



# Edisto Basin Groundwater Management Plans Overview

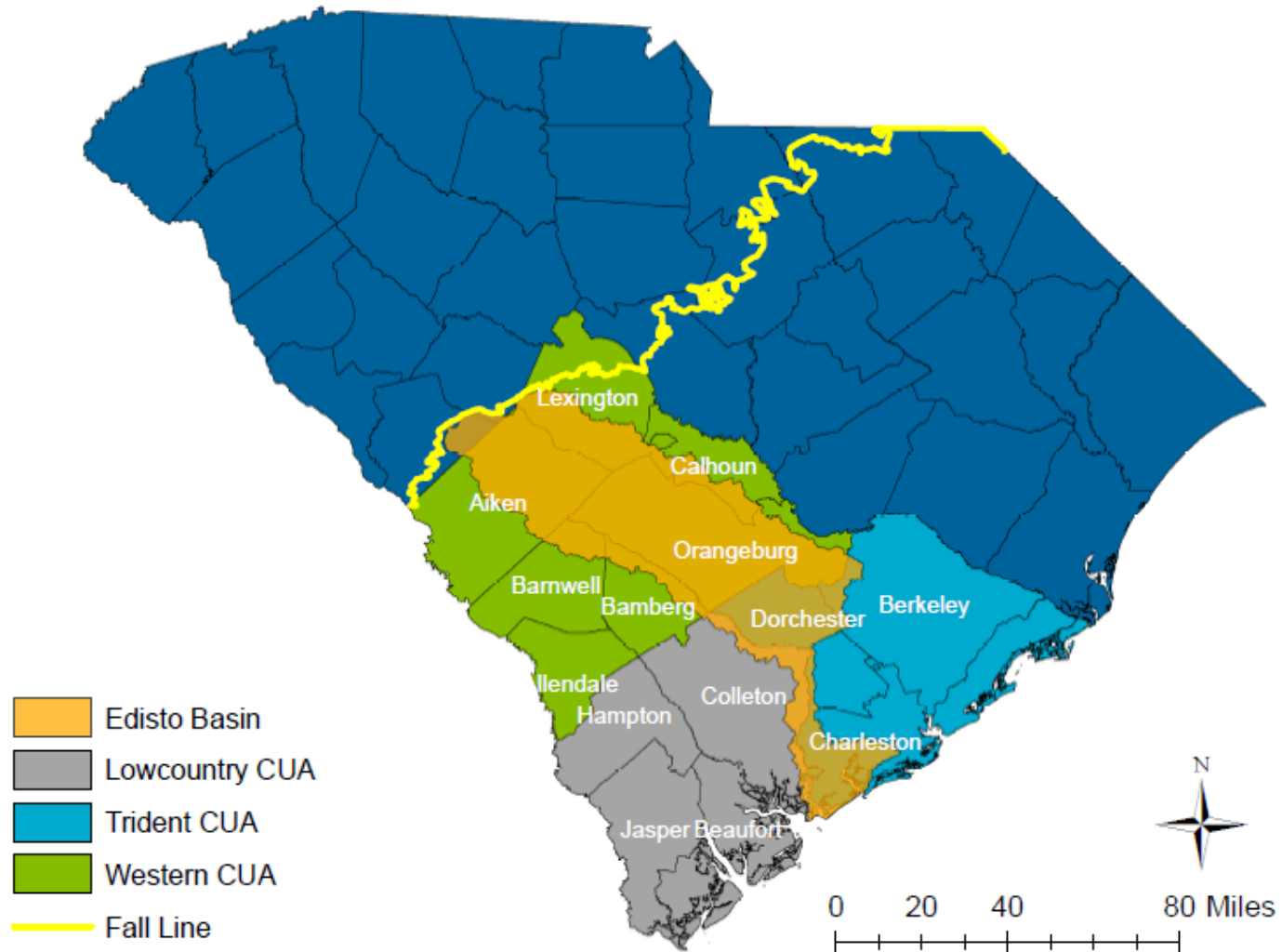
October 20, 2021 Meeting #16

South Carolina Department of Health and Environmental Control  
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# Background

- 3 Capacity Use Areas (CUAs) across Edisto Basin:
  - Western – largest at 7 counties est. November 2018
  - Lowcountry – 4 counties originally est. July 1981 (Hampton added January 2008)
  - Trident – 3 counties est. August 2002

Edisto Basin with Capacity Use Area Counties



# Progress with Groundwater Management Plans (GWMP)

- GWMP for each area has been completed
- Evaluations for Trident and Lowcountry (still in draft) have been completed
  - Western evaluation will be done in 2023, year before permit renewals

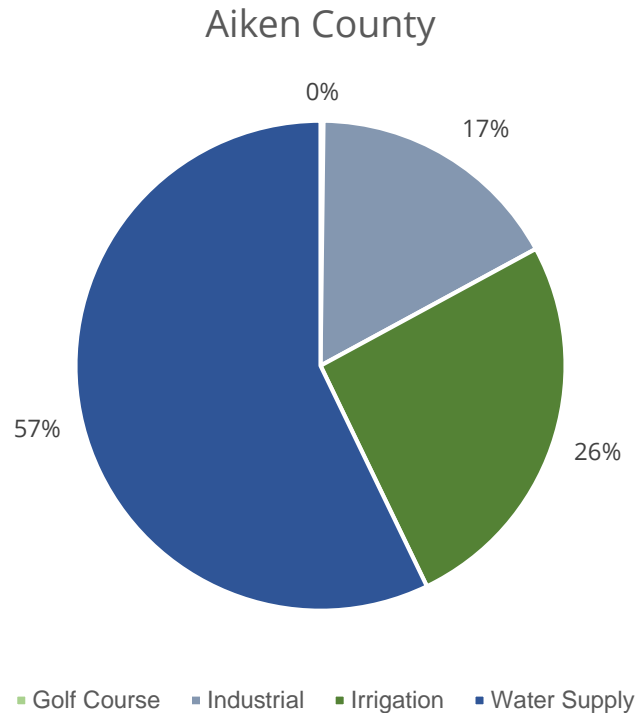
# Strategies for the Edisto CUAs GWMPs

1. Reduction of GW withdrawals in areas of concentrated pumping
2. Review permit applications based on demonstrated reasonable use
3. Establish a comprehensive GW monitoring program
4. Establish a conservation education plan for the general public and existing GW withdrawers
5. Regulation and Planning/Issue permits in accordance with the GWMP

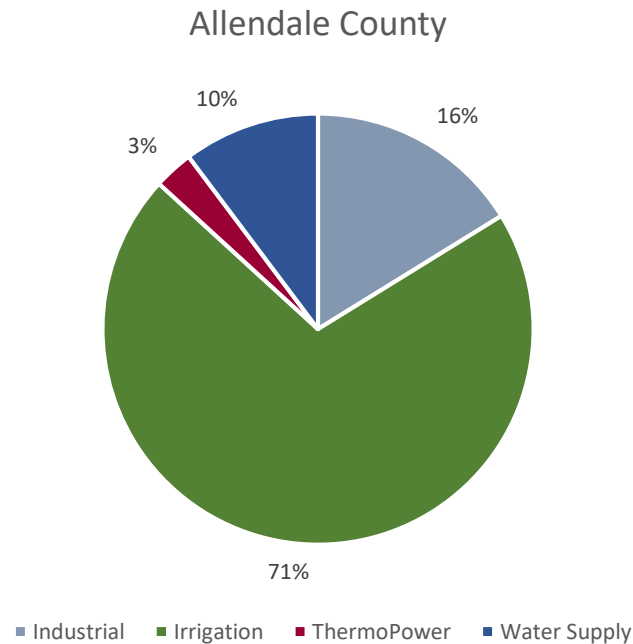
# Western GWMP Observations

- Historic reported groundwater use increased until around 2017 and has leveled out (largest increase was in irrigation)
- Population across Western counties has increased from 520,813 to 610,177 over 17 years (in Aiken and Lexington counties)

# Aiken County 2018 Use by Sector



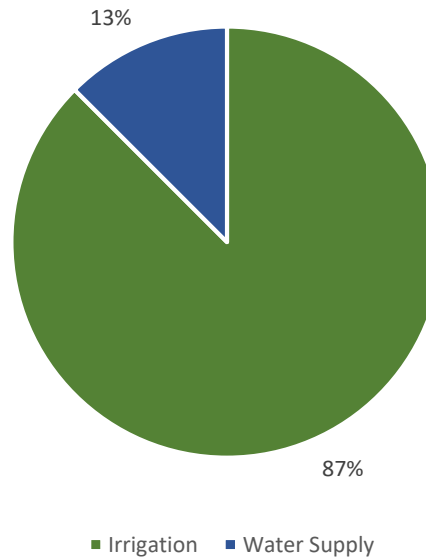
# Allendale County 2018 Use by Sector



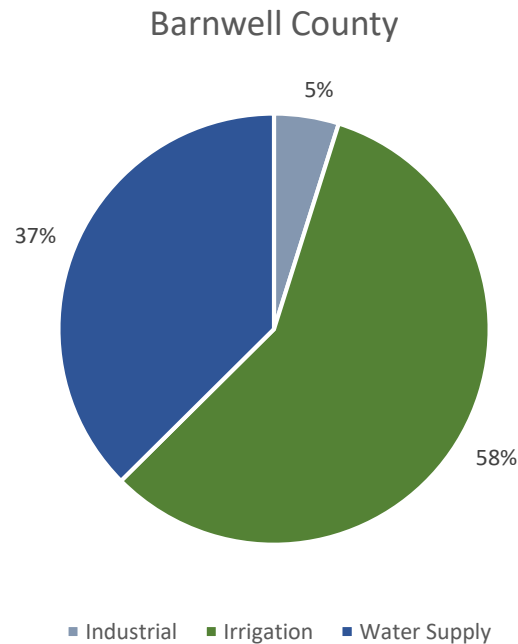


# Barnwell County 2018 Use by Sector

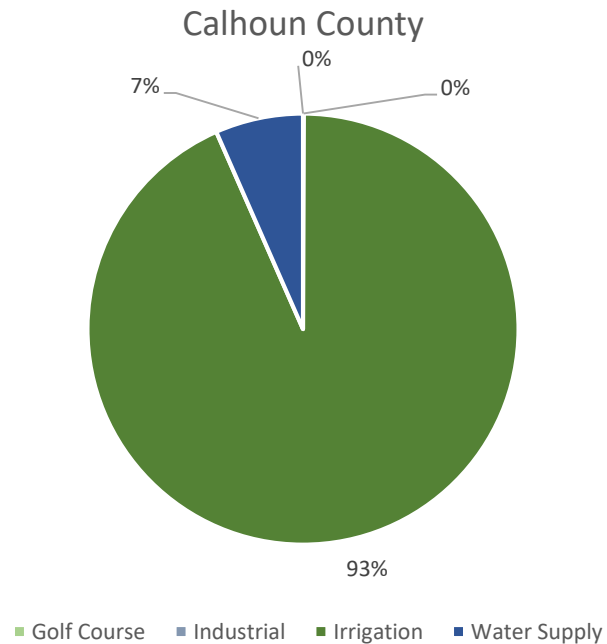
Barnwell County



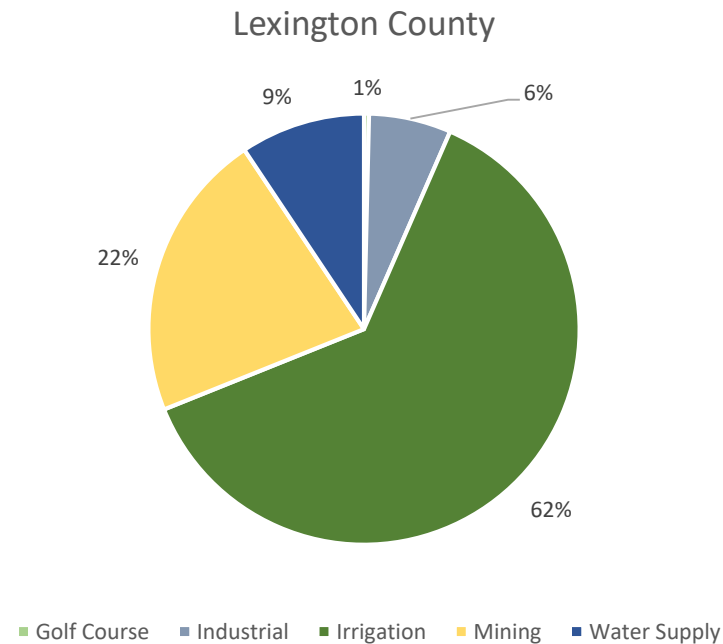
# Bamberg County 2018 Use by Sector



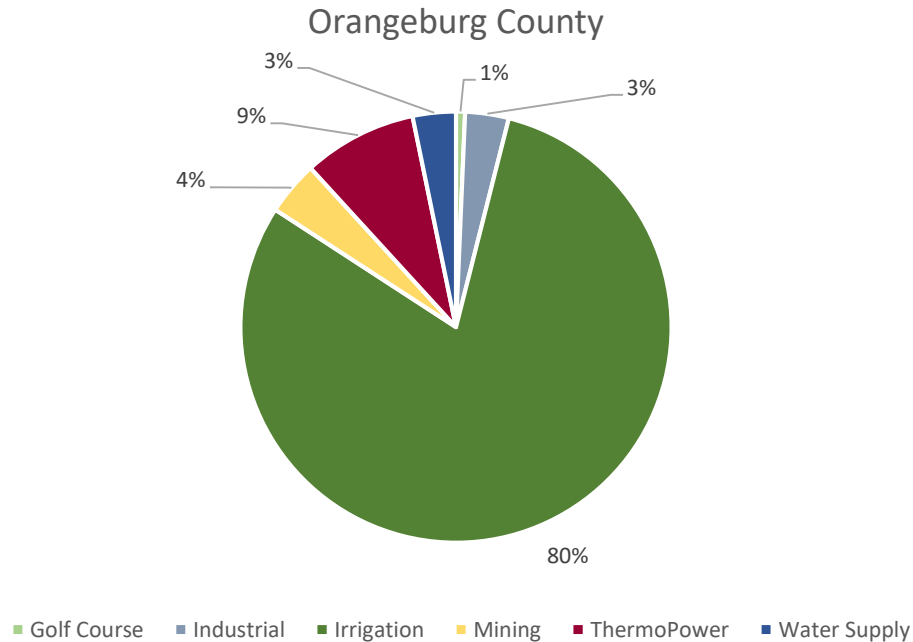
# Calhoun County 2018 Use by Sector



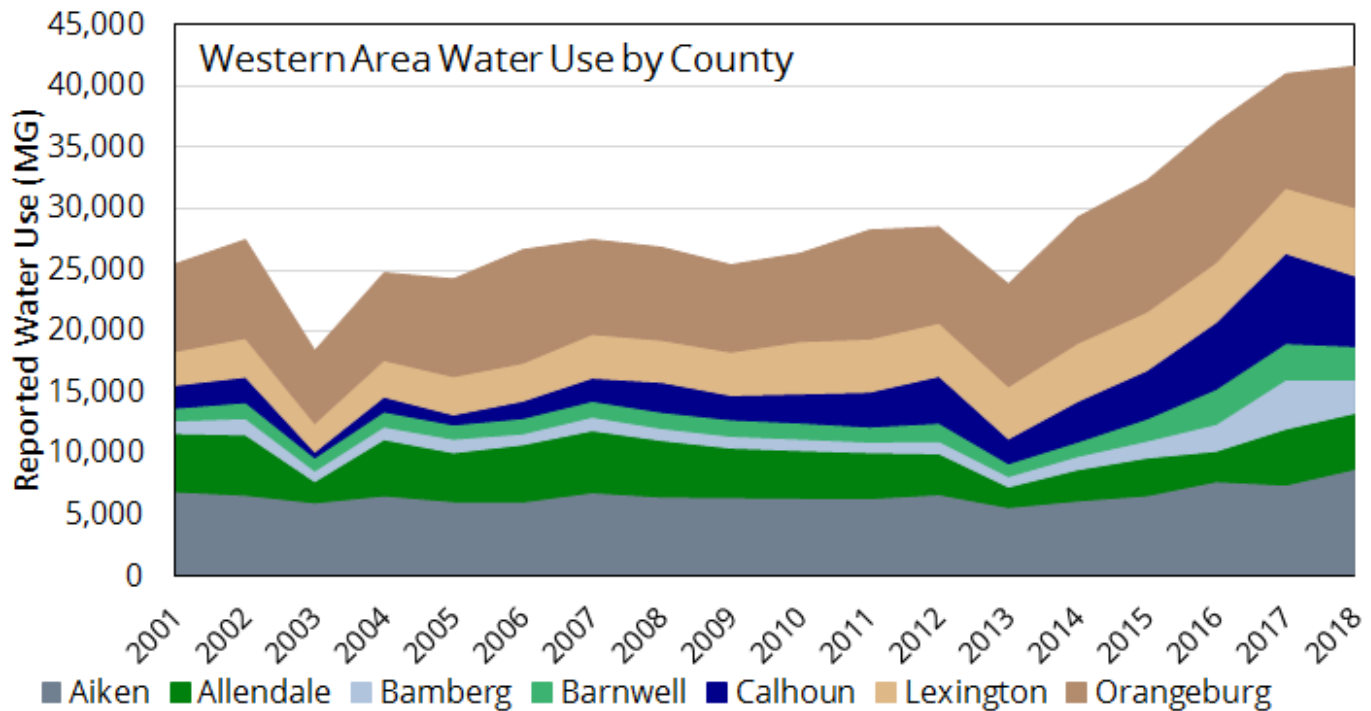
# Lexington County 2018 Use by Sector



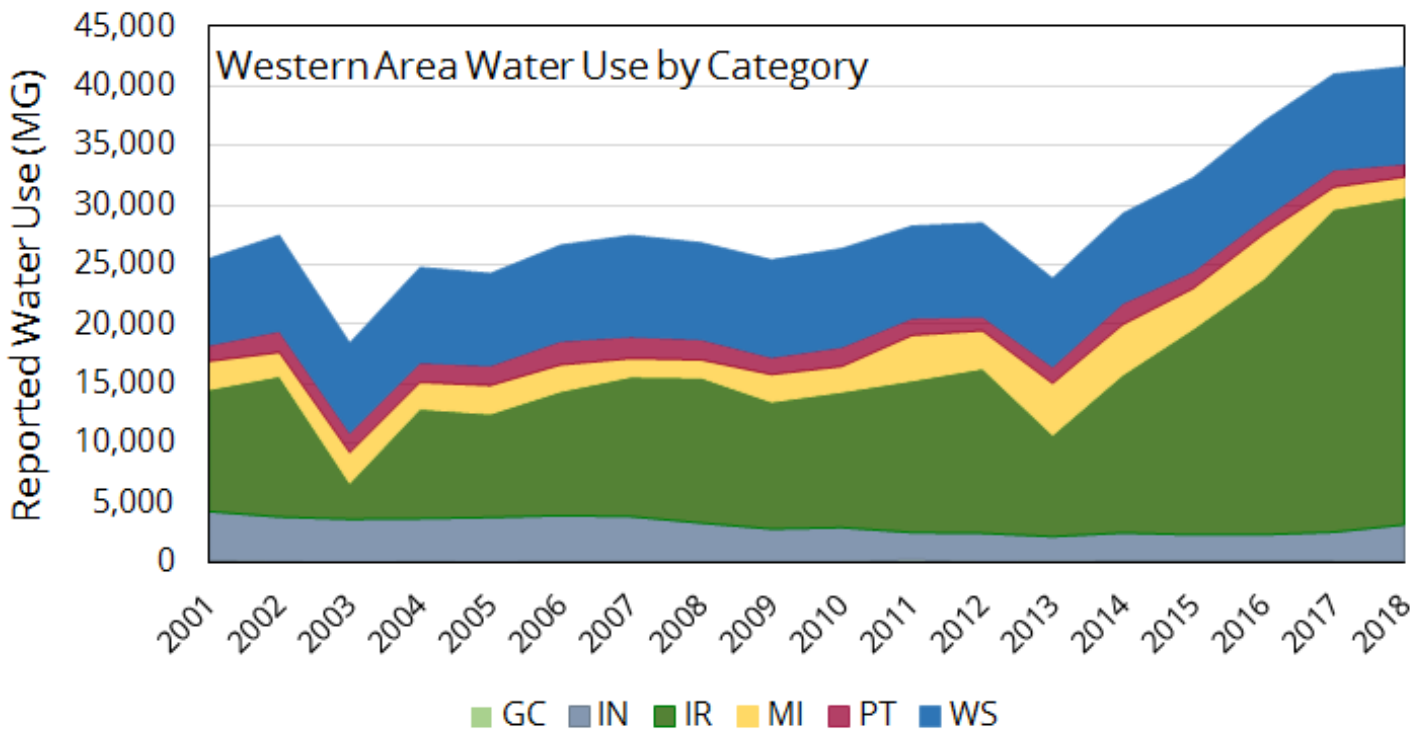
# Orangeburg County 2018 Use by Sector



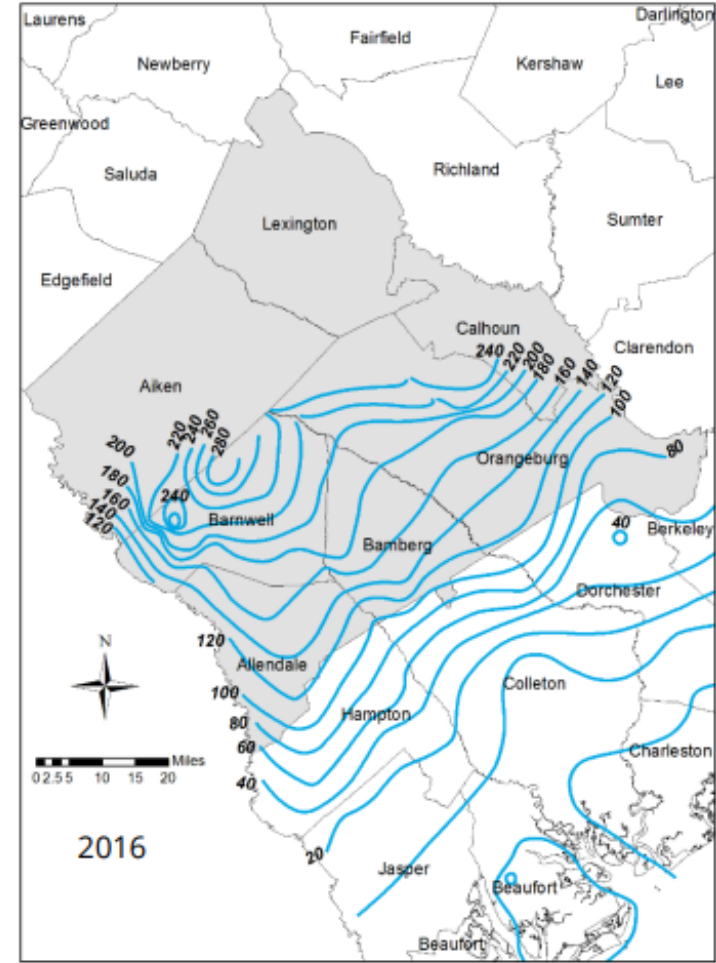
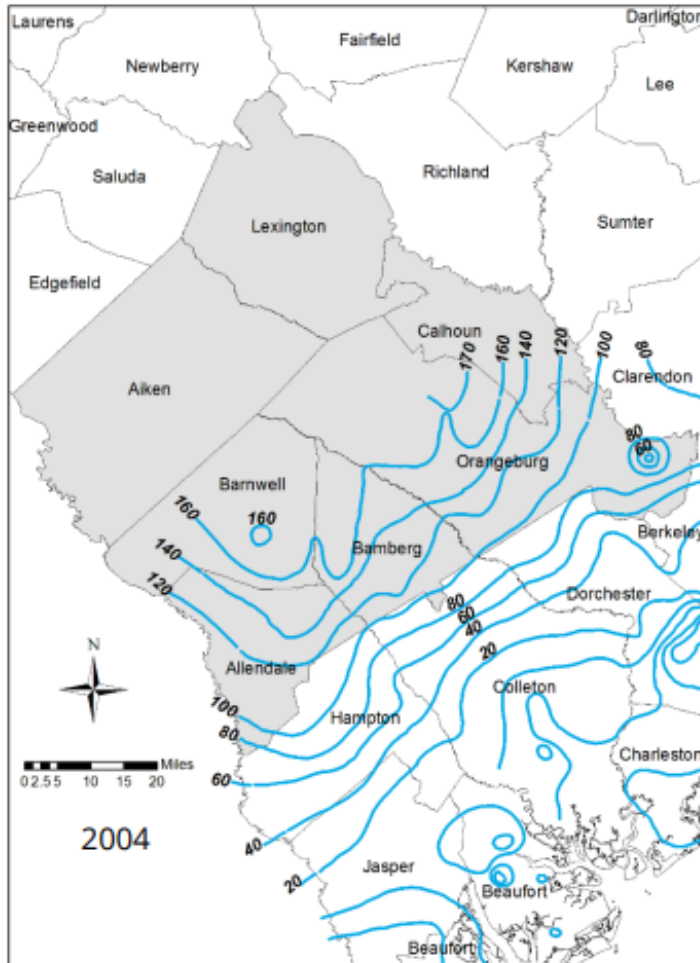
# Western Area Water Use by County



# Wester Area Water Use by Category

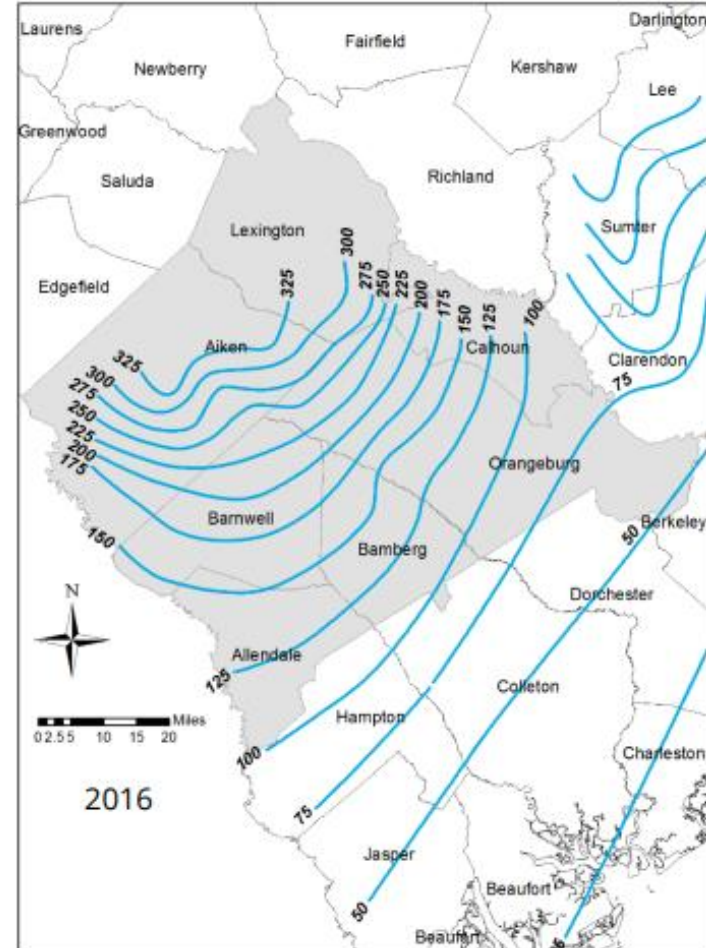
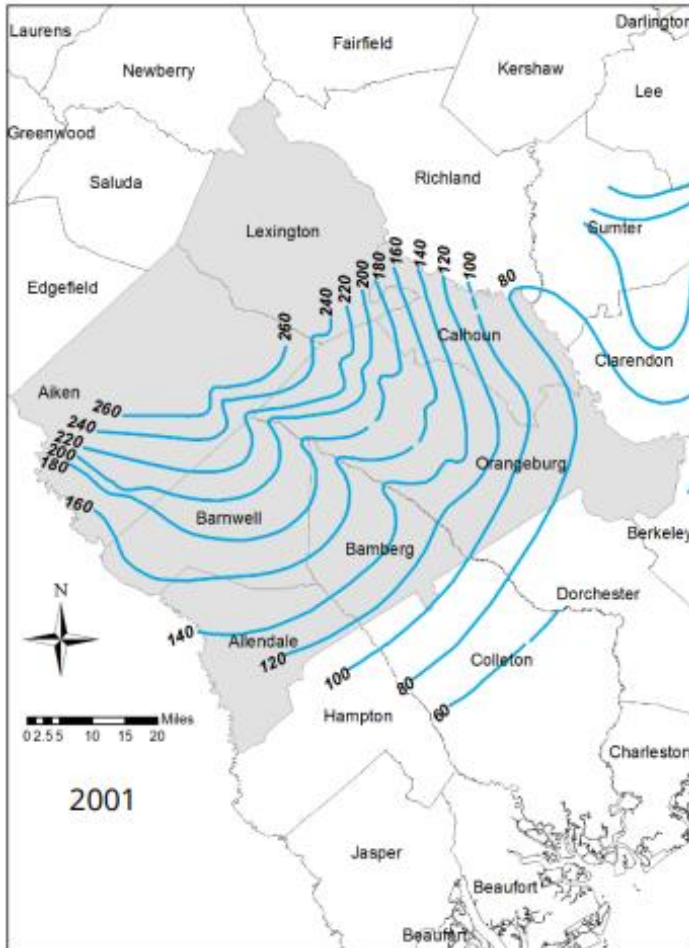


# Floridan/Gordon Aquifer

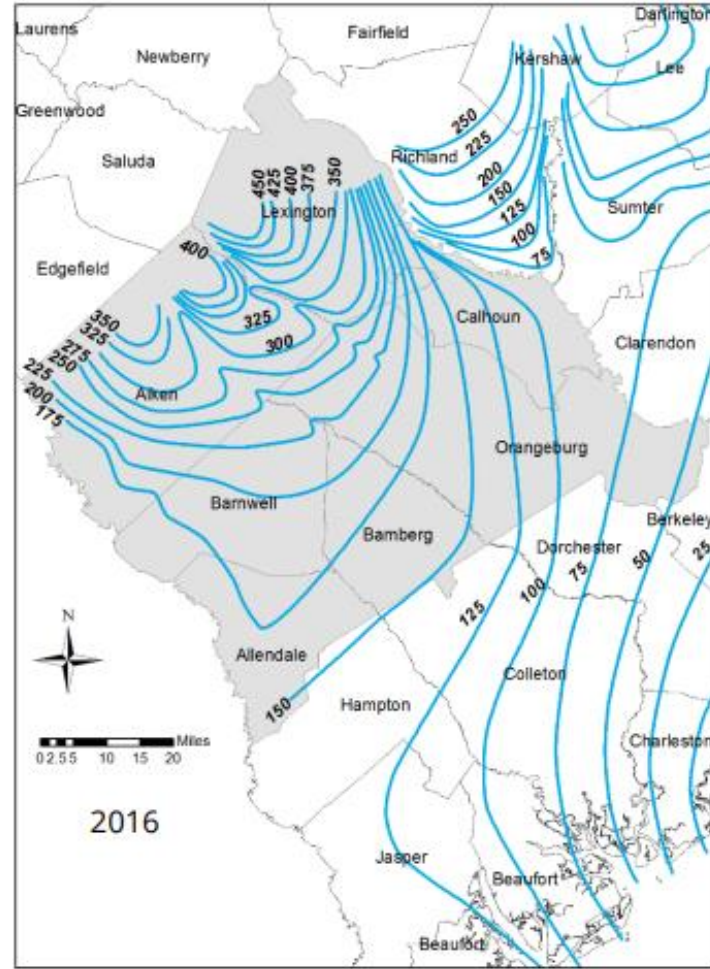
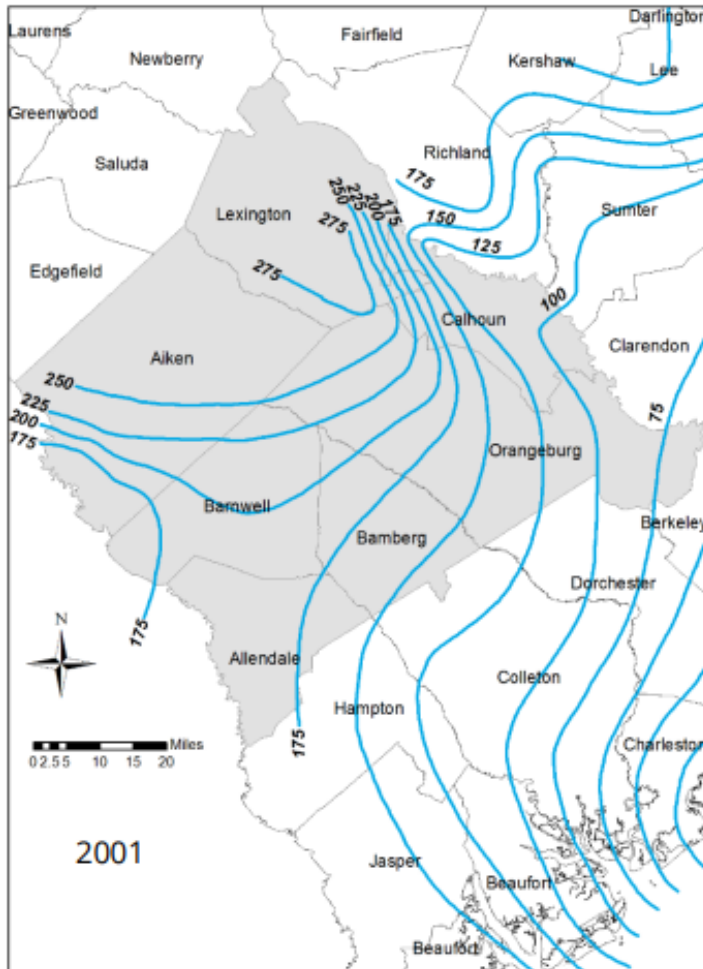




# Crouch Branch Aquifer



# McQueen Branch Aquifer

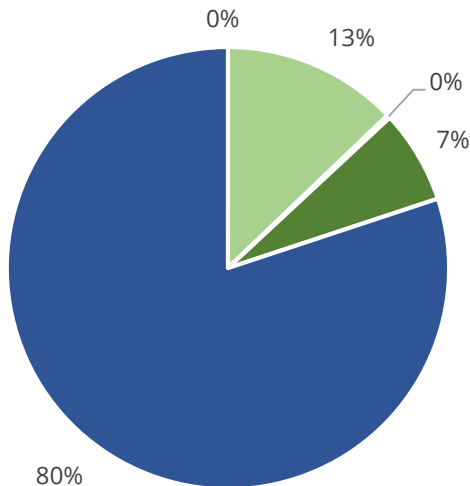


# Data Compiled for Lowcountry Report (Currently in Draft)

- Historic use has increased across sectors, mostly irrigation (due to increased reporting)
- Population has increased across Lowcountry by 60,635 from 2000 to 2015

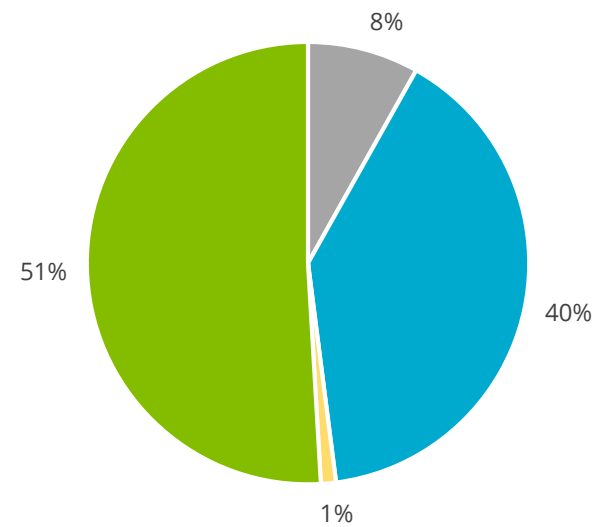
# Beaufort County 2021 Use by Sector and Aquifer

Beaufort County



■ Aquaculture ■ Golf Course ■ Industrial ■ Irrigation ■ Water Supply

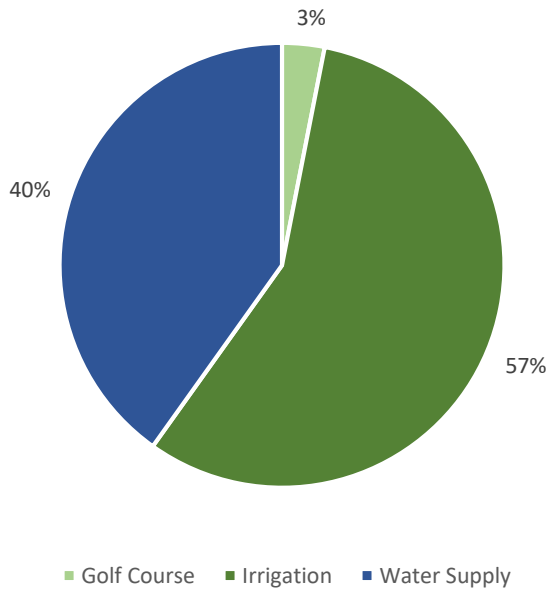
Beaufort County



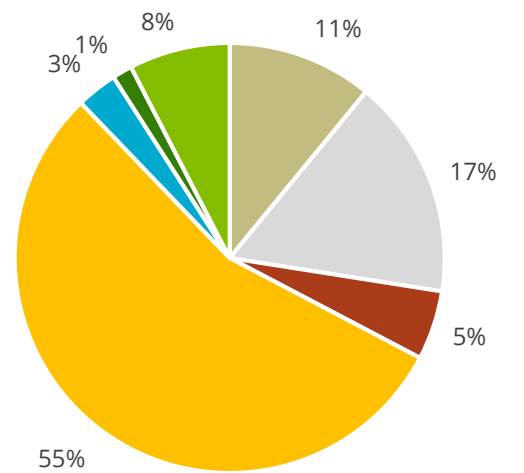
■ Gramling ■ Middle Floridan ■ Surficial ■ Upper Floridan

# Colleton County 2021 Use by Sector and Aquifer

Colleton County

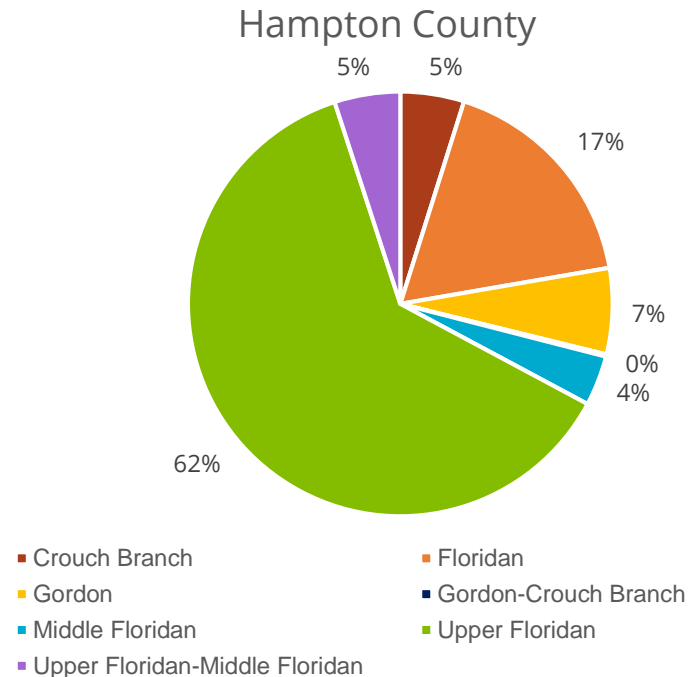
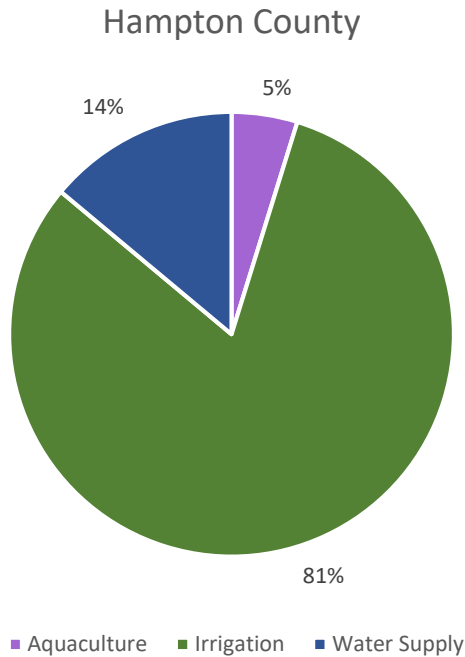


Colleton County



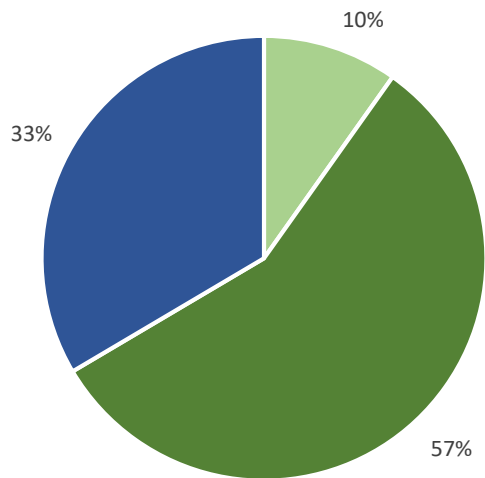
- Aquifer Zone Used By Edisto Beach
- Charleston
- Crouch Branch
- Gordon
- Middle Floridan
- Middle Floridan-Gordon
- Upper Floridan

# Hampton County 2021 Use by Sector and Aquifer



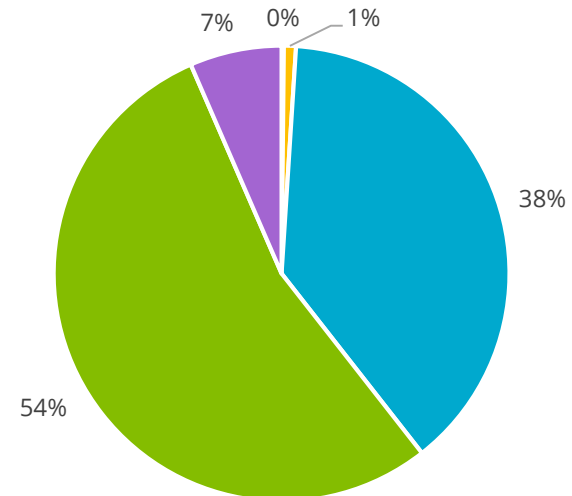
# Jasper County 2021 Use by Sector and Aquifer

Jasper County

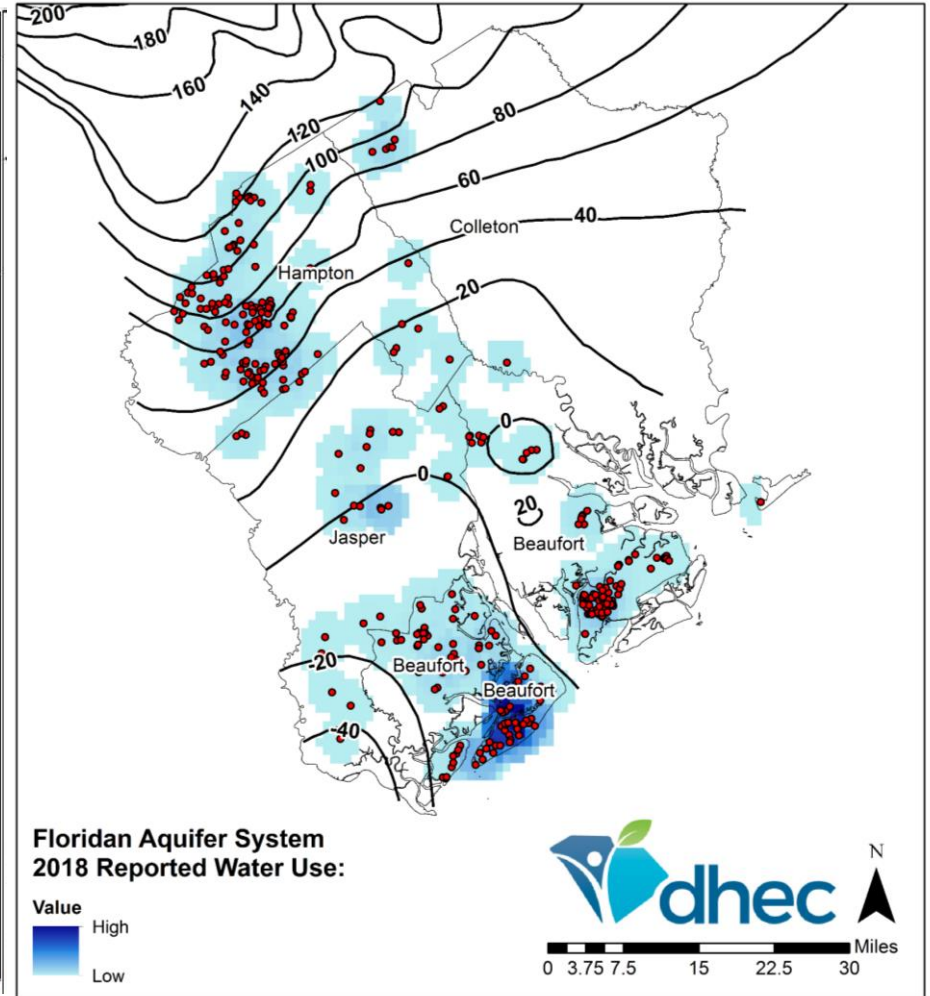
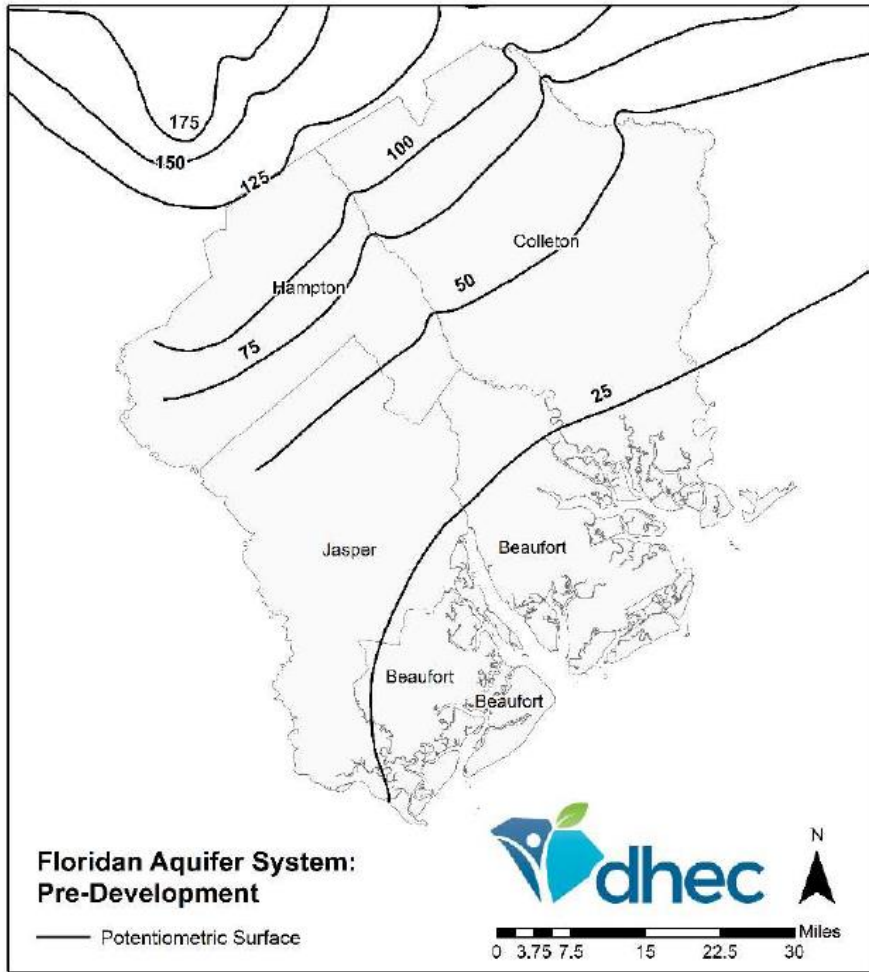


■ Golf Course ■ Irrigation ■ Water Supply

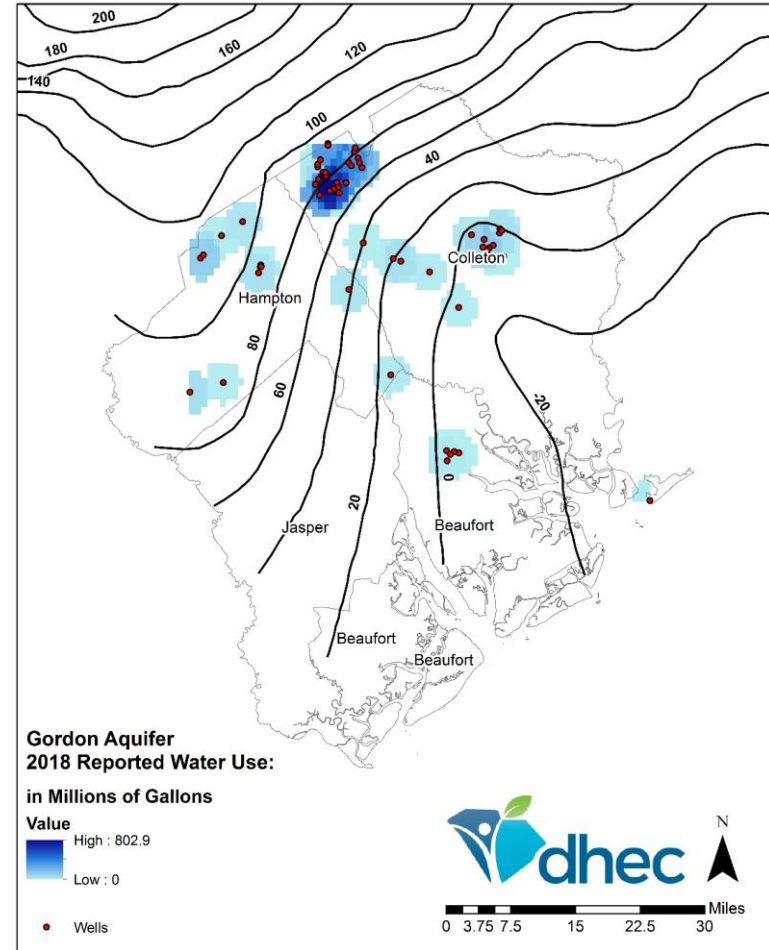
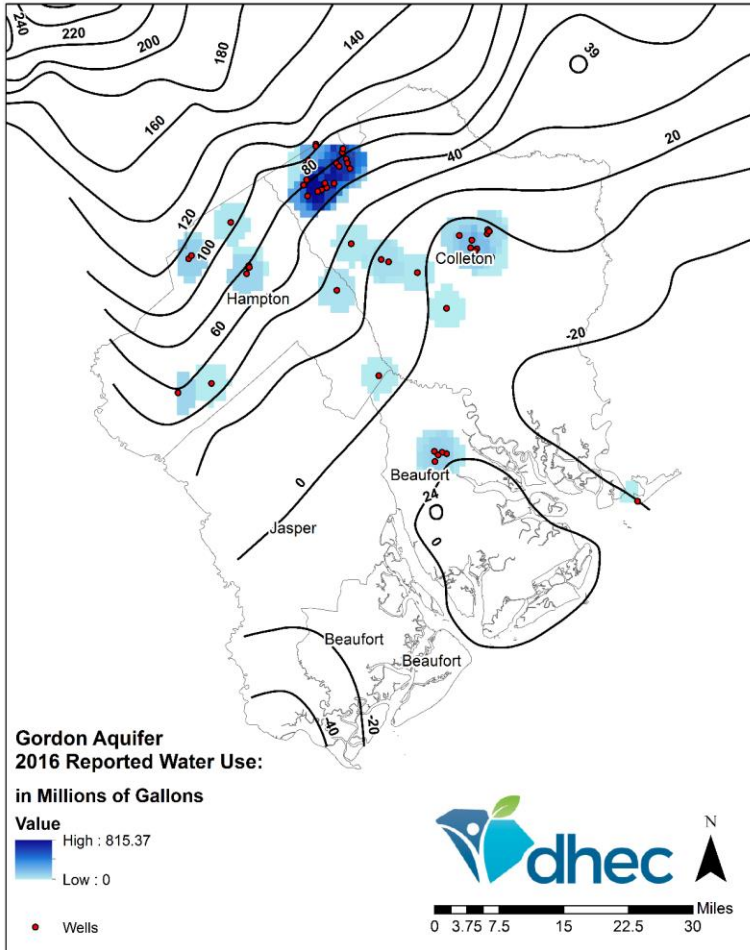
Jasper County

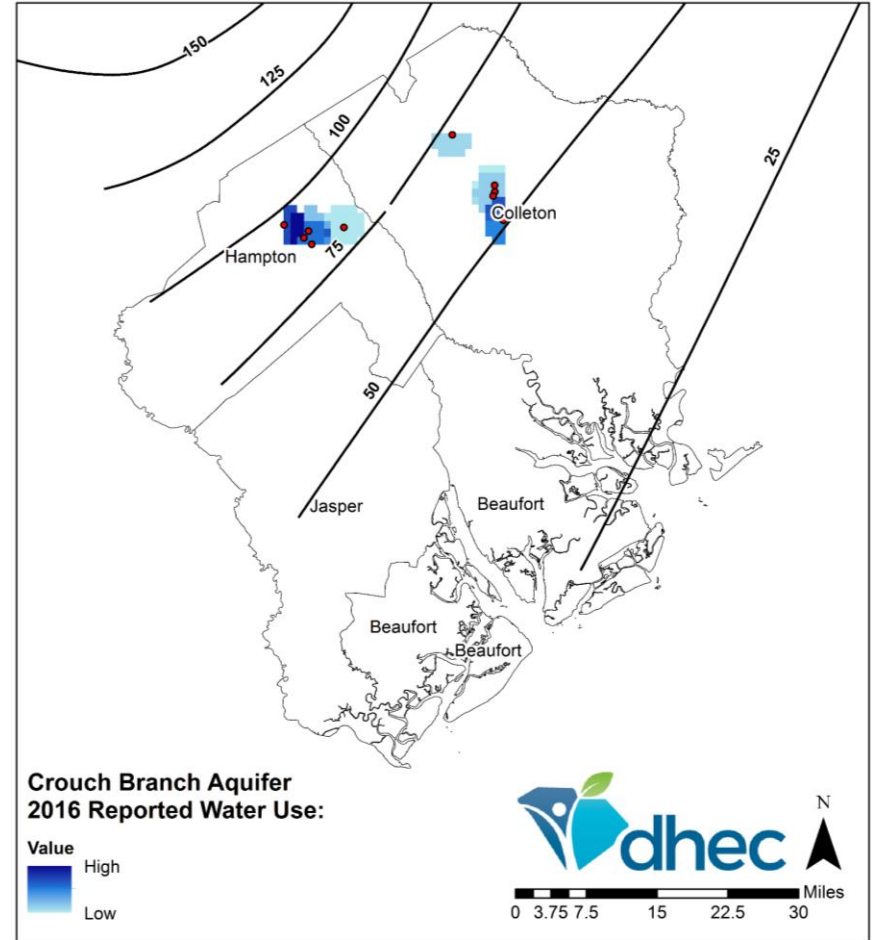
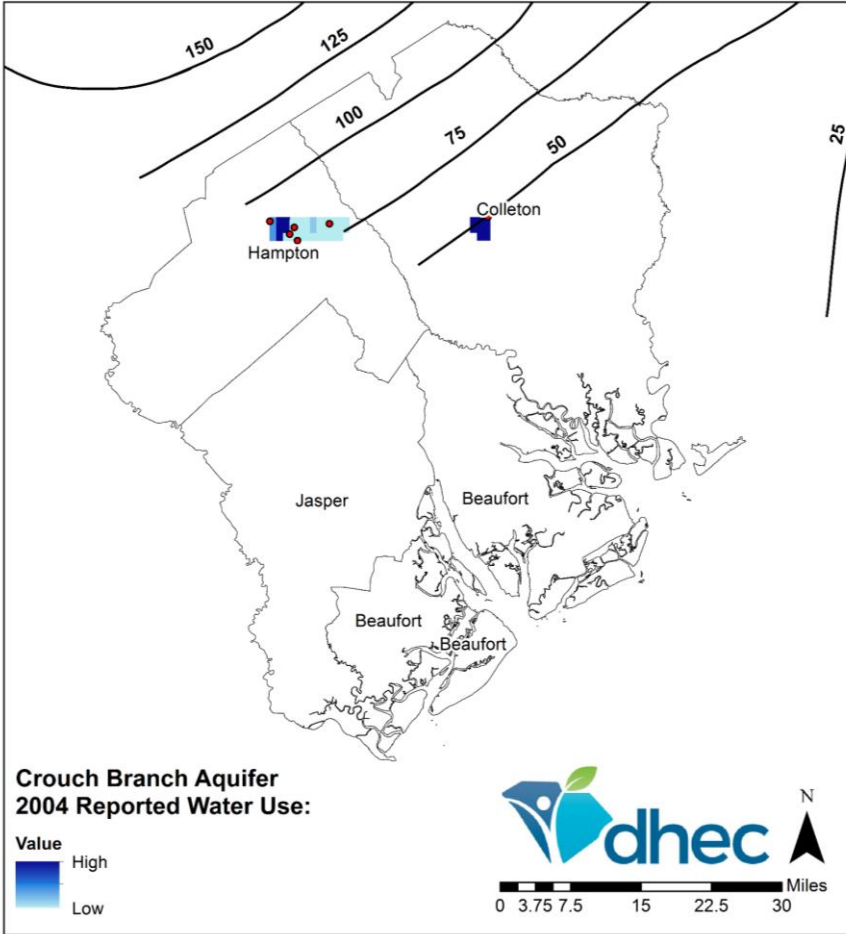


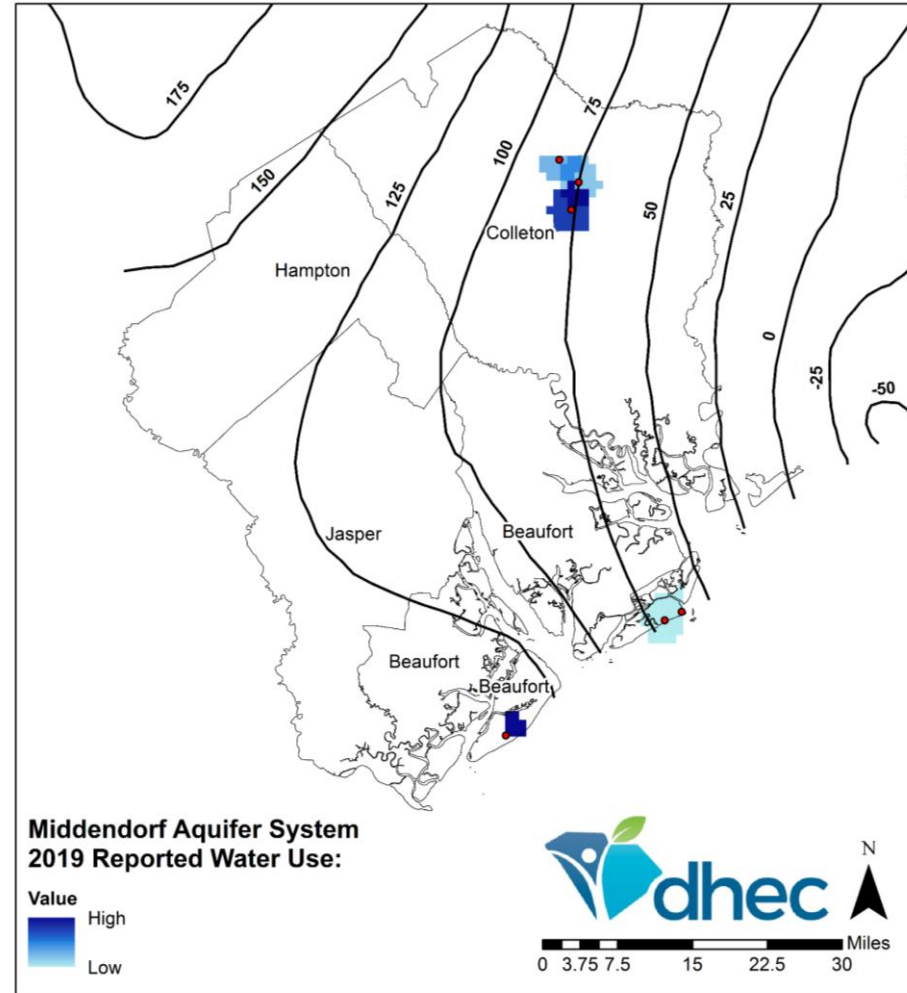
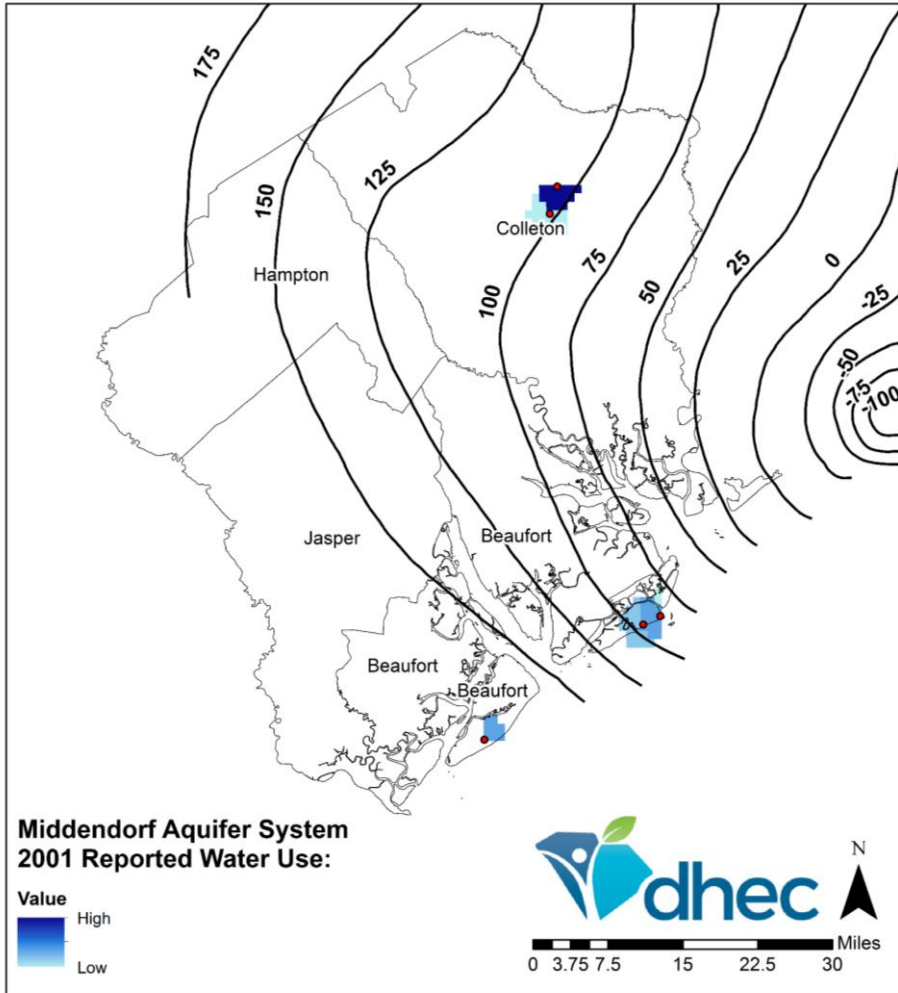
■ Floridan ■ Gordon ■ Middle Floridan ■ Upper Floridan ■ Upper Floridan-Middle Floridan











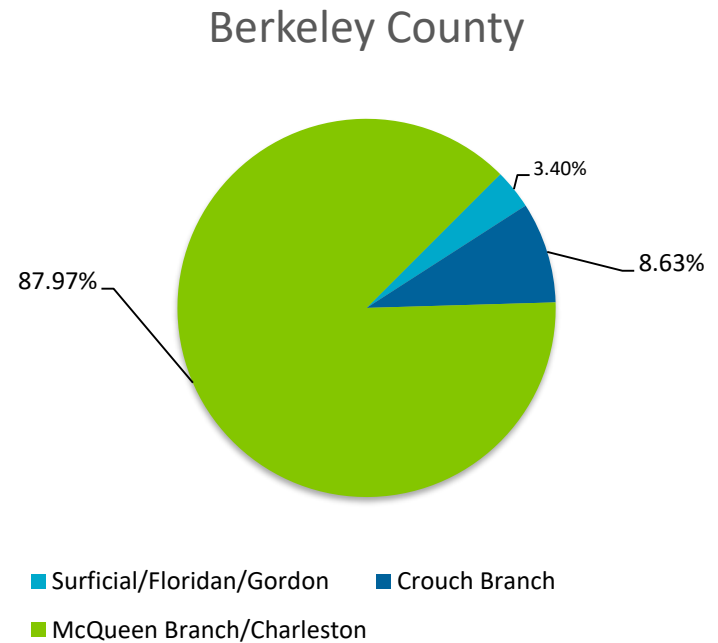
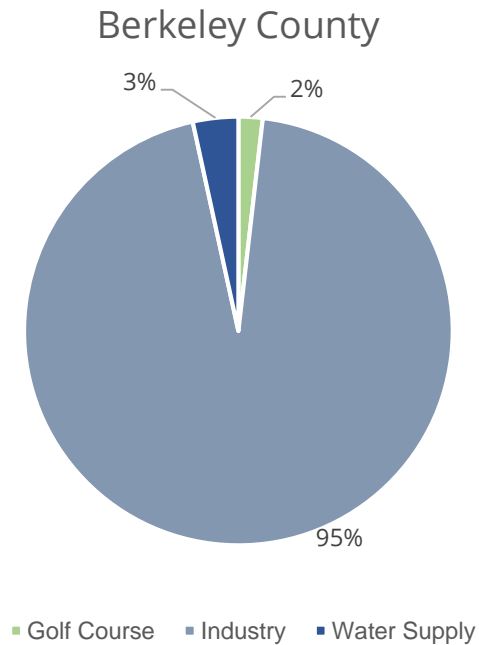
# Recommendations from Lowcountry (Draft) Evaluation

- Suggests limiting withdrawals from the Upper Floridan due to saltwater intrusion and declining water levels
- Using aquifer storage and recovery (ASR) wells when appropriate

# Data Compiled for Trident Report (Written in 2017)

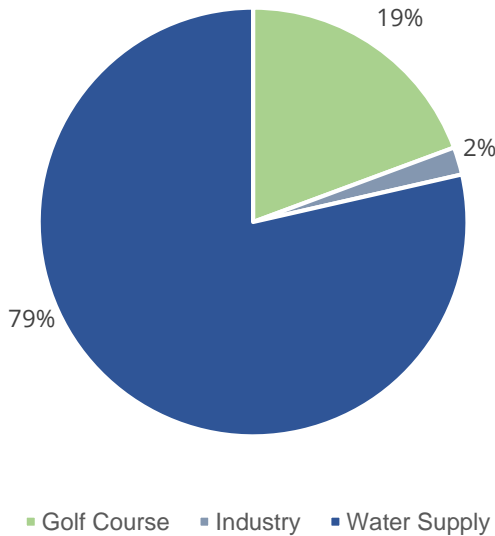
- Permitted use and aquifer use
- Potentiometric maps of pertinent regional aquifers
- Data from evaluation is based on 2016 use

# Berkeley County 2016 Use by Sector and Aquifer

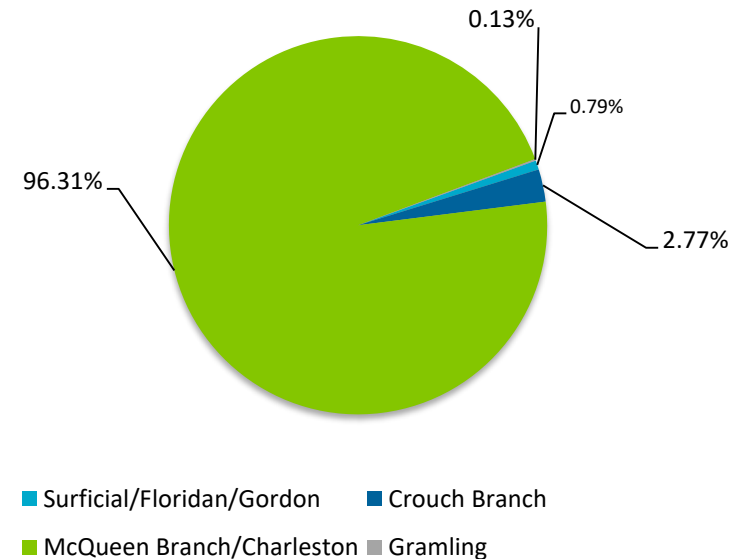


# Charleston County 2016 Use by Sector and Aquifer

Charleston County

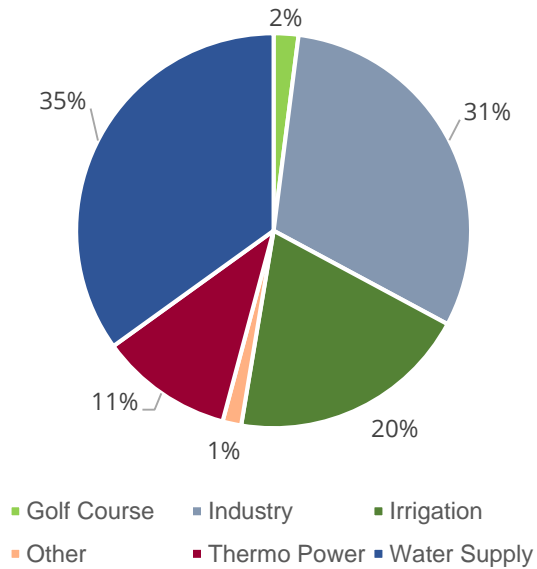


Charleston County

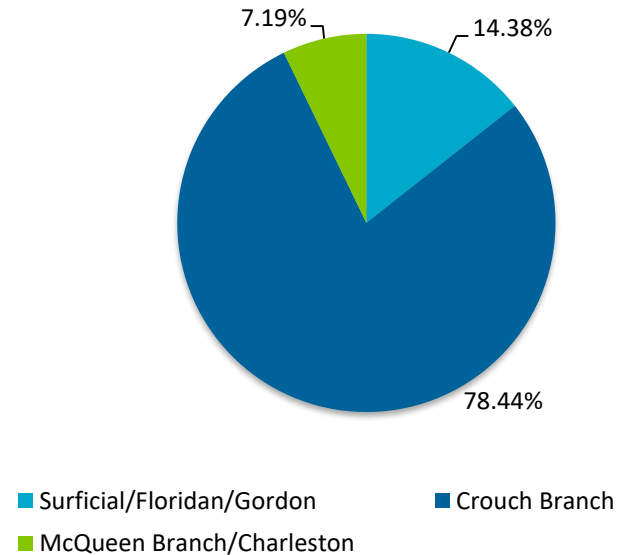


# Dorchester County Use by Sector

Dorchester County

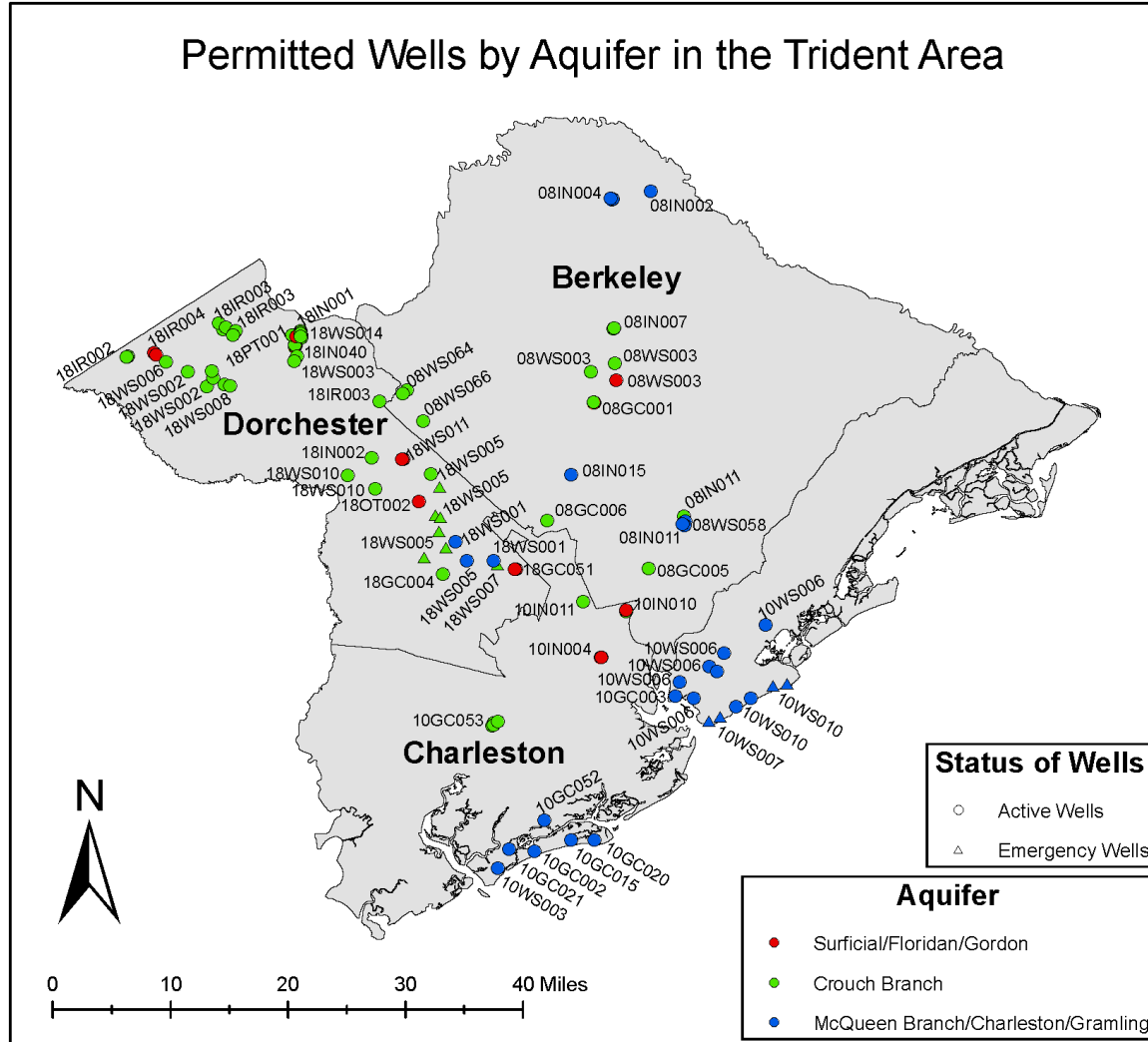


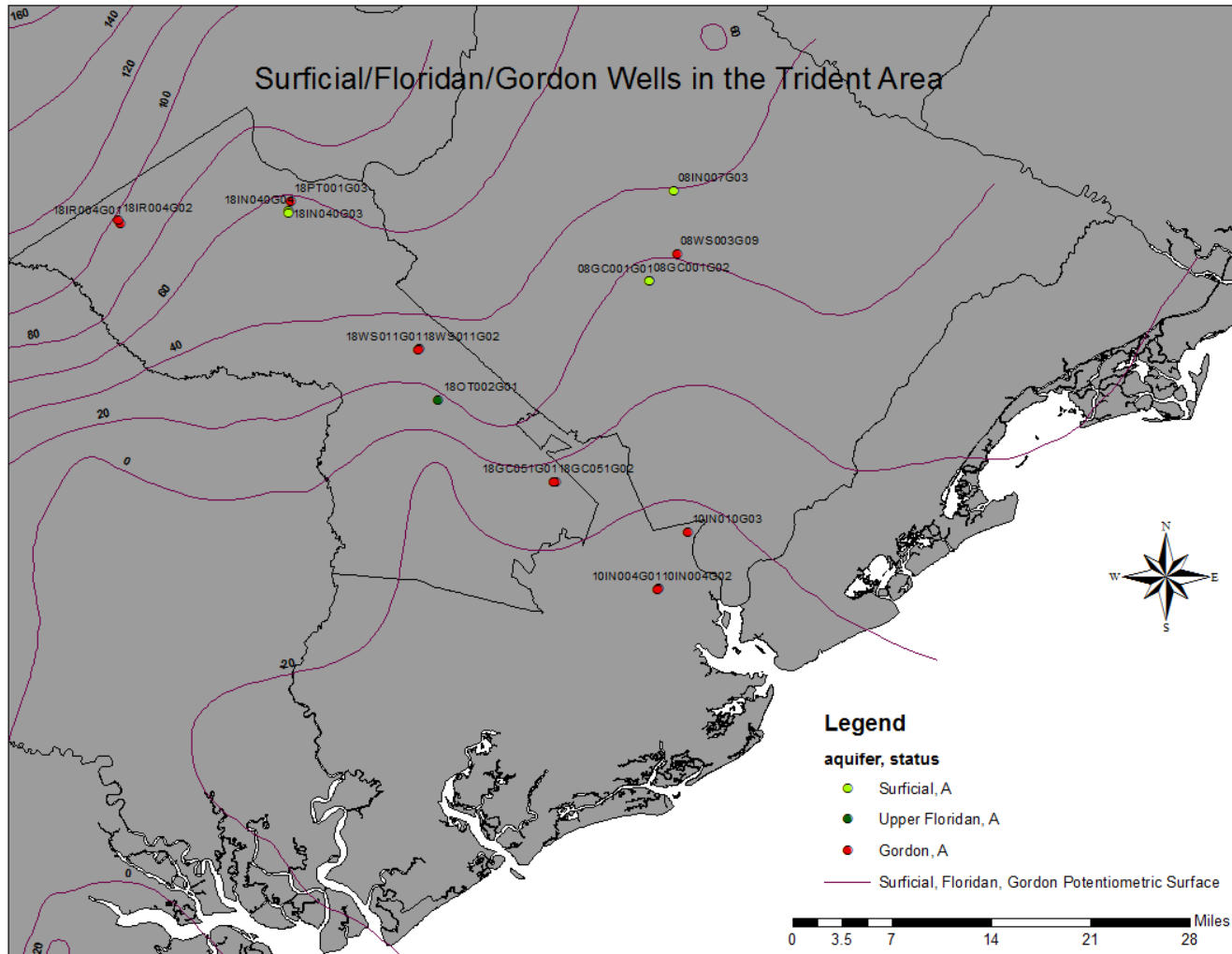
Dorchester County



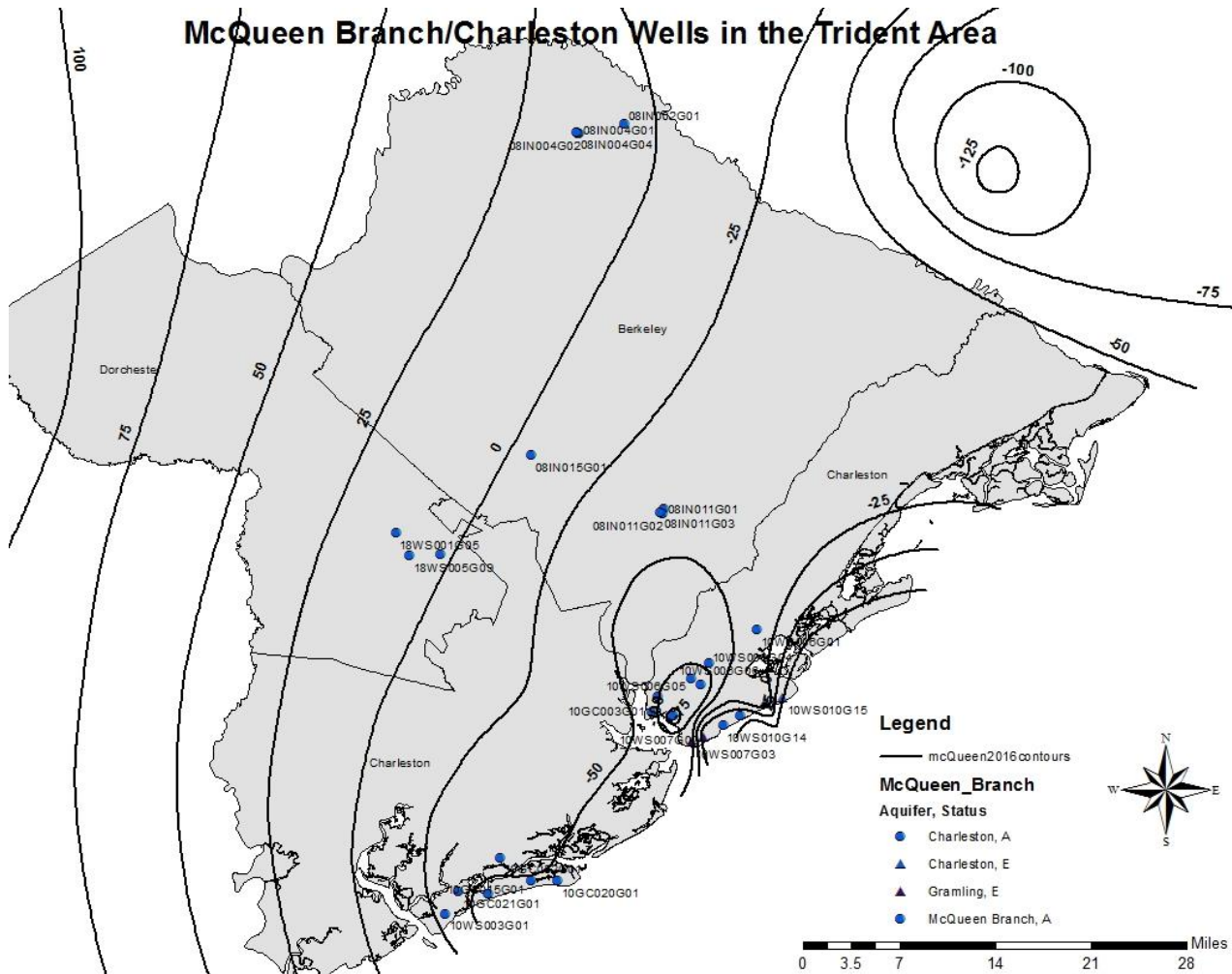


### Permitted Wells by Aquifer in the Trident Area









# Recommendations from Trident Evaluation

- Reduce withdrawals in McQueen Branch and Charleston Aquifers
- Increase use of ASR wells and artificial recharge (AR)
- Infrastructure audits for PWS systems
  - Encourage conservation by PWS customers

# Strategies for the Edisto CUAs GWMPs

1. Reduction of GW withdrawals in areas of concentrated pumping
2. Review permit applications based on demonstrated reasonable use
3. Establish a comprehensive GW monitoring program
4. Establish a conservation education plan for the general public and existing GW withdrawers
5. Regulation and Planning/Issue permits in accordance with the GWMP

# General Notes Compared with Strategies

- Look to decrease use in aquifers when appropriate – Strategies 1, 2, 3, and 5
- ASR wells when appropriate – Strategies 1 and 5
- Infrastructure audit – Strategies 2, 4, and 5



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# CONTACT US

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