RBC Discussion of Results and Consideration of Groundwater Areas of Concern and Groundwater Conditions

RBC Discussion and Decision Points

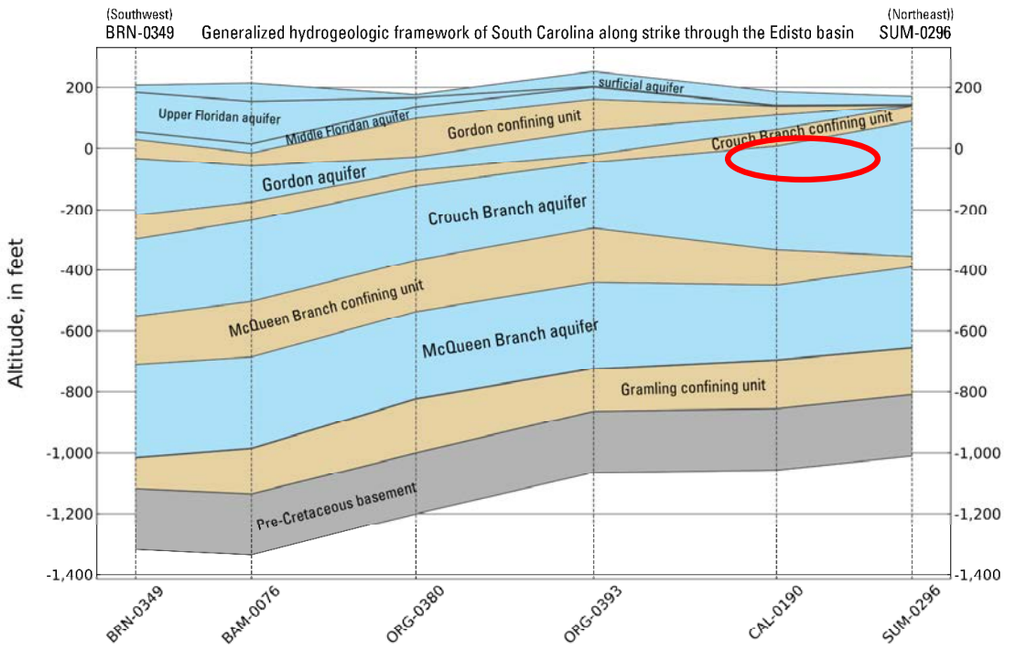
- Does the RBC want to designate one or more **Groundwater Areas of Concern?**
- Does the RBC want to designate any **Groundwater Conditions?**
- What **Groundwater Management Strategies** would the RBC like to evaluate?
- Does the RBC need more information to make these decisions?

Definitions

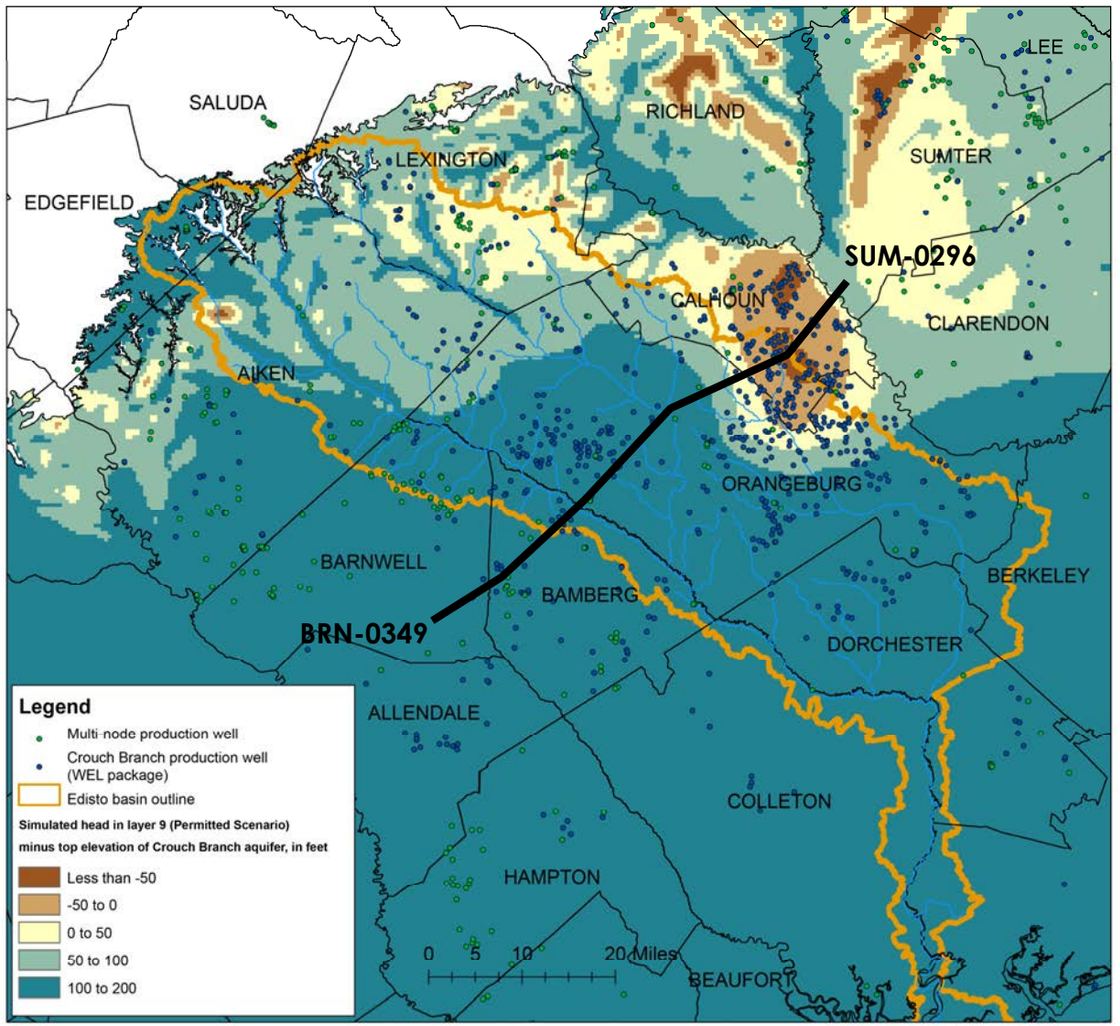
- A **Groundwater Area of Concern** is an area where current or future groundwater withdrawals from an aquifer are causing or are expected to cause unacceptable impacts to the resource or to the public health and well-being.
- A **Groundwater Condition** is a limitation on the amount of groundwater that can be withdrawn from an aquifer, and which can be applied to evaluate **Groundwater Supply** for planning purposes.
- **Groundwater Supply** is the volume of water that can be withdrawn annually from a specified aquifer in a designated location without violating any applied **Groundwater Conditions** on the groundwater source.
- A **Groundwater Shortage** is a state in which withdrawals from a specified aquifer violate a Groundwater Condition applied on that aquifer.

Potential Groundwater Area of Concern – Calhoun County

- An area where current or future groundwater withdrawals from an aquifer are causing or are expected to cause unacceptable impacts to the resource or to the public health and well-being.



Simulated 2070 heads below top of aquifer in Crouch Branch (layer 9) Permitted Scenario



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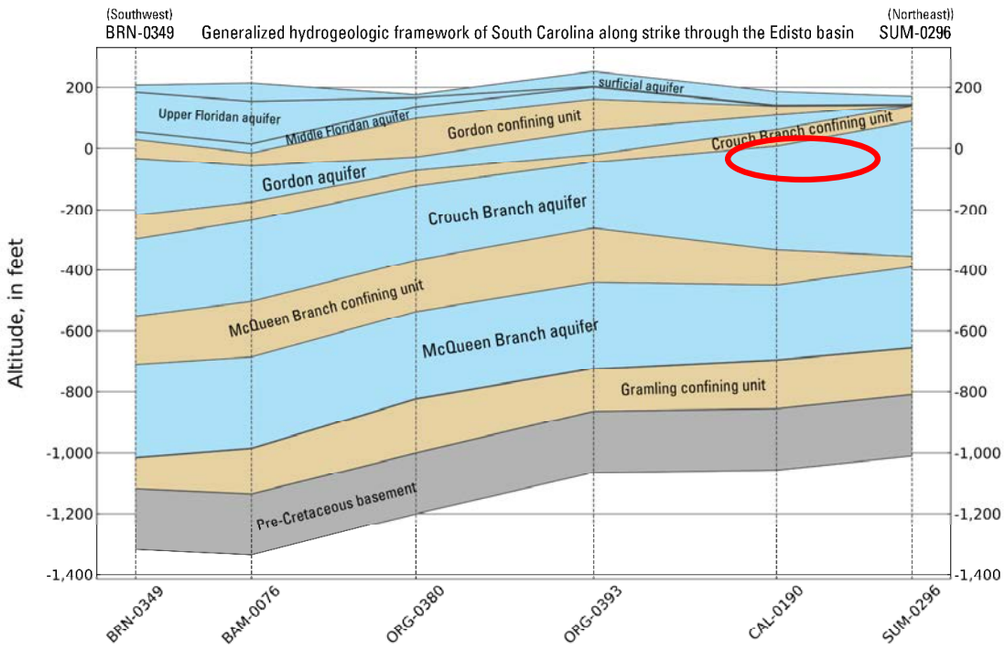
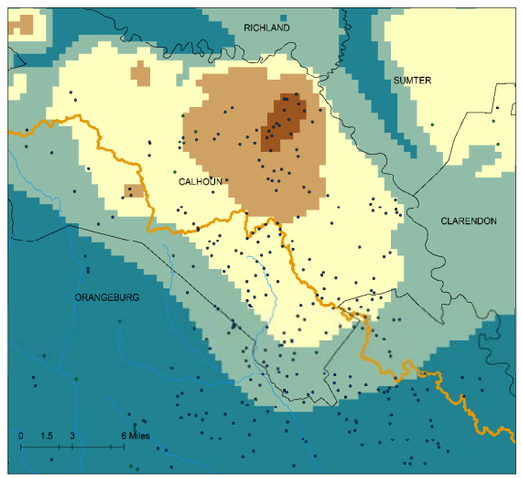
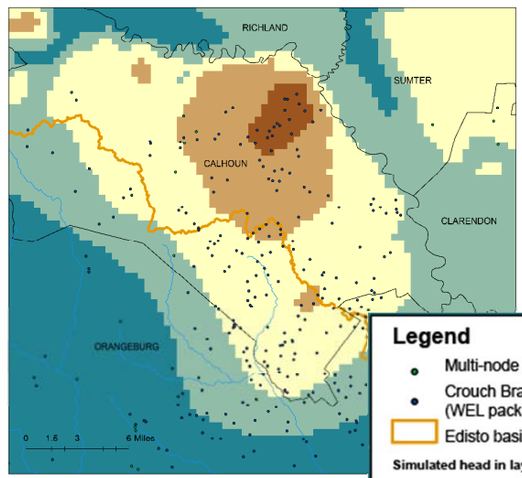


Simulated 2070 heads below top of aquifer in Crouch Branch (layer 9)

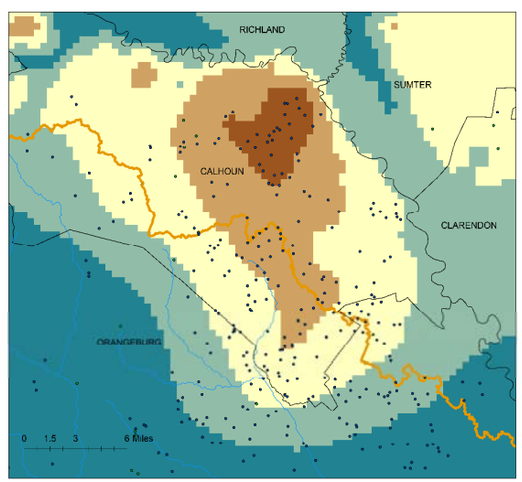
Current Scenario



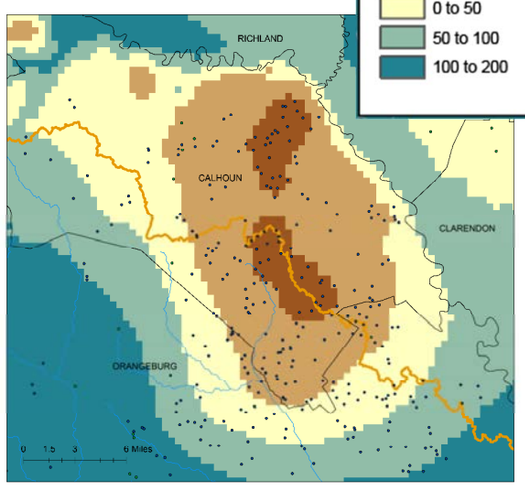
Moderate Growth Scenario

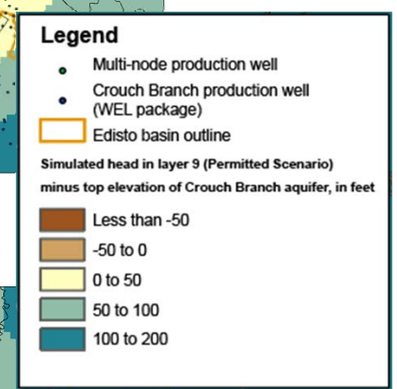


High Growth Scenario



Permitted Scenario



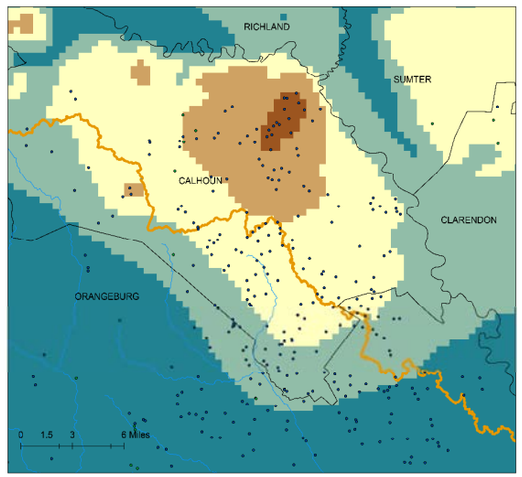


Potential Groundwater Area of Concern – Calhoun County

- An area where current or future groundwater withdrawals from an aquifer are causing or are expected to cause unacceptable impacts to the resource or to the public health and well-being.
- **Potential impacts:**
  - Land subsidence
  - Compaction of the aquifer and depletion of the resource
  - Reduced well yields
  - Dry wells, including dry domestic wells
  - Increased pumping costs

Simulated 2070 heads below top of aquifer in Crouch Branch (layer 9)

Current Scenario



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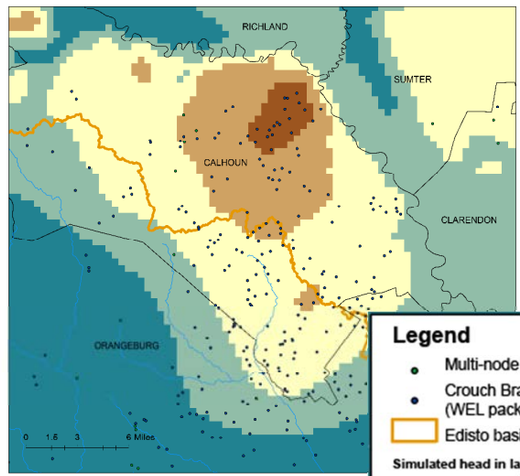

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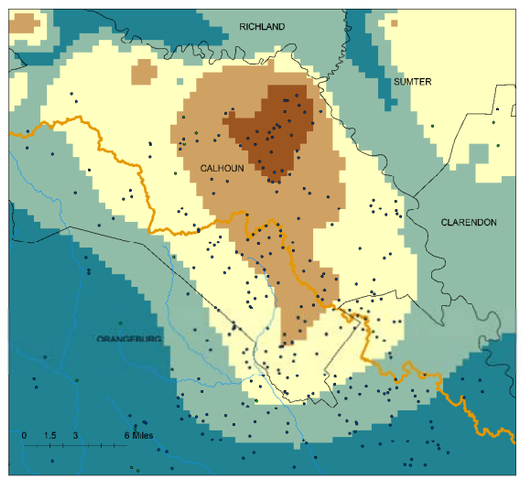

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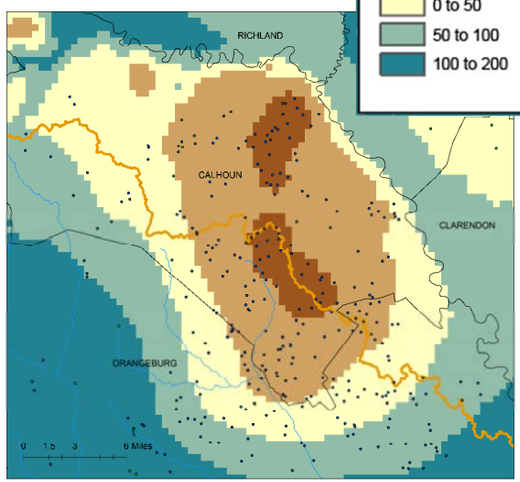
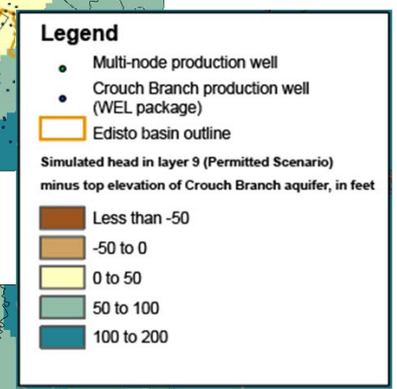
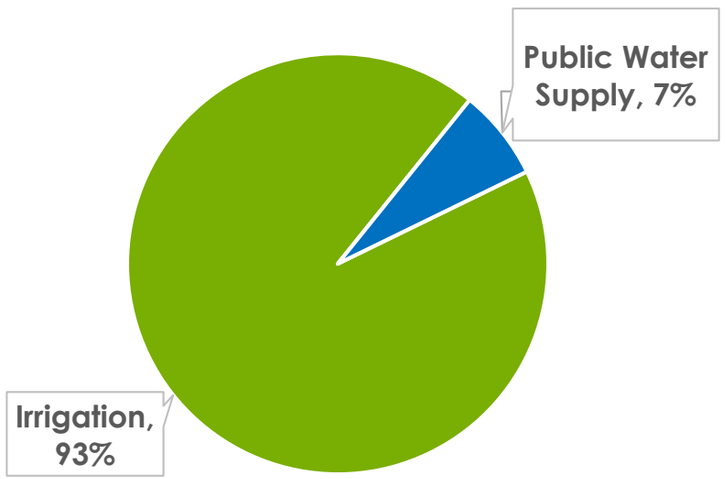




Potential Groundwater Area of Concern – Calhoun County

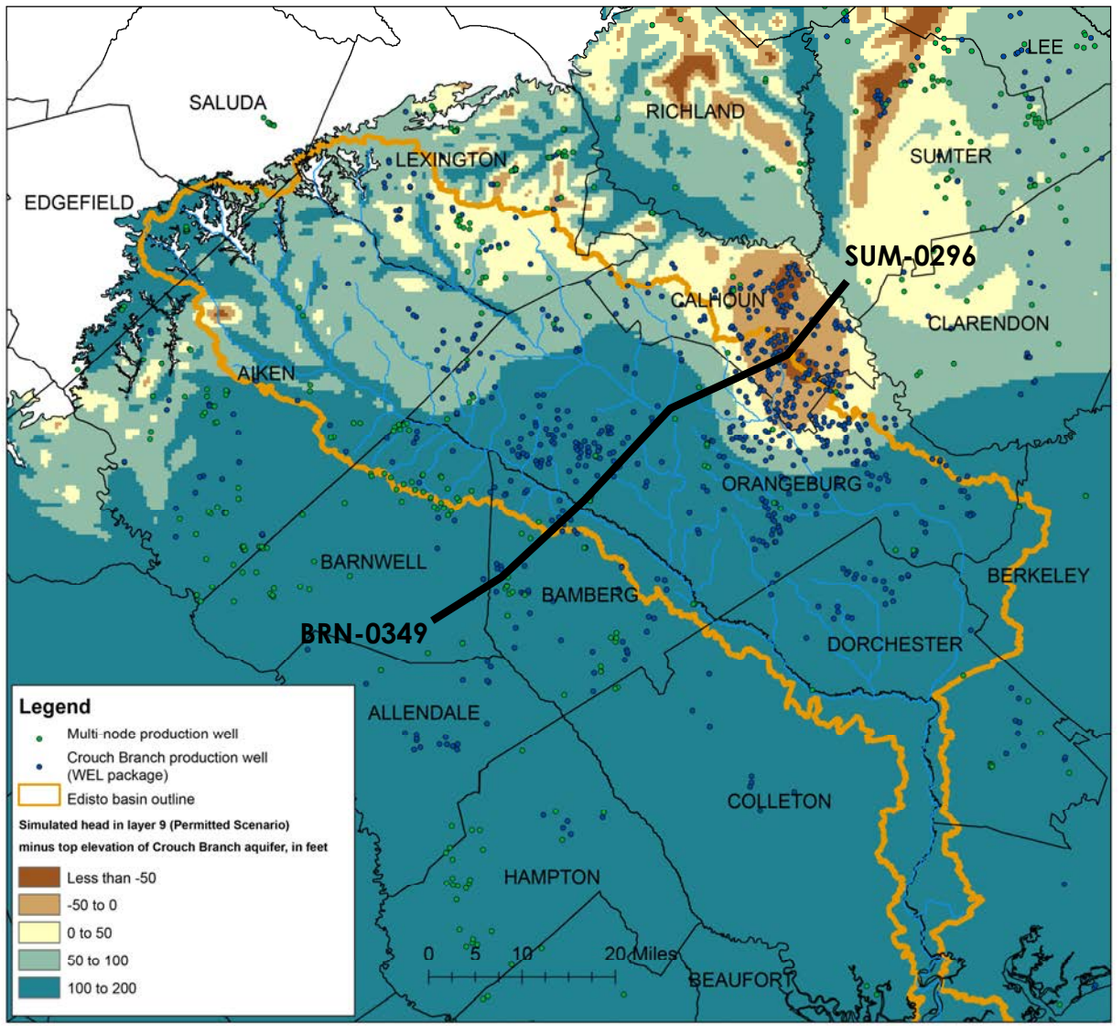
- An area where current or future groundwater withdrawals from an aquifer are causing or are expected to cause unacceptable impacts to the resource or to the public health and well-being.

Calhoun County 2018 Groundwater Use



Source: DHEC

Simulated 2070 heads below top of aquifer in Crouch Branch (layer 9) Permitted Scenario



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Potential Groundwater Area of Concern – Lexington County

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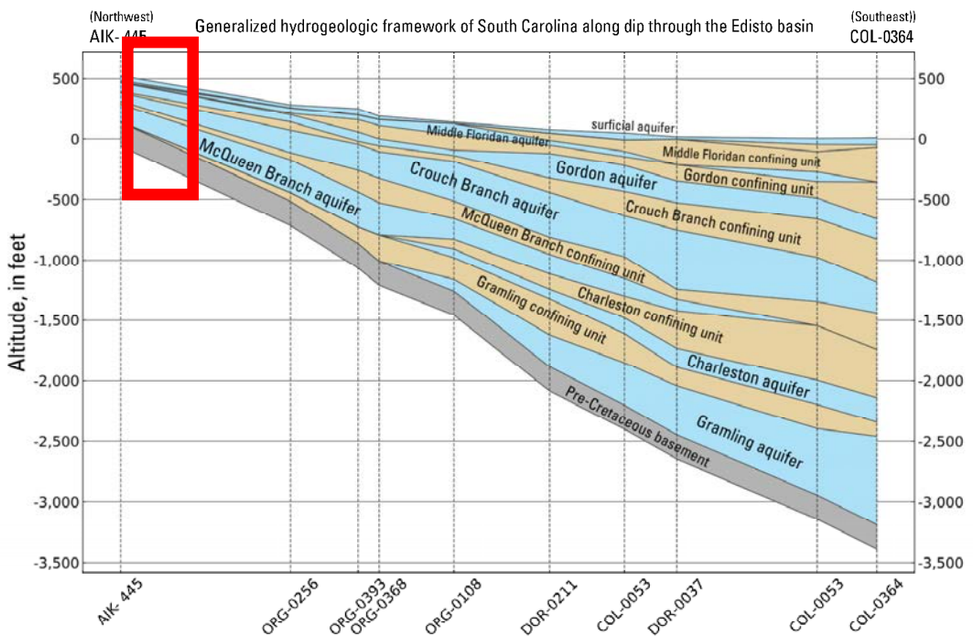
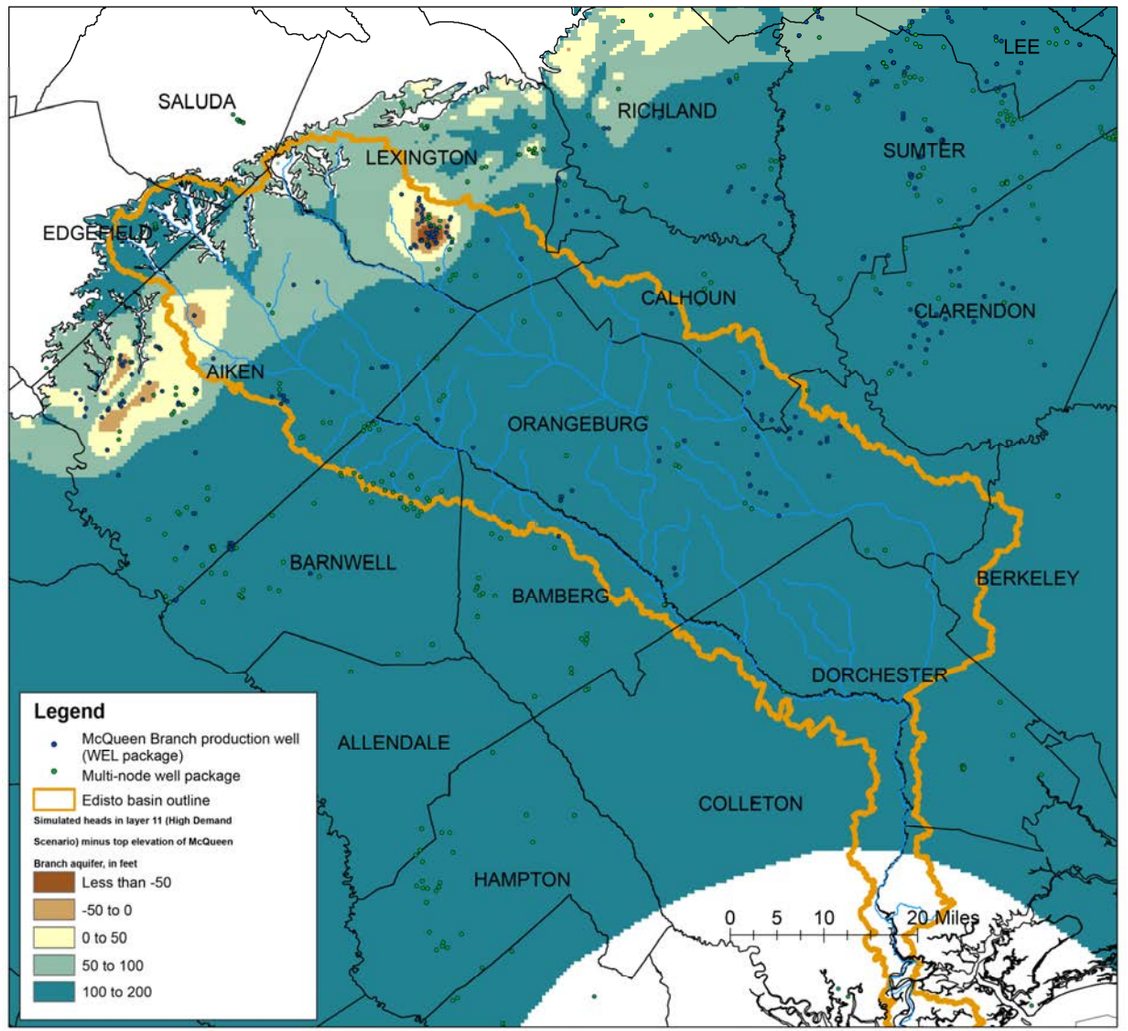


Simulated 2070 heads below top of aquifer in McQueen Branch (layer 11) Moderate Growth Scenario



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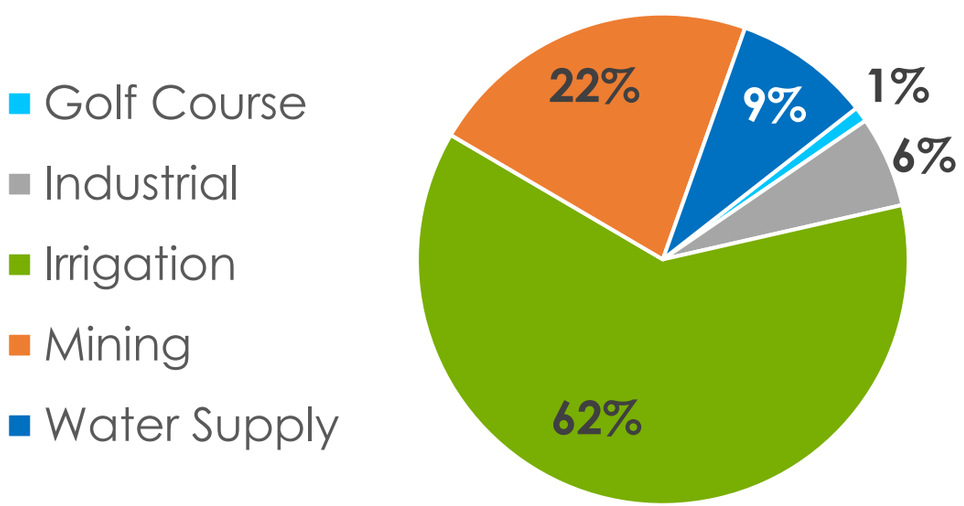
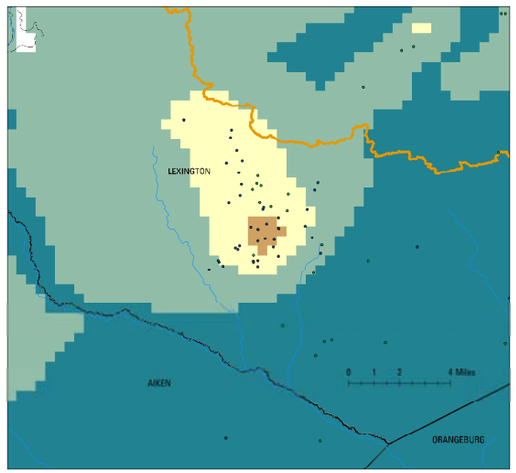
Lexington County 2018 Groundwater Use



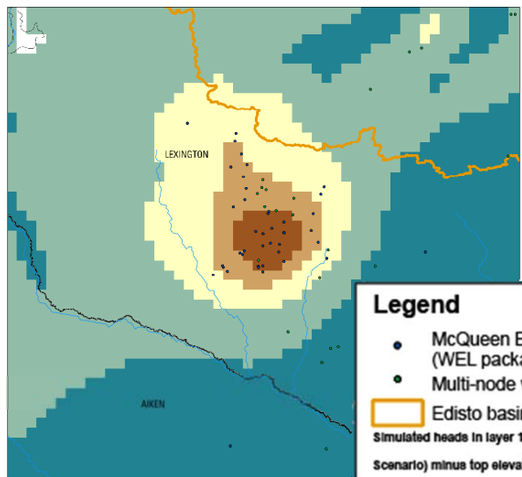
Source: DHEC

Simulated 2070 heads below top of aquifer in McQueen Branch (layer 11)

Current Scenario



Moderate Growth Scenario



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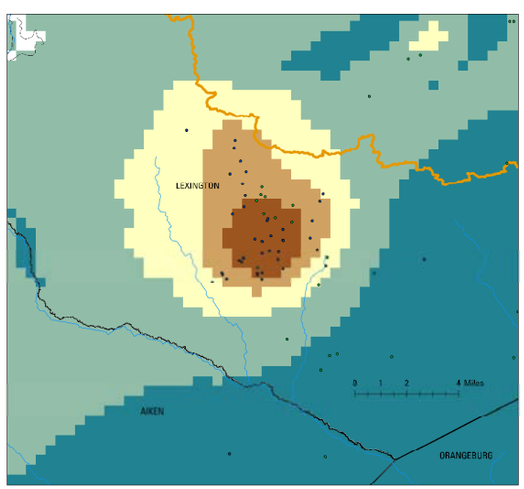
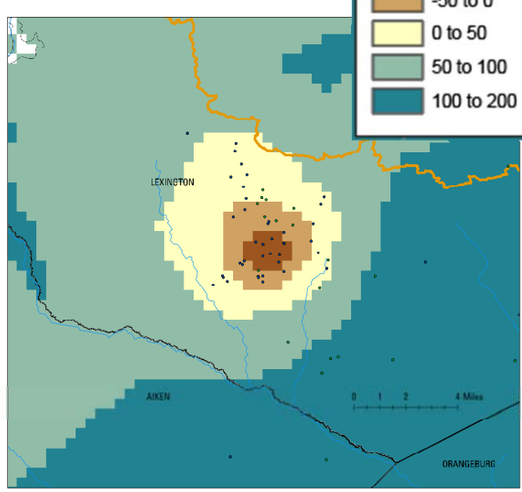
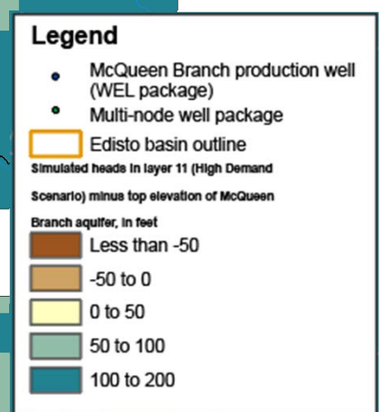


Permitted Scenario





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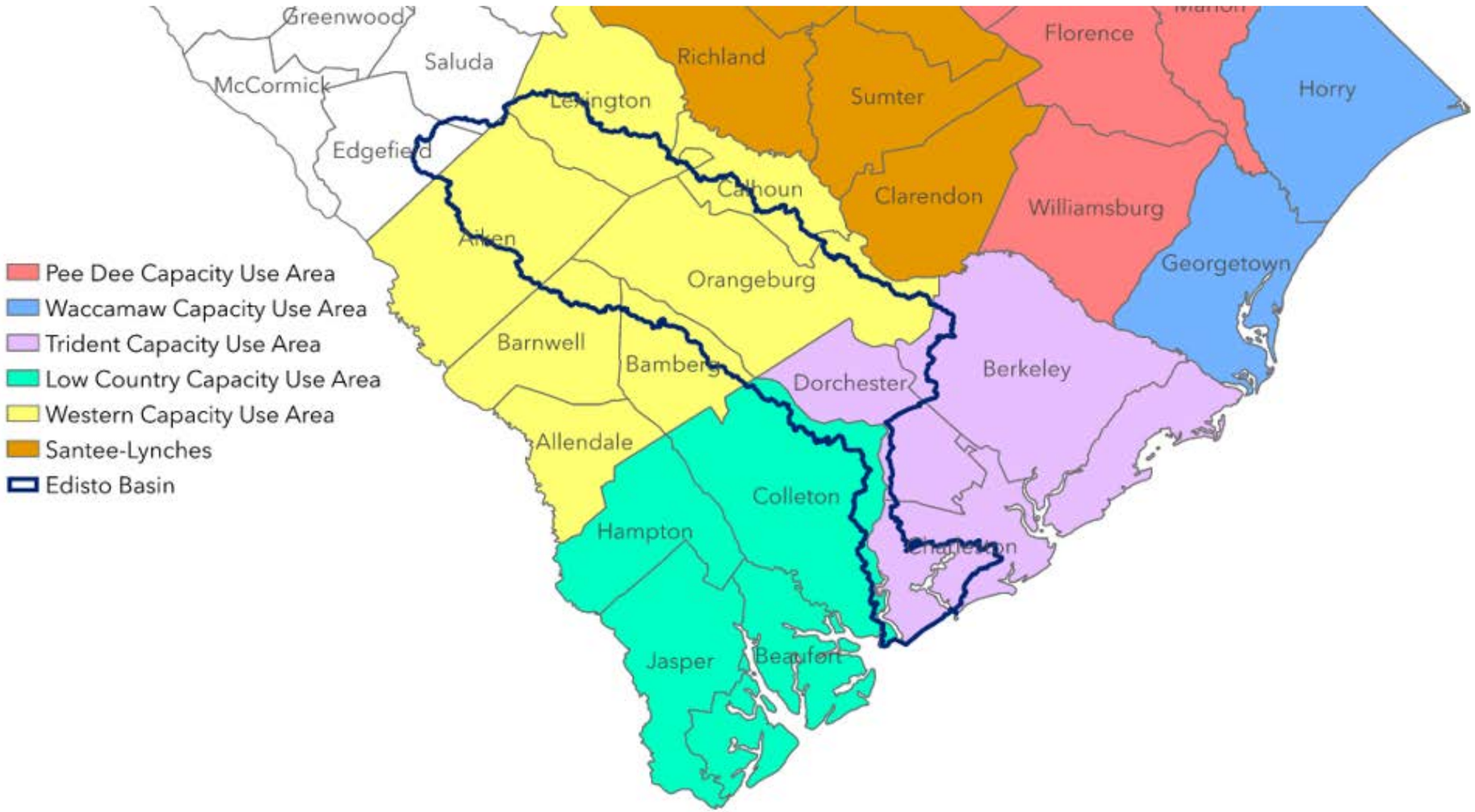
Groundwater Condition

- A limitation on the amount of groundwater that can be withdrawn from an aquifer, and which can be applied to evaluate **Groundwater Supply** for planning purposes.
- Examples:
  - Maintaining groundwater levels at or above a fixed elevation over a planning period
  - Preserving a certain volume of groundwater in storage
  - Maintaining water levels in the Gordon, Crouch Branch and McQueen Branch aquifers above the top of each aquifer

Groundwater Management Areas



Western Groundwater Management Area Strategies

1. Establish a comprehensive GW monitoring program
2. Identify geographic areas of concern and level/reduce pumping where appropriate
3. Review permit applications based on demonstrated reasonable use
4. Establish a conservation education plan for the general public and existing GW withdrawers
5. Manage through regulation and planning
6. Establish a plan for continual stakeholder engagement and awareness of groundwater development

2. Identify geographic areas of concern and level/reduce pumping where appropriate

Measures that SC DHEC may require applicants, permit holders, and groundwater withdrawers to take may include, but not be limited to, the following:

1. Reduce/level groundwater withdrawals in areas of concentrated pumping.
2. Reduce/level groundwater withdrawals in areas where it is found to be in the public interest or general welfare, or to protect the water resource.
3. Utilize other available freshwater aquifers than those currently used.
4. Utilize conjunctive use of aquifers, or waters of less desirable quality, where water quality of a specific character is not essential.

2. Identify geographic areas of concern and level/reduce pumping where appropriate

5. Utilize the groundwater model of the coastal aquifers that has been developed by the USGS and SC DNR to determine the potential for adverse effects.

6. Implement construction and use of observation or monitoring wells.

7. Implement reasonable and practical methods to conserve and protect the water resources and to avoid or minimize adverse effects of the quantity and quality of water available to persons whose water supply has been materially reduced or impaired as a result of groundwater withdrawals.

8. Implement such other necessary and appropriate control or abatement techniques as are technically feasible.

Do we want to use the groundwater model to evaluate the impacts of any strategies?

Examples:

1. What is the impact of agricultural water conservation strategies?
2. What is the impact of transitioning a portion of the pumping from the Crouch Branch aquifer to the (deeper) McQueen Branch aquifer in Calhoun County?

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Next Edisto RBC Meeting

Wednesday, April 20

Potential Informational Topic

- Groundwater Management Strategy Results
- Feasibility of Water Management Strategies

Potential RBC Discussion Items

- Surface Water Condition(s)
- Proposed Low Flow Management Strategy
- Consideration of all other previously evaluated water management strategies for inclusion in the Plan