



# Trident Capacity Use Area Groundwater Management Plan





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# Introduction

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*Berkeley-Charleston-Dorchester Council of Government*

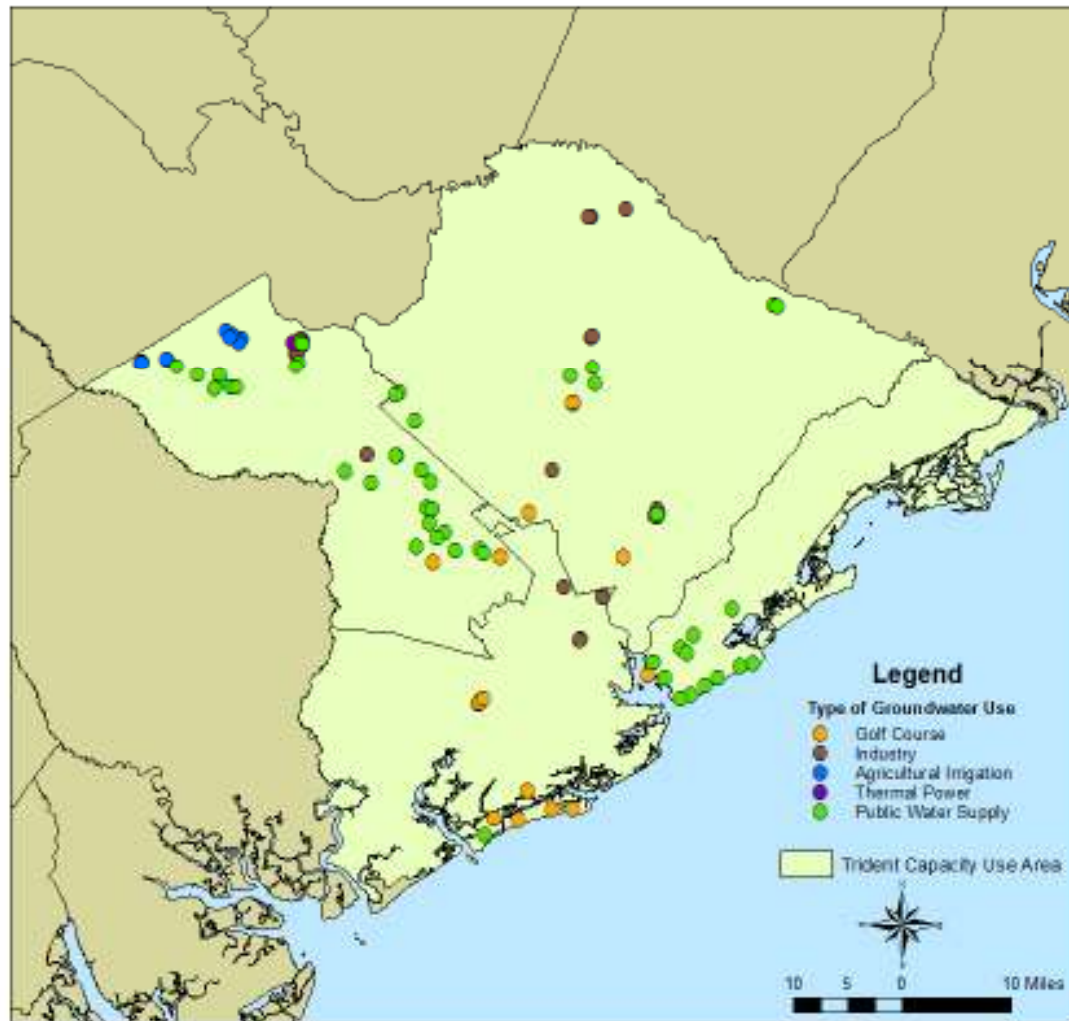


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# Trident Capacity Use Area Groundwater Management Plan Development

## Trident Capacity Use Area





# Permit Renewal Cycles

- Currently Capacity Use permits are issued on a five year cycle.
- All permits in a Capacity Use area are renewed on the same date.
- Reported water use is compared to current permitted limits.
- Adjustments to current limits may be made at renewal.



# Current Capacity Use permitting Criteria

- Application for Groundwater Withdrawal
  - Must provide documented evidence to aid in evaluation of the effects of groundwater withdrawal or use on the water resource and nearby existing users
- Construction Requirements
  - Must provide well construction details (diameter, depth, screen, etc.)
- Reasonable use criteria
  - Must provide information/calculation for the volume of water requested



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# Capacity Use Area Groundwater Management Plans



# Groundwater Management Plans Will:

- Establish conditions that support continued use and support long-term sustainability of the groundwater resource.
- Develop and implement a sustainable development strategy to guide permitting.
- Consists of 5 management strategies.





## Groundwater Management Strategies

- Reduction of groundwater withdrawals in areas of concentrated pumping.
- Review permit applications based on demonstrated reasonable use.
- Establish a comprehensive groundwater monitoring program.
- Establish a conservation education plan for the general public and existing groundwater users.
- Issue permits in accordance with the groundwater management plan.



# Groundwater Management Strategy 1

- Reduction of groundwater withdrawals in areas of concentrated pumping
  - Withdrawal from other available aquifers
  - Conjunctive use of groundwater and surface water where available
  - Implement reasonable and practical methods to conserve water resources



# Groundwater Management Strategy 2

- Review permit applications based on demonstrated reasonable use
  - Provide documentation that quantity requested is reasonable for the use proposed
  - Identify additional or alternative sources of water including surface water, effluent, recycled water or other sources
  - Identify conservation methods and practices to reduce or minimize water demand
  - Identify potential adverse effect on current withdrawers and strategies to minimize these effects



# Groundwater Management Strategy 3

- Establish a comprehensive groundwater monitoring program
  - Provide accurate data on the amount of water withdrawn by aquifer
  - Establish a water level network in each major aquifer



# Groundwater Management Strategy 4

- Establish a conservation education plan for the general public and existing groundwater withdrawers
  - Provide public education and outreach programs
  - Prepare for water shortages and appropriate responses



# Groundwater Management Strategy 5

- Issue permits in accordance with the groundwater management plan
  - Groundwater Management Plan Reports



# Management Plan Reports

- Groundwater Management Plan Reports will be compiled every 5 years, or length of the permitting cycle. The report will include:
  - Listing of permitted withdrawers, permit limits and average use
  - Total withdrawals by category and aquifer
  - Identification of areas of aquifer stress
  - List of withdrawer within stressed areas
  - Report is compiled one year prior to permit renewal



# Management Plan Reports

- Based on the information developed for the plan report, modifications of groundwater withdrawals in stressed areas may be presented for review
- Evaluation of current rates of withdrawal in stressed areas





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# Questions Permitting and Plan Overview



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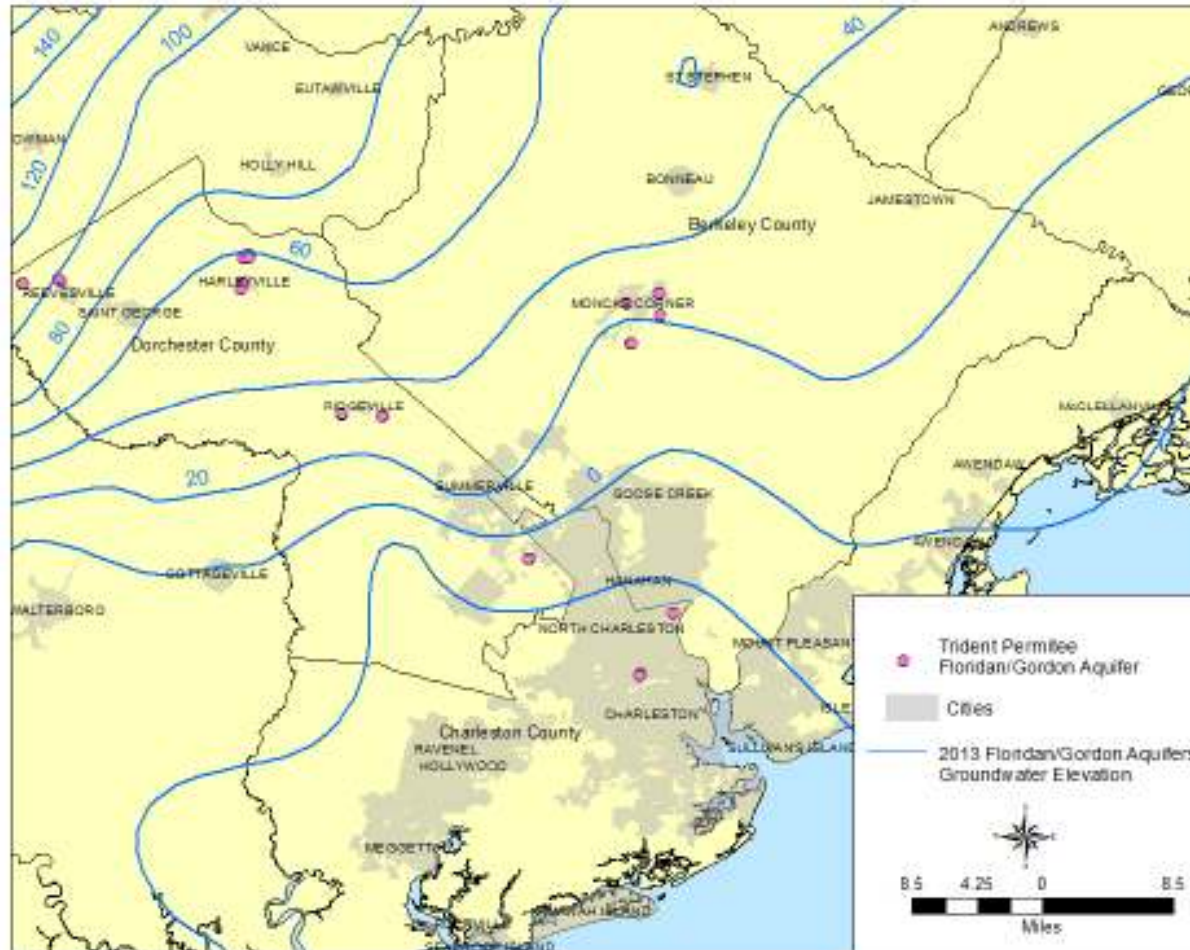
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# Current Conditions in the Trident Capacity Use Area



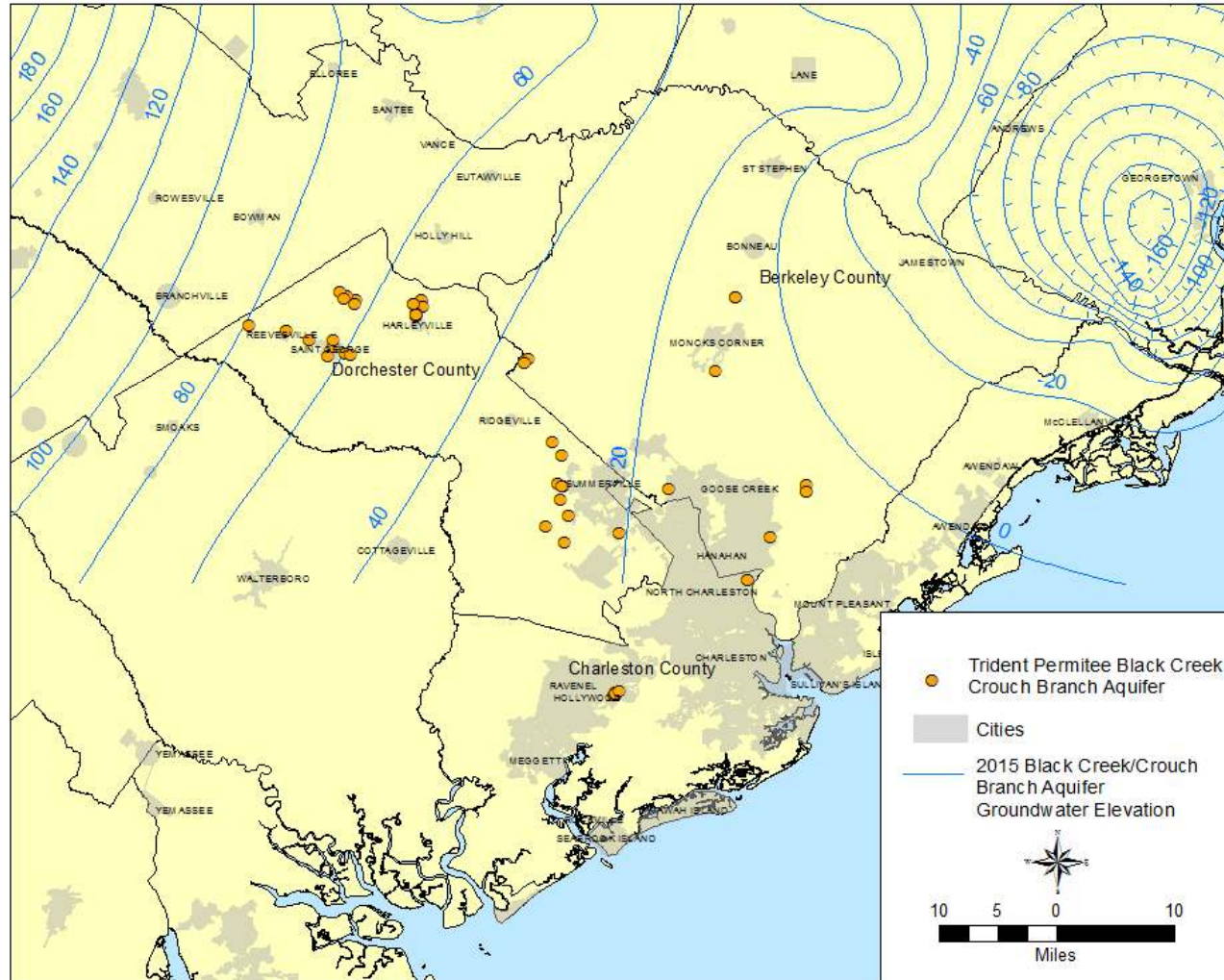


Floridan/Gordon Aquifers Groundwater Elevation-2013

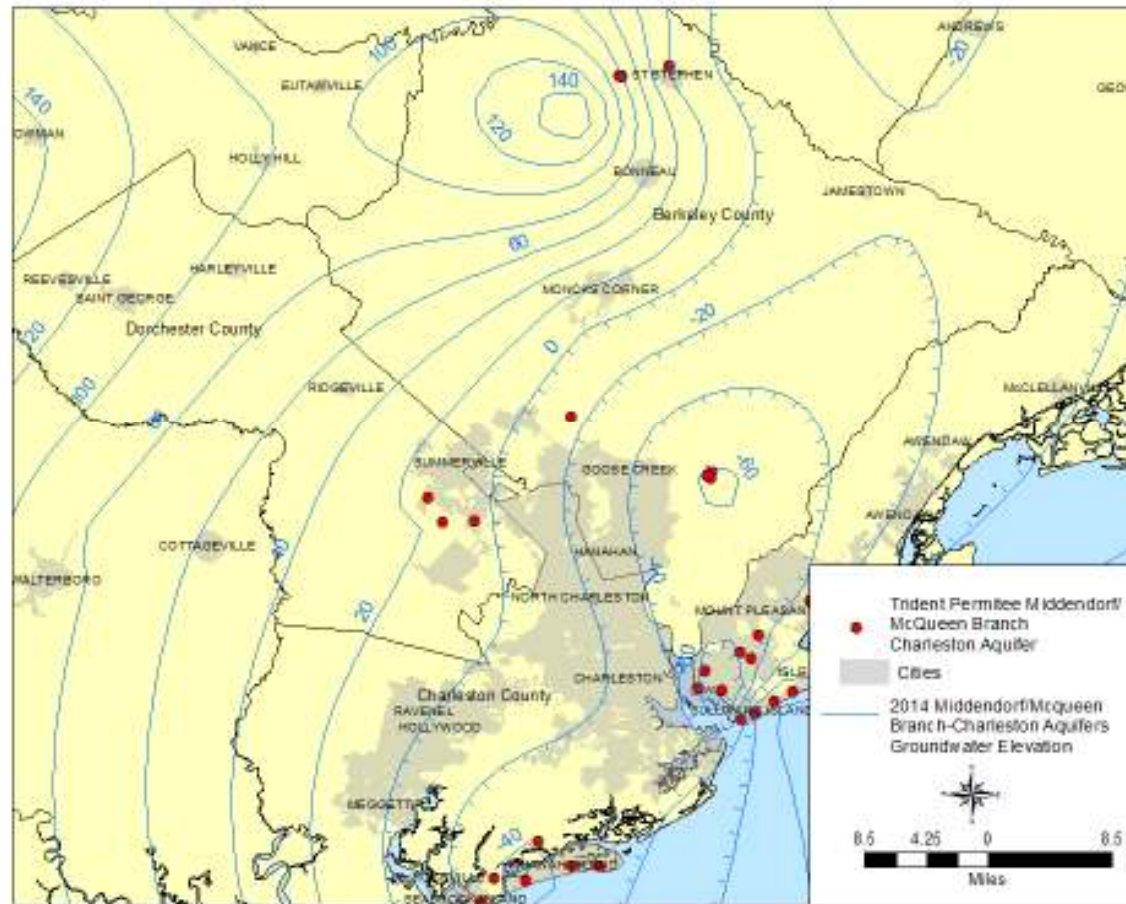




Black Creek/Crouch Branch Aquifer Groundwater Elevation-2015

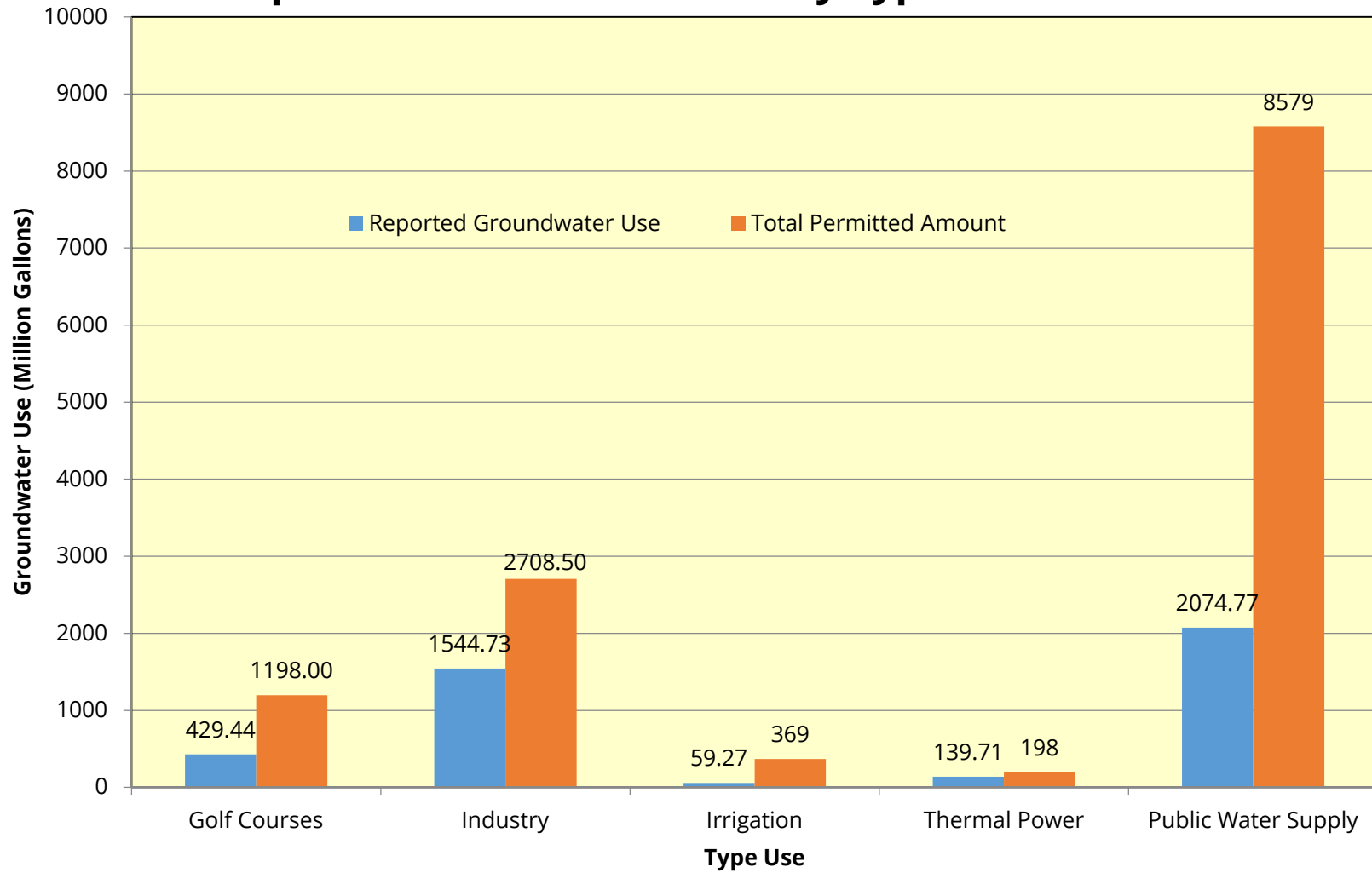


Middendorf/McQueen Branch-Charleston Aquifers Groundwater Elevation-2014



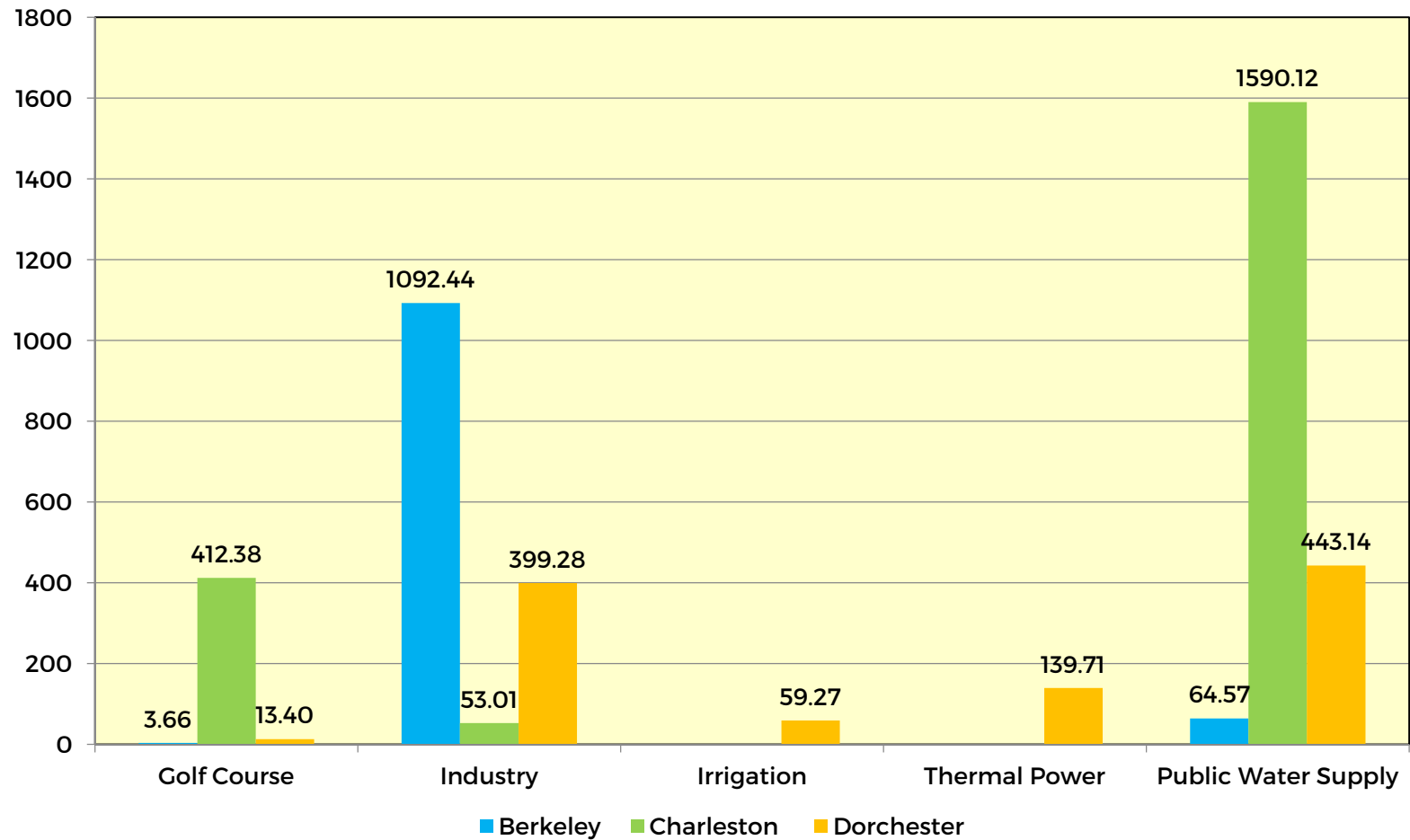


### Reported Groundwater Use By Type Use For 2015





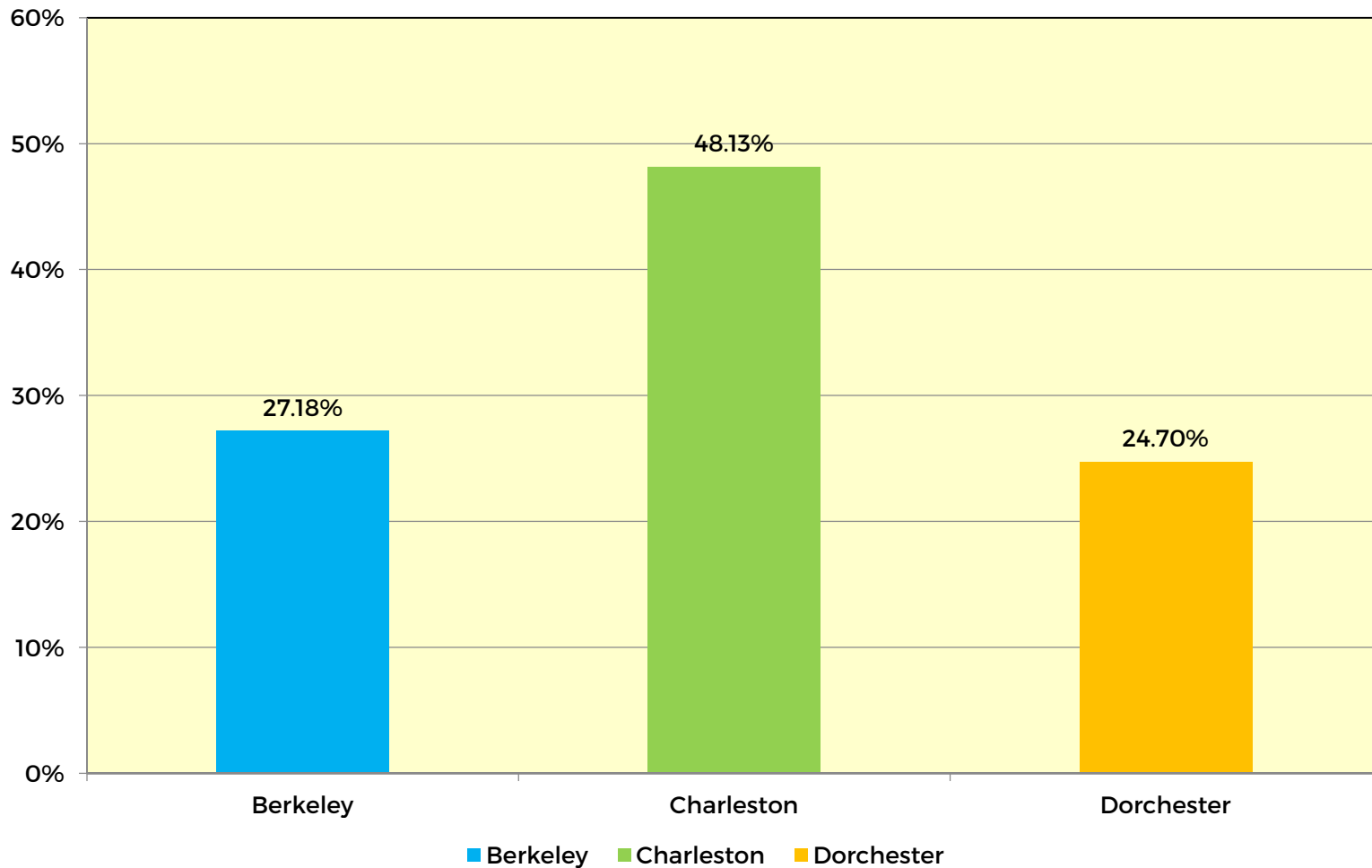
### Reported Use For Trident Capacity Use Permittees, 2015







### Percent of Total Permitted Reported Use By County





## Trident Capacity Use Area Reported Groundwater Use For Permitted Withdrawals By Type Use, 2015

| Type of Groundwater Use | Reported Groundwater Use For 2015 (Million Gallons) | Percent Use By Type | Total Permitted Amount (Million Gallons) |
|-------------------------|---|---------------------|--|
| Golf Courses            | 429.44  | 10.11%              | 1198.00                                  |
| Industry                | 1544.73   | 36.36%              | 2708.50                                  |
| Irrigation              | 59.27   | 1.40%               | 369                                      |
| Thermal Power           | 139.71  | 3.29%               | 198                                      |
| Public Water Supply     | 2074.77   | 48.84%              | 8579                                     |
| <b>Totals</b>           | <b>4247.93</b>                                      | <b>100.00%</b>      | <b>13052.50</b>                          |

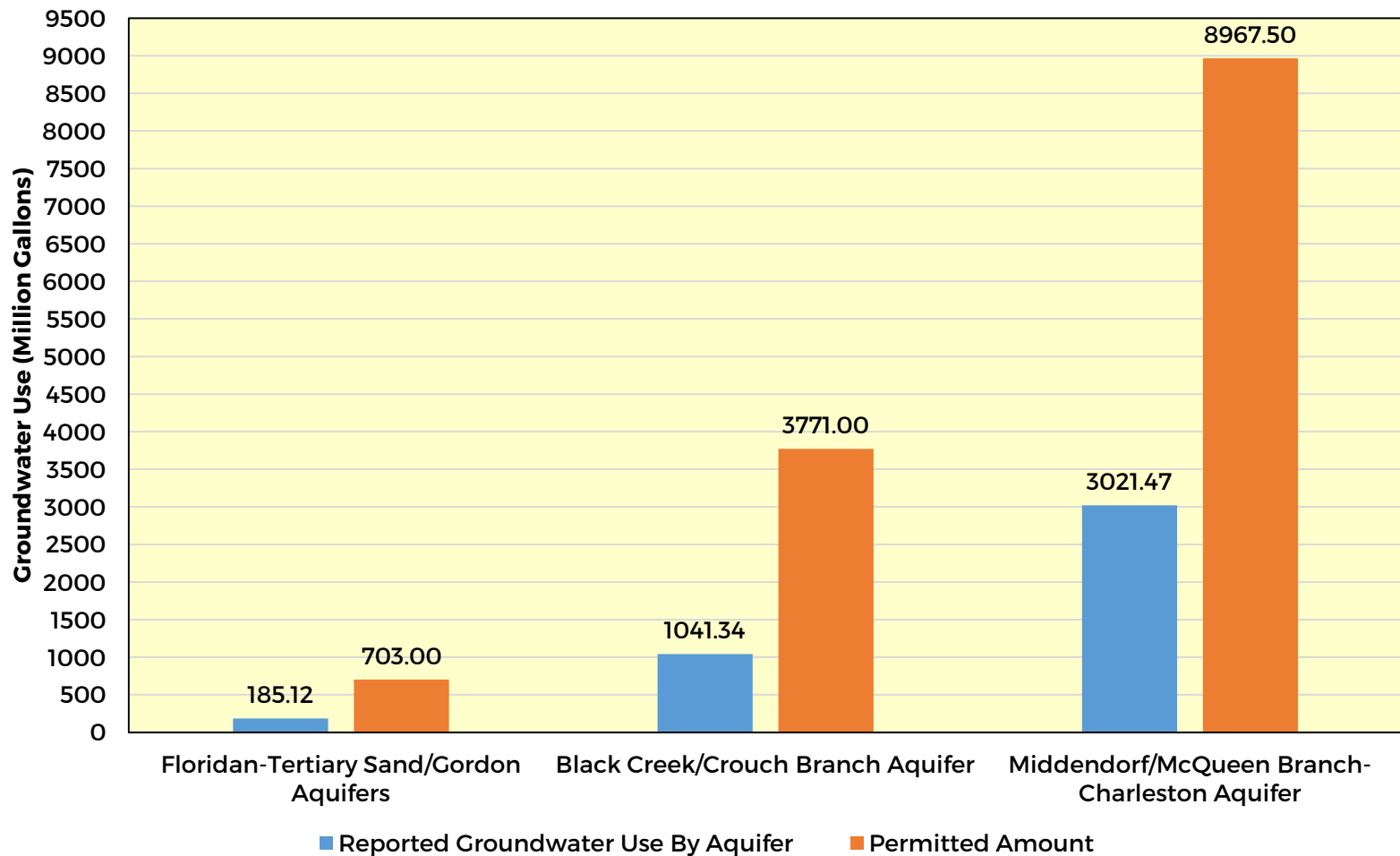


## Trident Capacity Use Area Reported Groundwater Use By Aquifer, 2015

| Aquifer   | Groundwater Use (Million Gallons) | Percent of Total Reported Groundwater Use | Total Permitted Amount (Million Gallons) |
|---|-----------------------------------|---|--|
| Floridan-Tertiary Sand/Gordon Aquifers            | 185.12                            | 4.36%                                     | 703.00                                   |
| Black Creek/Crouch Branch Aquifer                 | 1041.34                           | 24.51%                                    | 3771.00                                  |
| Middendorf/McQueen Branch-Charleston Aquifer      | 3021.47                           | 71.13%                                    | 8967.50                                  |
| <b>Total Reported Use By Permitted Facilities</b> | <b>4247.93</b>                    | <b>100.00%</b>                            | <b>13441.50</b>                          |



### Reported Groundwater Use By Aquifer For 2015





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### National Water Information System: Map View

Sites | Map Layers

Search Results

Export Sites

| Site Number   | Site Name   |
|---------------|---|
| 1225000004222 | 8PT-1010  |
| 1247000004728 | CHR- 14   |
| 1265000003268 | 88A- 431  |
| 1284000004435 | 48- 430   |
| 1303000002248 | WCL- 32   |
| 1400000002487 | SU- 393   |
| 1424000004428 | 18R- 422 KERSHAW COUNTY NR LIBERTY HILL (REDOUTH) |
| 1424000004438 | 18R- 425 KERSHAW COUNTY NR LIBERTY HILL (BEDROCK) |
| 1437000002288 | AMD- 326  |
| 1490000002288 | CFR- 21   |
| 1443300005026 | LAN- 497 LANCASTER COUNTY AIRPORT (REDOUTH)       |
| 1443300005026 | LAN- 498 LANCASTER COUNTY                         |

Search Parameters  
Explanation of Symbols

Esri, HERE, Garmin, NGA, USGS, NPS



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### National Water Information System: Map View

Sites Map Layers

Search Results

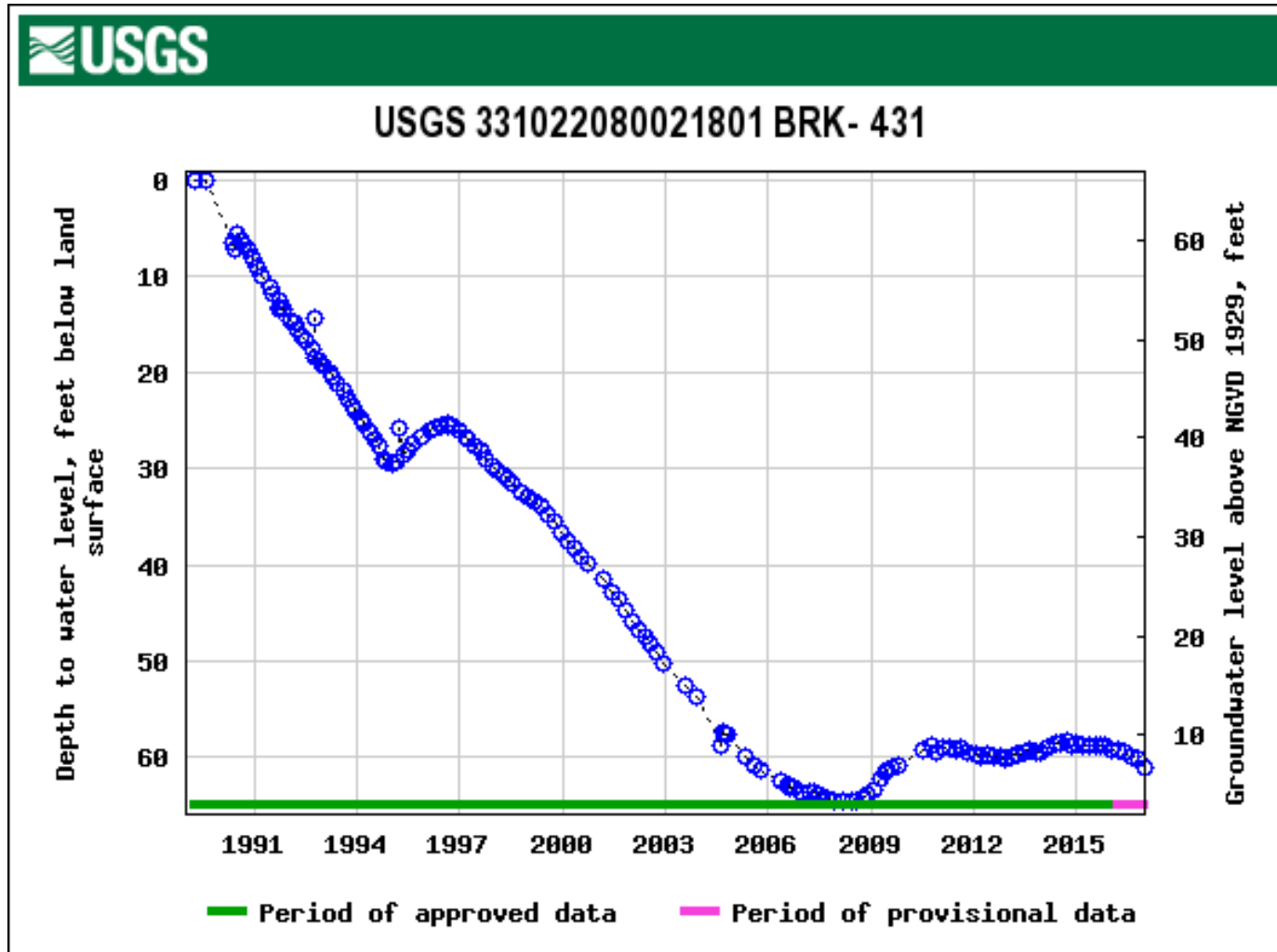
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| 1265000004228 | BRK-431   |
| 1284000004435 | AR-430  |
| 1303000004248 | MCR-32  |
| 1400000004247 | SU-399  |
| 1424000004432 | SR-422 KERSHAW COUNTY NR LIBERTY HILL (REDOUTH) |
| 1425000004433 | SR-425 KERSHAW COUNTY NR LIBERTY HILL (BEDROCK) |
| 1437000004226 | AMD-326   |
| 1490000004220 | CFR-21  |
| 1493000004226 | LAN-497 LANCASTER COUNTY AIRPORT (REDOUTH)      |
| 1493000004226 | LAN-498 LANCASTER COUNTY                        |

Search Parameters  
Explanation of Symbols

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## Middendorf/McQueen Branch Aquifer Groundwater Level Trends





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Search Results

Export Sites

| Site Number   | Site Name   |
|---------------|---|
| 3216930004322 | BFT-1010  |
| 326729379472  | CRN-14  |
| 321622000011  | BRK-421   |
| 321640001443  | AR-430  |
| 3216360000128 | WCR-32  |
| 3216390002467 | SU-155  |
| 322440000443  | KER-435 KERSHAW COUNTY NR LIBERTY HILL (REGOLITH) |
| 322440000443  | KER-435 KERSHAW COUNTY NR LIBERTY HILL (BEDROCK)  |
| 32714001288   | AND-236   |
| 324800001280  | CTR-21  |
| 324330000036  | LAV-497 LANCASTER COUNTY AIRPORT (REGOLITH)       |
| 324330000036  | LAV-498 LANCASTER COUNTY                          |

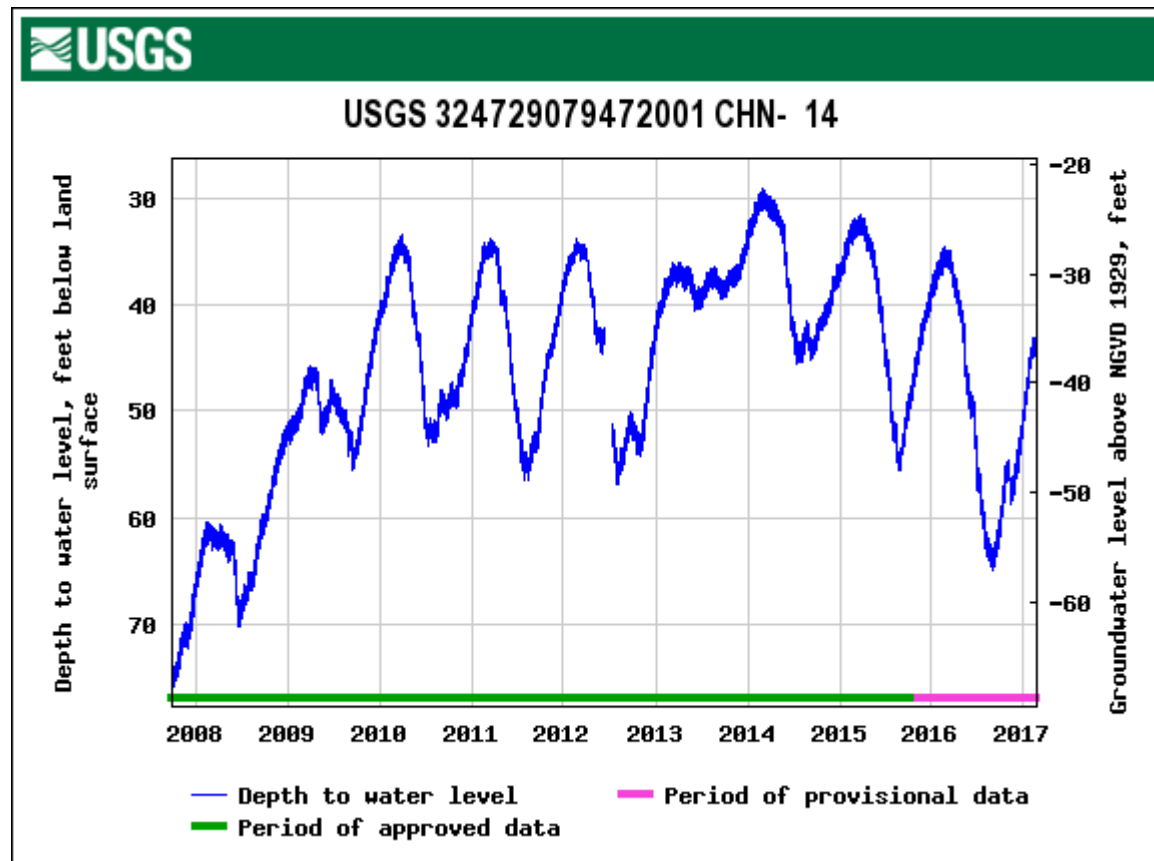
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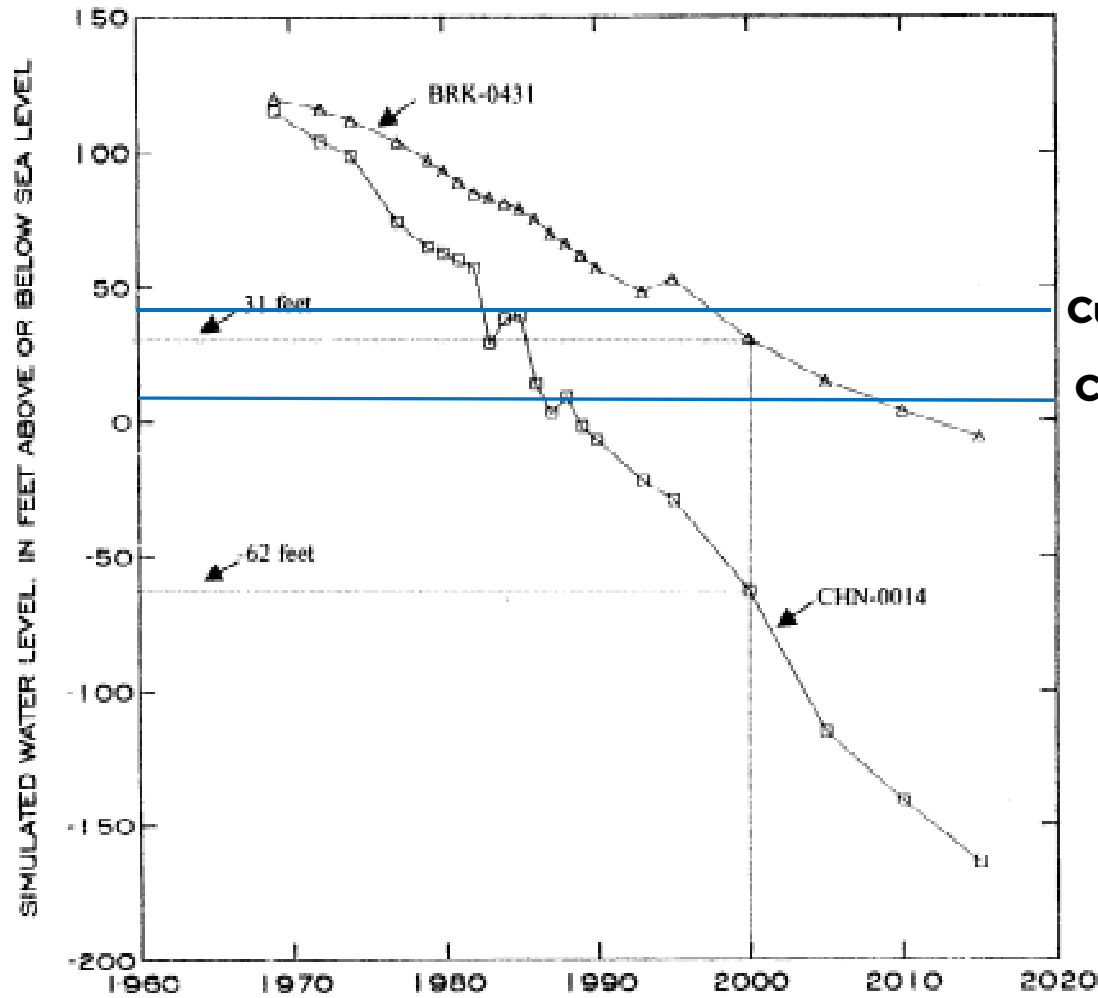
Explanation of Symbols

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## Middendorf/McQueen Branch Aquifer Groundwater Level Trends





**Current Level for BRK-431**

**Current Level for CHN-14**



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# Questions:

## Current Trident Capacity Use Area



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# Continued Opportunities for Engagement

Public Hearing – March 29<sup>th</sup>  
SCDHEC Board Meeting – May 11<sup>th</sup>

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Groundwater Level Monitoring Network (sponsoring a monitoring  
location)

Stakeholder Oversight Committee  
Outreach and Education

For more information please visit: [www.scdhec.gov/groundwaterplans](http://www.scdhec.gov/groundwaterplans)



## Path Forward

- Week of February 27<sup>th</sup>
  - Presentation and draft plan on website
- March 29<sup>th</sup>
  - Public Hearing – North Charleston City Hall, 5:30 p.m.
- May 11<sup>th</sup>
  - Plan presented to SCDHEC Board



## Contact Us

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