Affecting Groundwater Use



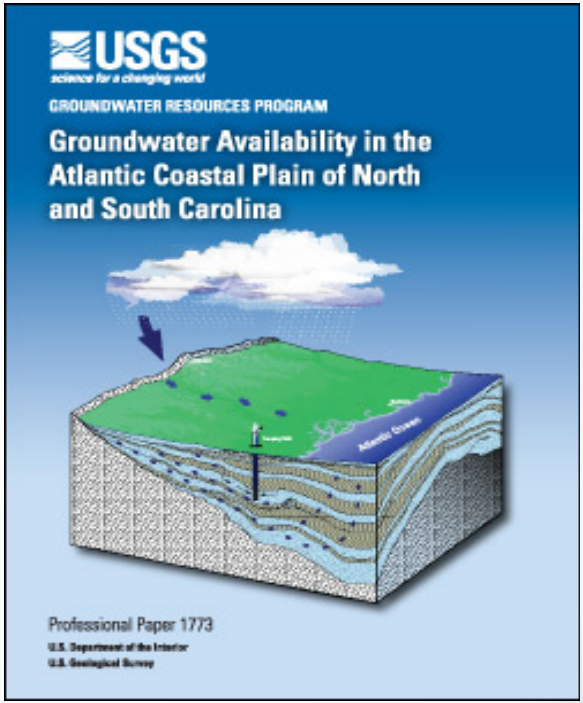
State Water Plan

Complete 2022- 2023



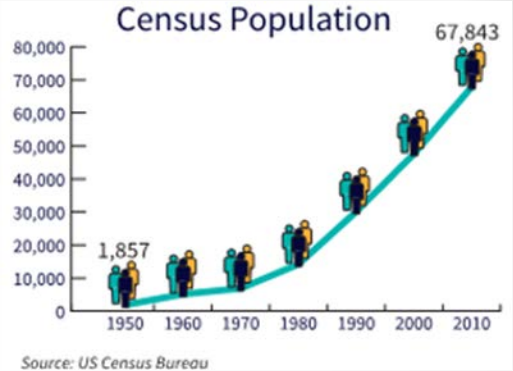
USGS Groundwater Availability Assessment

- 2010 Paper
- 2019 Update to Groundwater Availability Assessment for SCDNR



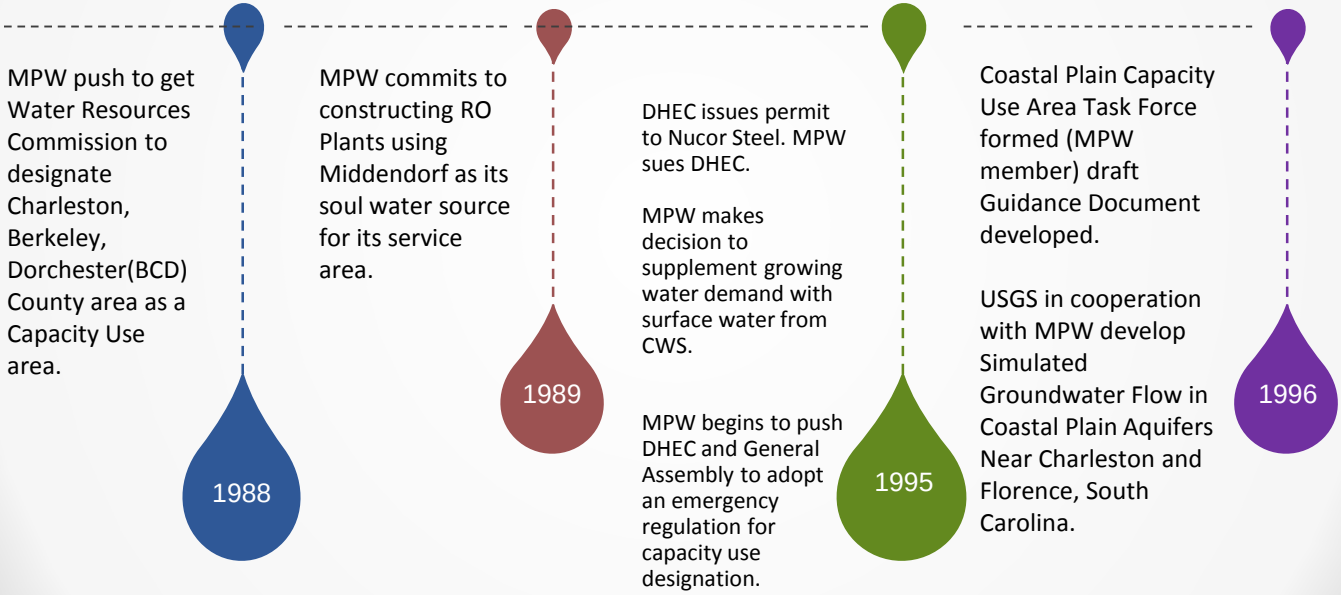
Mount Pleasant Waterworks

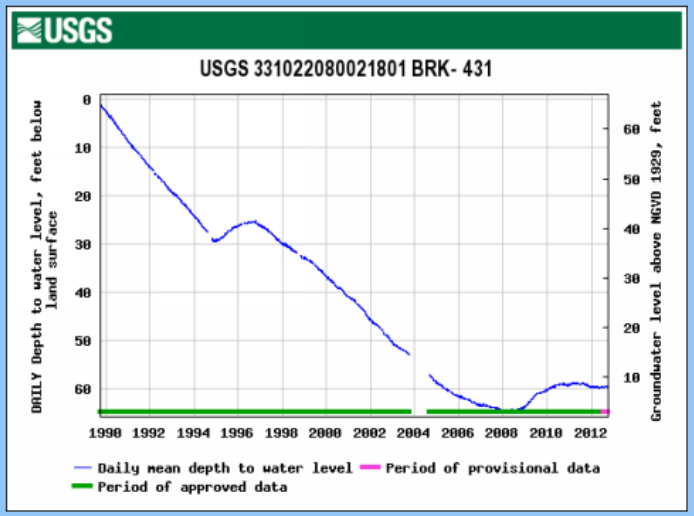
Ninth fastest growing community east of the Mississippi with current estimated population of >85K

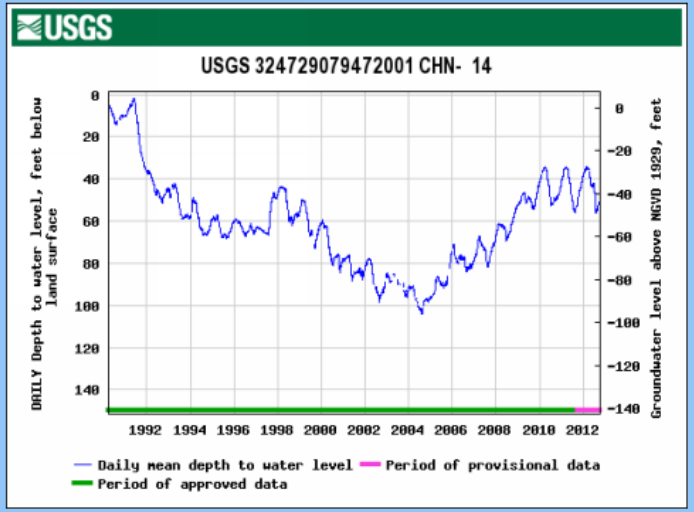


MPW has two water sources, groundwater from the Middendorf Aquifer and purchased water from Charleston Water System.

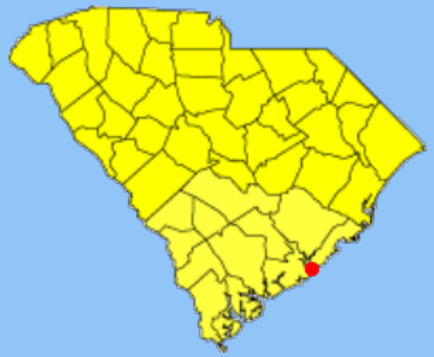
MPW works to sustain the Middendorf Aquifer







Some recovery after water users began supplementing ground water with surface water



MPW works to sustain the Middendorf Aquifer

Twelve years after MPW initial request, Representative Chip Campsen gets Groundwater Use and Reporting Act passed. DHEC proceeds with process for capacity use area designation

2000

SCDHEC Board declares BCD counties as the "Trident Capacity Use Area."

2002

USGS in cooperation with MPW updated the 1996 groundwater flow model. Predictive water-management scenarios show that continued water use in the Charleston and Berkeley County will continue the overall decline in water levels in the area.

MPW commits to buy more water from CWS.

2007

Capacity Use Permitting Requires Groundwater Management Plans

SCDHEC issued Groundwater Withdrawal Permit to a new industrial user for 500,000 gallons per day, Permit expires on October 21, 2018.

2015

New industrial user applied to SCDHEC for a modification to the existing permit requesting an increase from 0.5 mgd to 1.5 mgd.

MPW entered into Joint Funding Agreement with USGS for the Simulation of Groundwater flow of the Middendorf Aquifer near Mount Pleasant, SC.

MPW Letter to SCDHEC regarding new industrial user application reminding SCDHEC of the requirement to establish a Groundwater Management Plan before permits could be issued or modified.

2016

Groundwater Management Plans

February 2017: SCDHEC announces schedule to develop the groundwater management plan for the Trident Capacity Use Area.

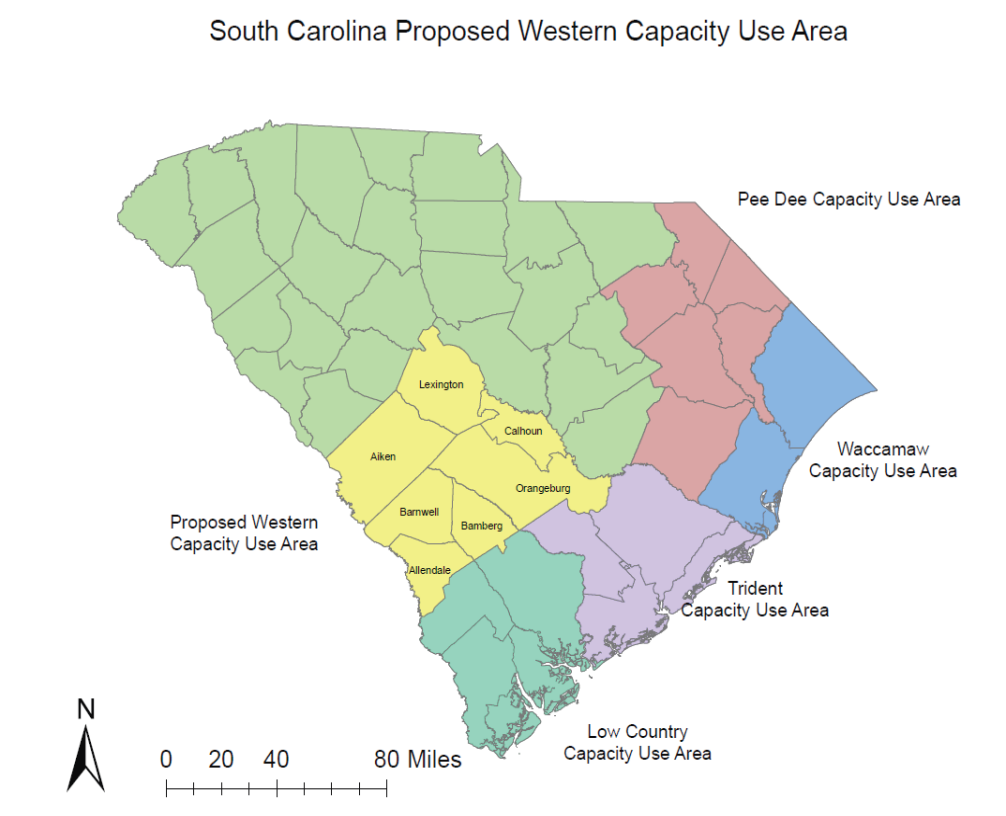
May 11, 2017: SCDHEC Board approves Groundwater Management Plan for the Trident Capacity Use Area.

June 22, 2017: first Groundwater Technical Advisory Committee reviews 3 withdrawal permits in the Trident Capacity Use Area

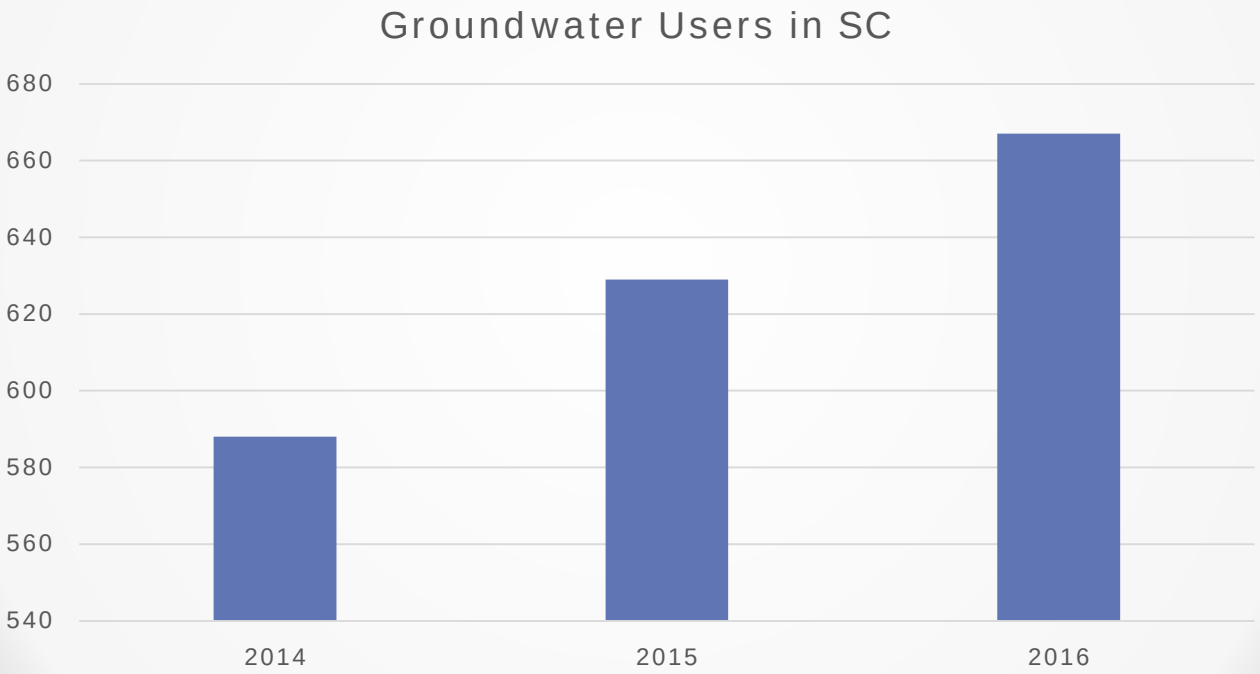
July – August , 2017 SCDHEC proceeds with public meetings about declaring 8 western counties a Capacity Use Area.

September 7, 2017: SCDHEC Board approves Groundwater Management Plans for the Lowcountry, Pee Dee and Waccamaw Capacity Use Areas.

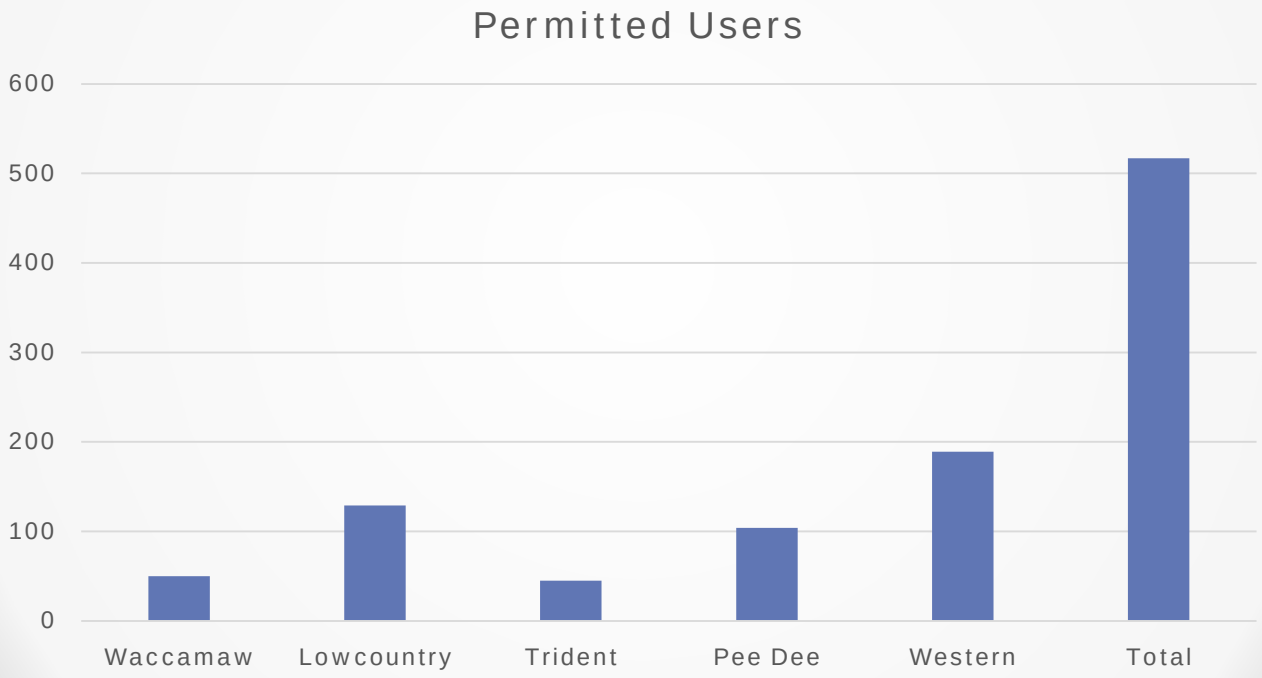
Capacity Use Areas



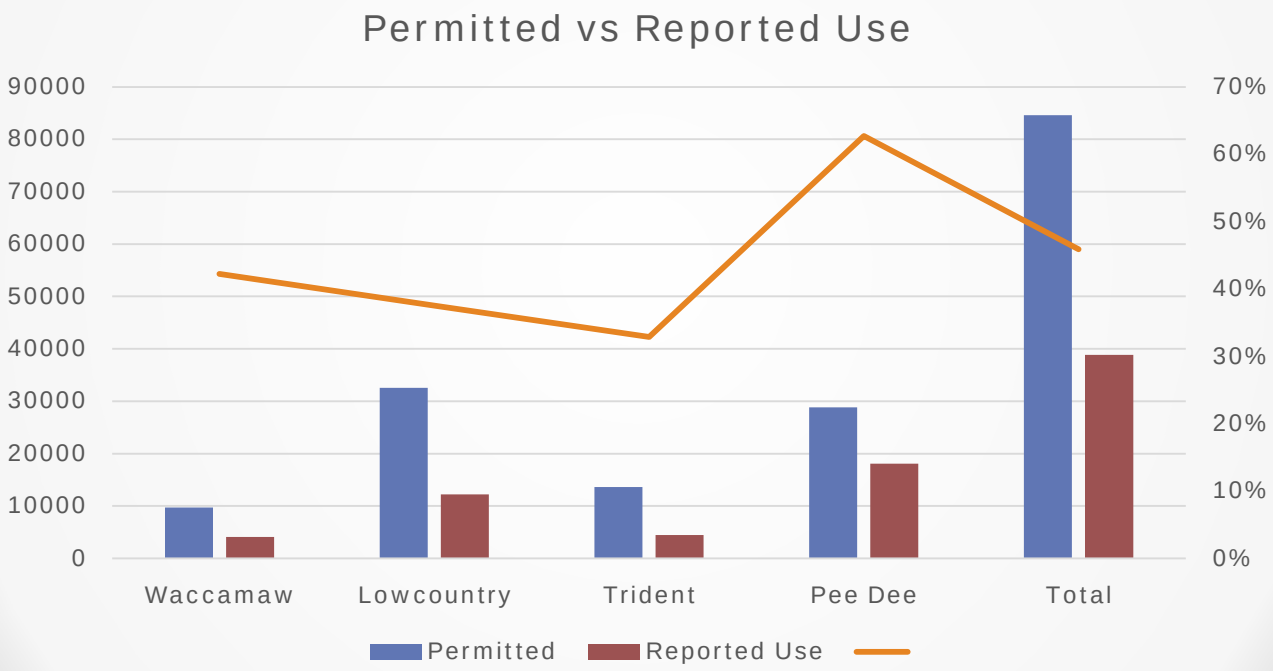
13% Increase in Groundwater Users



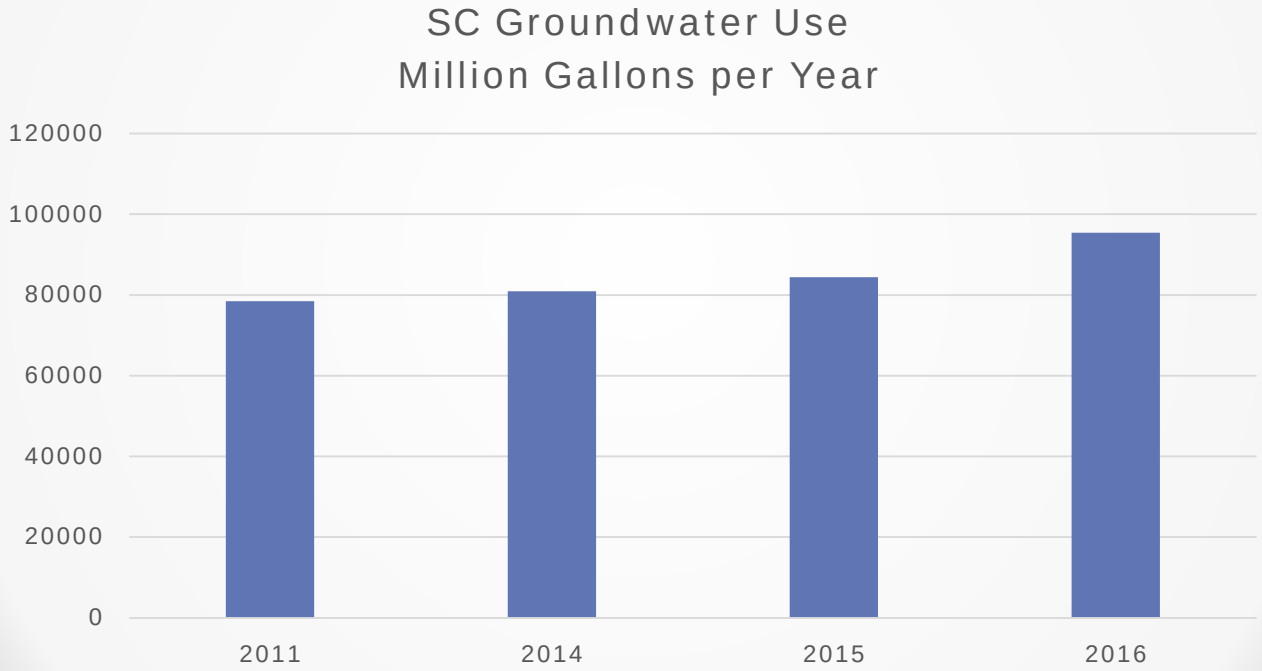
Permitted Groundwater Users in Capacity Use Areas



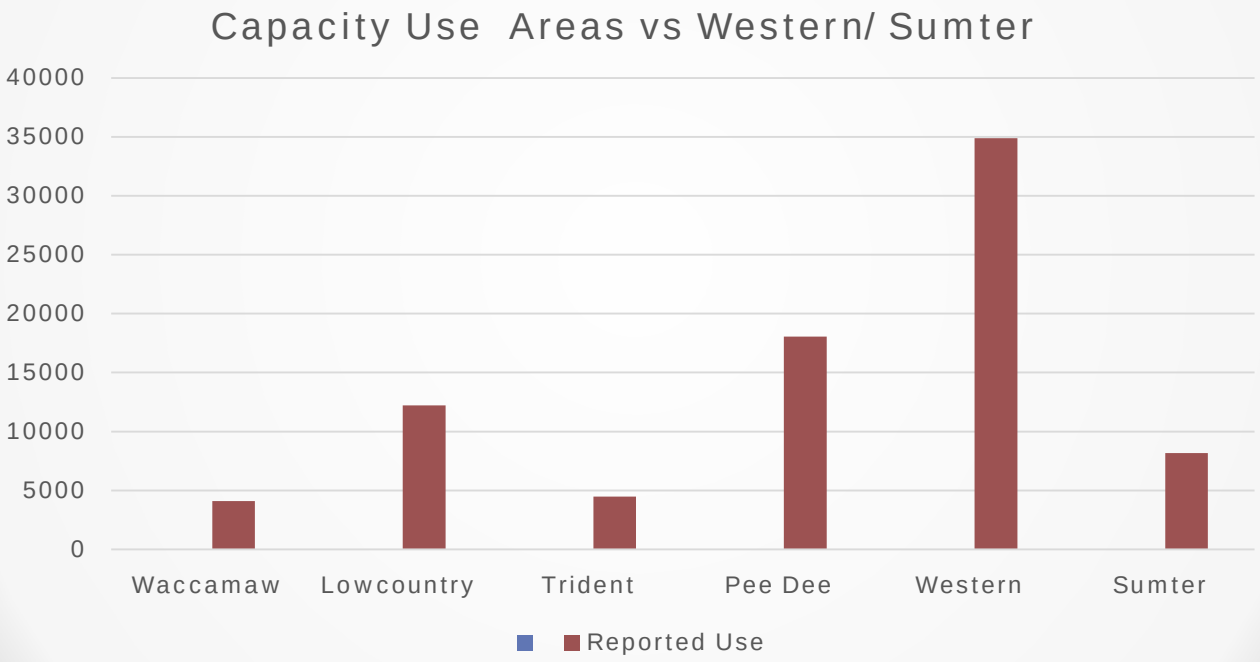
Permitted vs Reported Use



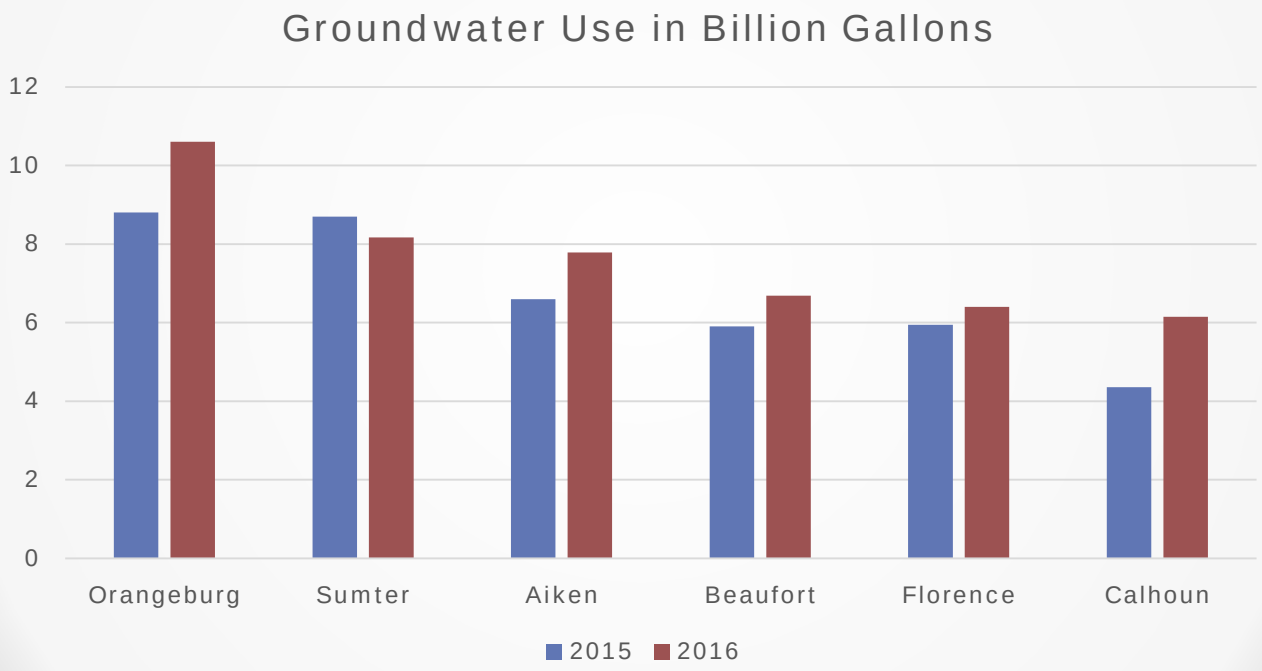
17% Increase in Groundwater Use



Reported Use



Largest Groundwater Users



Groundwater Use in SC

Total Water Use in SC

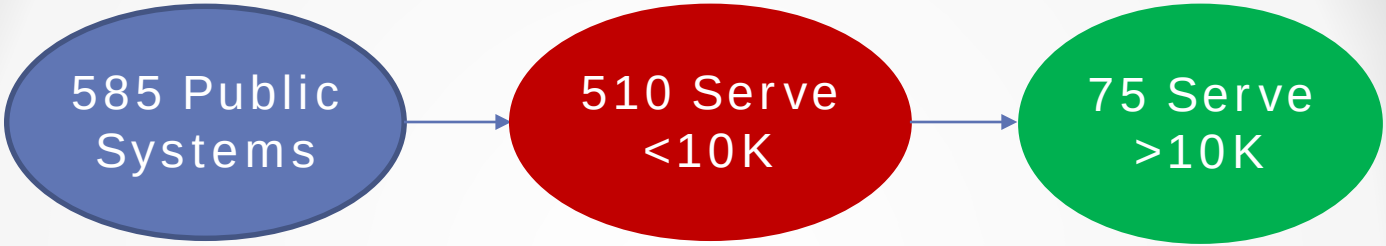
Ground Water = 22%

- 4.961 Million People in SC
- 3.785 (75%) Served by Community Water System

665 Groundwater Systems

180 (27%) are public water supplies serving over 1 million people

Public Water Supply = 60% Ground Water Use



GROWTH = pressure (especially smaller water systems).

WATER SYSTEM PLANS = total water resource management plans to meet long range water demand.

WATER INDUSTRY = water supply development.

Future of Groundwater Use in SC

- Most all aquifers are experiencing water level declines.
- Groundwater flow models should help predict sustainable drawdown levels.
- Groundwater flow models should be run using Permitted Withdrawal Totals.
- SC will need an allocation framework/process soon.
- Capacity use areas will have Groundwater Management Plans updated every 5 years.

Future of Groundwater Use in SC

- Public water systems and local water users should get more involved in groundwater withdrawal permitting in capacity use areas through TACs review process.
- State should designate the entire Coastal Plain as Capacity Use (Sumter).
- State Water Plan should provide clearer picture of groundwater availability for future.
- State Water Plan should be incorporated into a SC Strategic Economic and Resource Development Plan.
- Continue to work with Georgia and North Carolina on future research on groundwater availability.

QUESTIONS