



Waccamaw Capacity Use Area: 2019 Renewal Year Assessment

Prepared by: Lance Foxworth, *Hydrogeologist*

Bureau of Water

Dr. James Michael Marcus, *Chief*

Water Monitoring, Assessment, and Protection Division

Robert Devlin, *Director*

Water Quantity Permitting Section

Alexander Butler, *Manager*

Technical Report Number: 004-2020

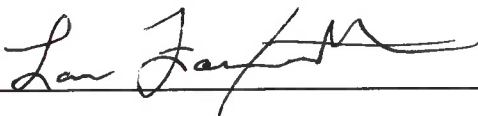
January 2020

Page Intentionally

Left Blank



Waccamaw Capacity Use Area: 2019 Renewal Year Assessment

Author and Editor: 

Lance Foxworth, *Hydrogeologist*

Section Manager: 

Alex Butler, *Manager*

Division Director: 

Robert Devlin, *Director*

January 2020

Introduction

The Groundwater Use and Reporting Act (Chapter 5, Section 49-5-20) states that the “general welfare and public interest require that the groundwater resources of the State be put to beneficial use to the fullest extent to which they are capable, subject to reasonable regulation, in order to conserve and protect these resources, prevent waste, and to provide and maintain conditions which are conducive to the development and use of water resources.” In accordance with the Groundwater Use and Reporting Act regulations (R.61-113) and the Waccamaw Groundwater Management Plan, all permits in the Waccamaw Capacity Use Area (Waccamaw CUA) are renewed on a quinquennial basis based on strategies and requirements outlined therein. During the renewal process, permits are reissued and updated in accordance with the previously mentioned documents, as well as from recommendations made in the preceding Groundwater Evaluation Report. The following assessment is made to summarize the 2019 Waccamaw CUA renewal year and evaluate adherence to the relevant documents.

Data and Analysis

Prior to the 2019 renewal year, 48 groundwater withdrawal permits were active in the Waccamaw CUA. During the renewal process, the sum of active permits reduced by 18.75% to 39 active permits. In Georgetown and Horry counties, two and seven permits inactivated, respectively (Figure 1). Inactivated permits occurred for one of the following reasons: 1) the historic reported water usage consistently fell below the permitting threshold requirements (seven permits); 2) a facility abandoned wells/operation (one permit); or 3) a facility combined all their permits under one common permit (one permit) (Table 1).

Sum of Active Permits by Area

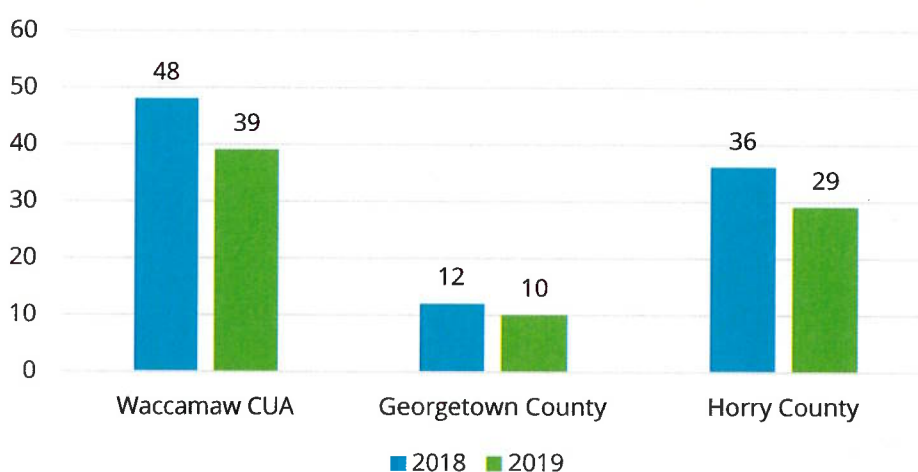


Figure 1

Prior to the 2019 renewal year, 9,656.612 million gallons per year (MGY) of groundwater was permitted to be withdrawn in the Waccamaw CUA. During the renewal process, the sum of total permitted use (TPU) in the area was reduced by 38.62% (Figure 2). In Georgetown and Horry counties, the sum of TPU was reduced by 15.18% and 45.72%, respectively. Out of the 39 permits reissued in 2019, 26 permits were reissued at the same TPU as the prior cycle, while two permits were increased and 11 permits were reduced in TPU (Table 1). Increases in TPU were only issued in Horry county. In Georgetown and Horry counties, three and eight permits' TPU were reduced, respectively.

Sum of TPU in MGY by Area

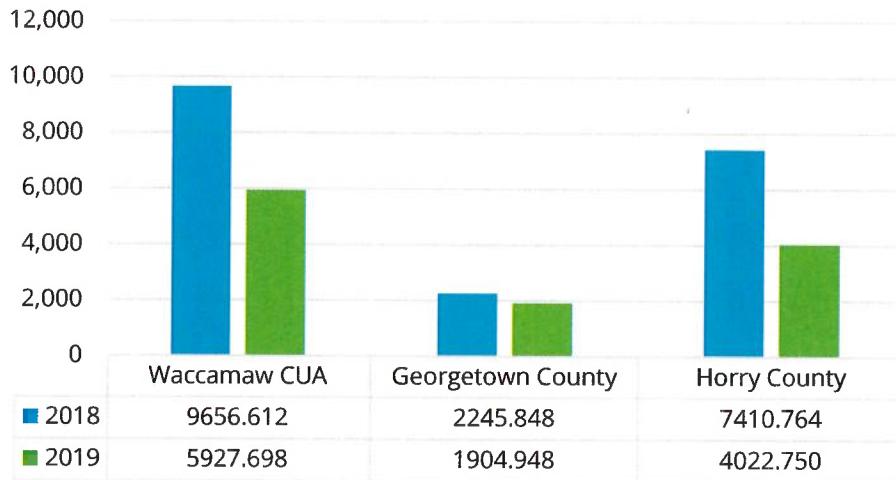


Figure 2

Prior to the 2019 renewal year, permits averaged 201.179 MGY in TPU within the Waccamaw CUA. The Waccamaw CUA average TPU was reduced by 24.45% resulting in an average of 151.992 MGY (Figure 3). Horry county permitting decisions account for more reduction than Georgetown. This is due to higher magnitudes of TPU reductions to permits inactivated in Horry, which yielded a 32.61% decrease for the county. Georgetown county saw a modest 1.79% increase in average TPU because of lower magnitudes of TPU reductions to the amount of permits inactivated.

Average of TPU in MGY by Area

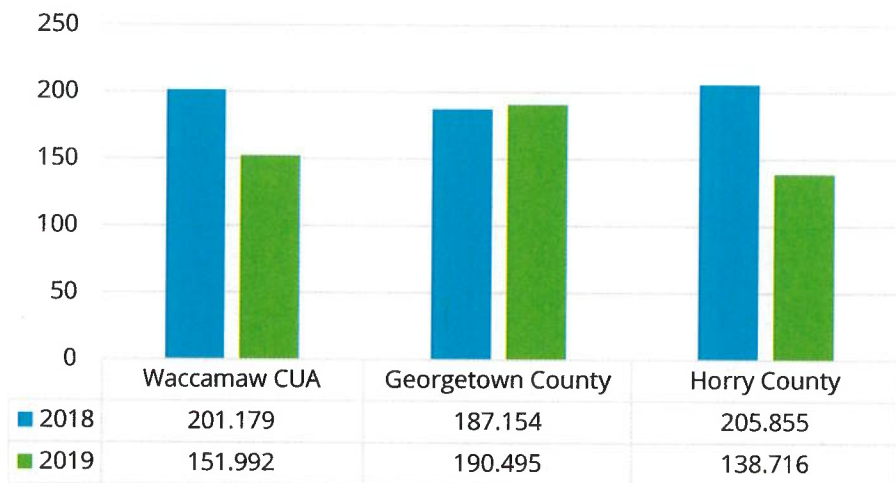


Figure 3

The Waccamaw CUA consists of four different permitted use types: golf courses (GC), industry (IN), irrigation (IR), and water supply (WS). The sum of active permits in the Waccamaw CUA decreased for each use type except for WS which remained constant (Figure 4). Out of the nine permits that were inactivated, five were GC, two were IN, and two were IR (Table 1). All five GC permits inactivated due to historic evidence of reported water usage consistently falling below the permitting threshold requirement. Reasons GCs are no longer meeting permitting thresholds are: increased reliance on surface water options, facilities tying into local water suppliers, and improved conservation and watering technologies. Same as the prior permitting cycle, GCs still account for a plurality (48.72%) of the active permits in the area (Figure 4).

Sum of Active Permits by Use Type (Waccamaw CUA)

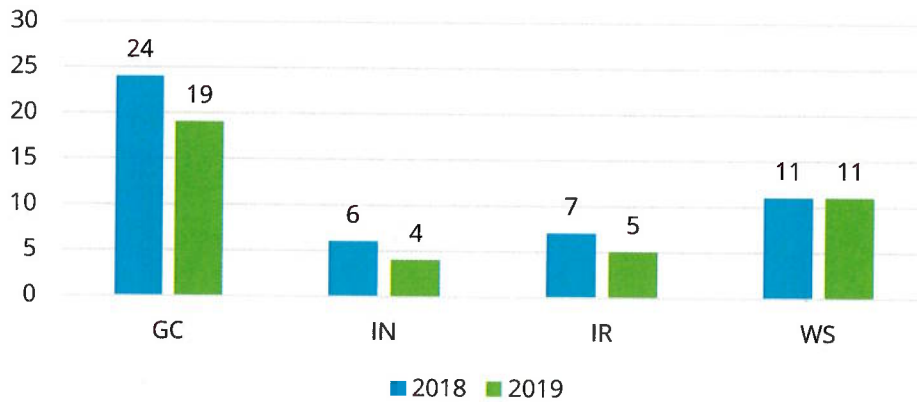


Figure 4

Although the Waccamaw CUA has a high number of GC permits, nearly all are issued in Horry county. Georgetown county, is predominantly IN and WS in number of active permits for the county (Figure 5). Note: Georgetown county now has no active IR permits in the county due to the one IR facility consistently reporting water usage below the permitting threshold requirement.

Sum of Active Permits by Use Type (Georgetown County)

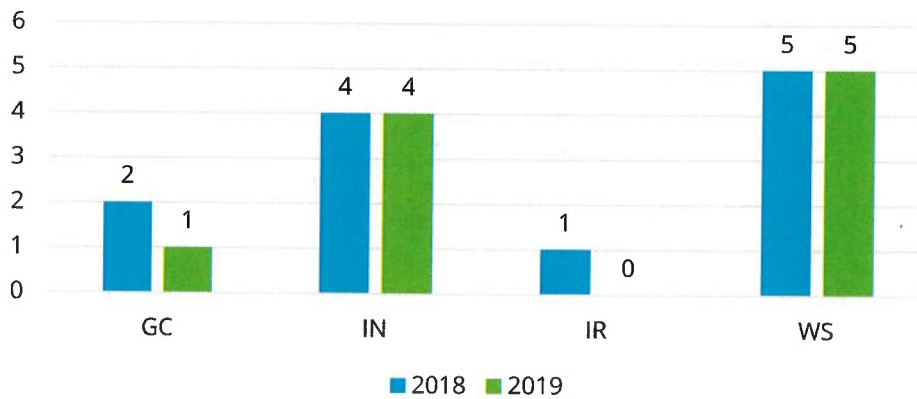


Figure 5

Prior to and after the renewal process, Horry county maintained triple the number of active permits as Georgetown county. GC permits in Horry county alone outnumber all Georgetown county permits. Note: Horry county now has no active IN permits in the county due to the one IN facility abandoning their wells and one IN facility consistently reporting water usage below the permitting threshold requirement (Figure 6).

Sum of Active Permits by Use Type (Horry County)

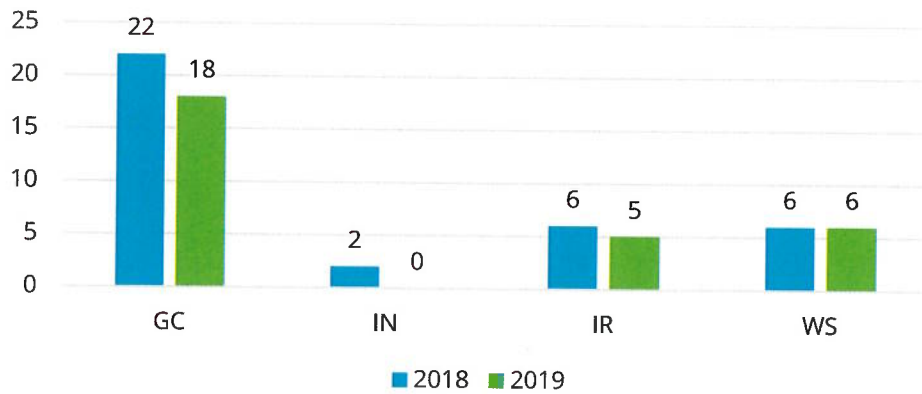


Figure 6

During the 2019 renewal process, TPU was reduced across all use types (Figure 7). The most significant reductions occurred for WS permits. Prior to the 2019 renewal process, WS accounted for 79.47% of Waccamaw CUA TPU compared to 76.98% after permits reissued. In terms of water use, WS is the highest continued demand on groundwater in the area. Assessment during the renewal process found that WS permit TPUs typically were higher than historic reported water usages. In accordance with reasonable use and the Waccamaw Groundwater Management Plan, four WS permits across both counties were reduced.

Sum of TPU in MGY by Use Type (Waccamaw CUA)

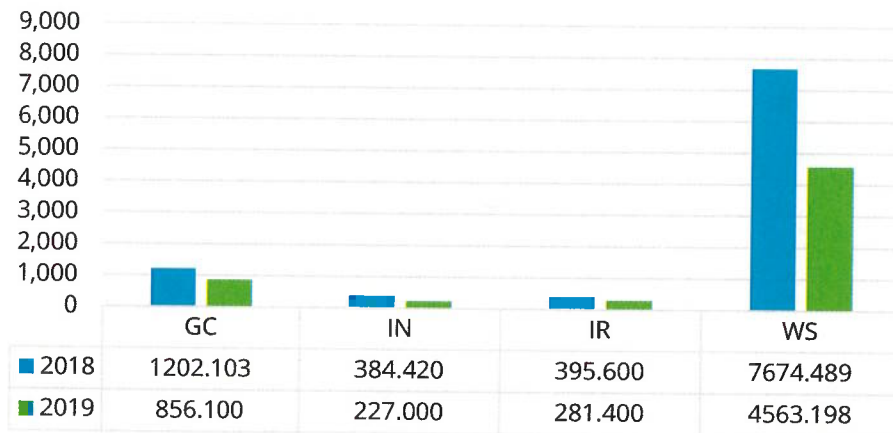


Figure 7

During the 2019 renewal process, the sum of TPU was reduced across all use types in Georgetown county (Figure 8). Notably, IR was reduced by 100%, and GC was reduced by 80%.

Sum of TPU in MGY by Use Type (Georgetown County)

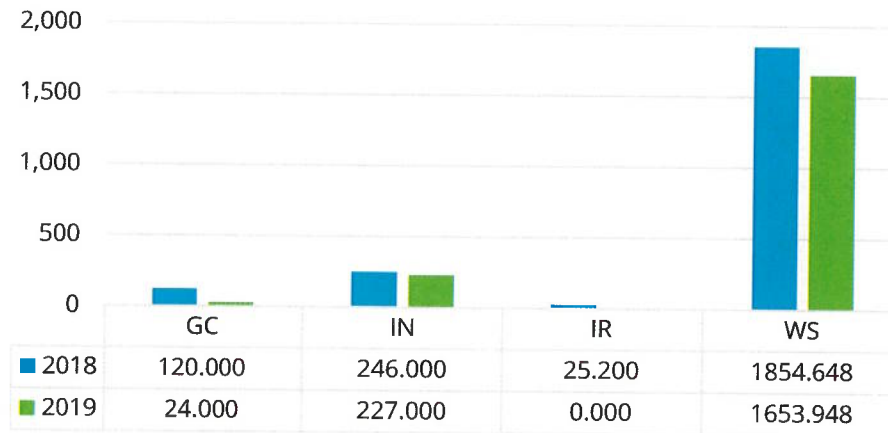


Figure 8

During the 2019 renewal process, the sum of TPU was reduced across all use types in Horry county (Figure 9). Notably, WS was reduced by 50.01%. However, two permits' TPU increased. Increases were issued for one IR and one WS permits for 27 and 38.34 MGY, respectively. The sum of TPU increases is significantly less than the sum of TPU reductions for Horry county by a factor of 48:1. Note: of the 2,910.591 MGY reduction in the sum of TPU for WS in Horry county, 2,793.041 MGY of the reduction is attributed to one WS facility's TPU adjustment.

Sum of TPU in MGY by Use Type (Horry County)

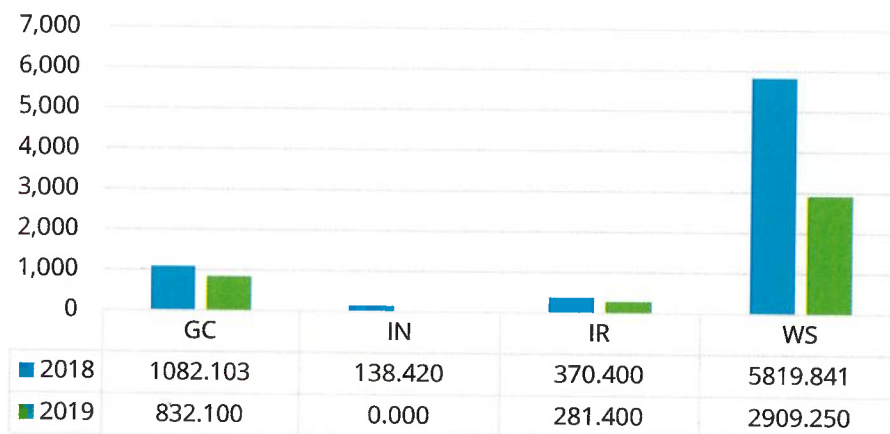


Figure 9

The following charts and data use averages based on the last 5 years (2014-2018) of water use reported (WUR) to the Department (Figure 10). The charts and data compare the sum of the TPU for each category (area, county, and use type) prior to and after the renewal process to the last five years of averaged WUR. Through the permit renewal process, the percent of unused TPU diminished across the board for all categories (Figure 10).

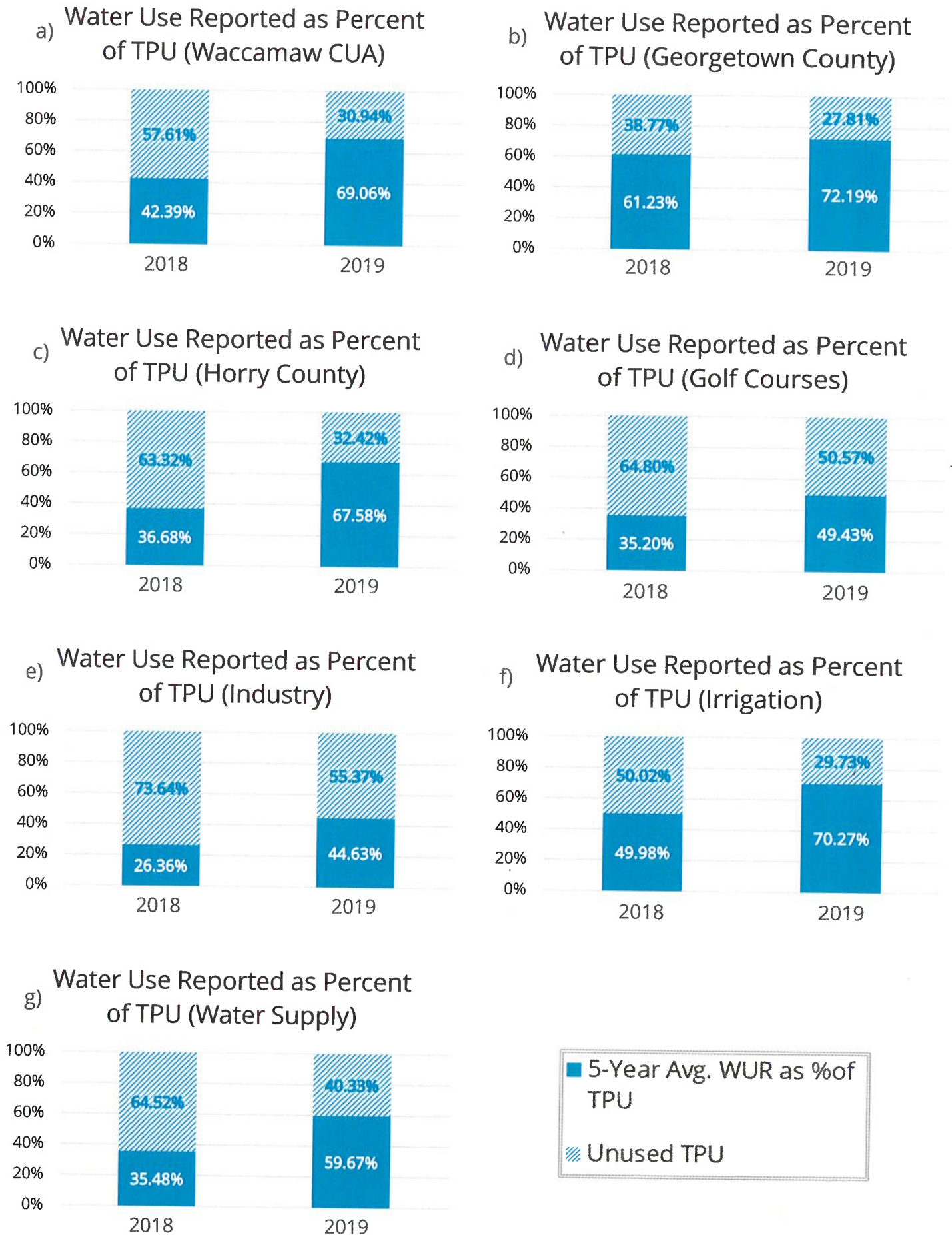


Figure 10

UserID	Facility	2018 TPU	2019 TPU	Change in TPU	5-Year Avg. Reported Water Use	5-Year Avg. as % of 2018 TPU	5-Year Avg. as % of 2019 TPU	Point Change of 5-Year Avg. as % of TPU
22GC006	Founders Club	70.000	24.000	-46.000	0.752	1.07%	3.13%	2.06%
22GC011	Pawley's Plantation	50.000	-	-50.000	21.836	43.67%	Inactivated	Inactivated
22IN001	3V Sigma USA	145.000	126.000	-19.000	78.908	54.42%	62.63%	8.21%
22IN002	Santee Cooper - Winyah Station	5.000	5.000	0.000	0.000	0.00%	0.00%	0.00%
22IN008	International Paper Santee Woodyard	60.000	60.000	0.000	12.006	20.01%	20.01%	0.00%
22IN052	Interfor U.S. Inc, Georgetown Div.	36.000	36.000	0.000	8.974	24.93%	24.93%	0.00%
22IR038	Plantersville Turf Farms	25.200	-	-25.200	5.100	20.24%	Inactivated	Inactivated
22WS001	Georgetown County Water & Sewer District	1,024.000	823.300	-200.700	652.007	63.67%	79.19%	15.52%
22WS002	City of Georgetown	195.950	195.950	0.000	151.917	77.53%	77.53%	0.00%
22WS003	Georgetown Rural Community Water District	258.000	258.000	0.000	158.006	61.24%	61.24%	0.00%
22WS004	Town of Andrews	300.000	300.000	0.000	224.953	74.98%	74.98%	0.00%
22WS007	Brown's Ferry Water Co.	76.698	76.698	0.000	60.630	79.05%	79.05%	0.00%
26GC001	Azalea Sands Golf Club	50.000	36.000	-14.000	3.539	7.08%	9.83%	2.75%
26GC003	Beachwood Golf Club	65.000	65.000	0.000	54.990	84.60%	84.60%	0.00%
26GC009	Myrtle Beach National GC	55.000	55.000	0.000	7.869	14.31%	14.31%	0.00%
26GC010	Possum Trot Golf Club	60.000	-	-60.000	32.876	54.79%	Inactivated	Inactivated
26GC013	Surf Golf & Beach Club	75.000	75.000	0.000	47.722	63.63%	63.63%	0.00%
26GC020	Midway Par Three	25.000	25.000	0.000	10.009	40.04%	40.04%	0.00%
26GC021	Pine Lakes International Country Club	72.000	72.000	0.000	39.952	55.49%	55.49%	0.00%

UserID	Facility	2018 TPU	2019 TPU	Change in TPU	5-Year Avg. Reported Water Use	5-Year Avg. as % of 2018 TPU	5-Year Avg. as % of 2019 TPU	Point Change of 5-Year Avg. as % of TPU
26GC025	Eagle Nest Golf Club	25.000	25.000	0.000	14.779	59.12%	59.12%	0.00%
26GC028	Tidewater Golf (Former Southern Land and Golf)	70.000	70.000	0.000	19.820	28.31%	28.31%	0.00%
26GC029	River Hills Golf & Country Club - Founders Group	30.000	30.000	0.000	0.813	2.71%	2.71%	0.00%
26GC034	Heather Glen Golf Links	54.730	-	-54.730	14.046	25.66%	Inactivated	Inactivated
26GC036	City of Myrtle Beach Whispering Pines Golf Course	43.033	2.600	-40.433	3.864	8.98%	148.62%	139.64%
26GC041	Valley Club at Eastport	24.840	-	-24.840	0.317	1.28%	Inactivated	Inactivated
26GC043	Witch Golf Links	25.000	25.000	0.000	1.417	5.67%	5.67%	0.00%
26GC044	Legends Golf Resorts	99.000	99.000	0.000	47.532	48.01%	48.01%	0.00%
26GC046	Indigo Creek Golf Club	36.000	-	-36.000	5.561	15.45%	Inactivated	Inactivated
26GC051	Harbour View LLC	36.000	36.000	0.000	11.961	33.23%	33.23%	0.00%
26GC054	Glen Dornoch LLC	70.000	70.000	0.000	34.952	49.93%	49.93%	0.00%
26GC055	Tupelo Bay Golf Complex	36.000	32.000	-4.000	10.739	29.83%	33.56%	3.73%
26GC056	International Club LLC	40.000	40.000	0.000	21.207	53.02%	53.02%	0.00%
26GC058	World Tour Golf Links	54.500	54.500	0.000	12.262	22.50%	22.50%	0.00%
26GC060	Rose Park, LLC - Crown Park Golf Club	36.000	20.000	-16.000	4.376	12.16%	21.88%	9.72%
26IN002	Canfor Southern Pine - Conway Mill	40.020	-	-40.020	0.000	0.00%	Inactivated	Inactivated
26IN007	Santee Cooper - Grainger Station	98.400	-	-98.400	1.433	1.46%	Inactivated	Inactivated
26IR019	Coastal Carolina University	36.000	36.000	0.000	2.954	8.21%	8.21%	0.00%
26IR020	Burroughs and Chapin - Broadway	100.000	100.000	0.000	96.676	96.68%	96.68%	0.00%
26IR025	The Sod Farm (Squires Tree Farm & Nursery)	50.000	77.000	27.000	45.420	90.84%	58.99%	-31.85%

UserID	Facility	2018 TPU	2019 TPU	Change in TPU	5-Year Avg. Reported Water Use	5-Year Avg. as % of 2018 TPU	5-Year Avg. as % of 2019 TPU	Point Change of 5-Year Avg. as % of TPU
26IR027	Myrtle Trace HOA	42.400	42.400	0.000	17.969	42.38%	42.38%	0.00%
26IR028	GDMB Operations LLC-Bear Branch	130.000	26.000	-104.000	22.340	17.18%	85.92%	68.74%
26IR034	Coastal Carolina University - Atlantic Fields	12.000	-	-12.000	7.267	60.56%	Transferred	Transferred
26WS001	City of North Myrtle Beach	453.600	310.670	-142.930	157.110	34.64%	50.57%	15.94%
26WS002	Bucksport Water System, Inc.	500.000	538.340	38.340	390.562	78.11%	72.55%	-5.56%
26WS003	City of Myrtle Beach	17.000	17.000	0.000	5.142	30.25%	30.25%	0.00%
26WS005	Ocean Lakes Family Campground	128.000	128.000	0.000	97.064	75.83%	75.83%	0.00%
26WS009	Grand Strand Water & Sewer Authority	4,661.240	1,868.200	-2,793.040	1,435.717	30.80%	76.85%	46.05%
26WS011	Lakewood Camping Resort, Inc.	60.000	47.040	-12.960	38.158	63.60%	81.12%	17.52%
	Total	9,656.611	5,927.698	-3,728.913	4,093.504	-	-	-
	Average	201.179	123.494	-77.686	85.281	42.39%	69.06%	7.50%

Table 1: Waccamaw Capacity Use Area Renewal Data (2018 TPU, 2019 TPU, Change in TPU, and 5-Year Avg. Reported Water Use are measured in MG). Color Code Meanings: RED = Transfer or Inactivated Permit; YELLOW = No Change; GREEN = Reduction in Permit with an Increase in water use reported as percent of TPU; BLUE = Increase in Permit with a Reduction in water use reported as percent of TPU.

Compliance

In accordance with the Groundwater Use and Reporting Regulation 61-113, permits are “renewed by filing a completed application in compliance” with relevant laws and regulations “at least ninety days prior to its expiration.” Nine out of 48 permit holders failed to meet the deadline as set forth in the regulations. All permitted facilities received first communications about the renewal deadline six months prior to the renewal submission deadline. After courtesy attempts to contact permit holders were made after the submittal deadline, the nine uncompliant facilities received notices of violations. Pursuant to this compliance effort, all nine remaining permit holders’ violations reached amenable resolutions and renewal permits were either issued or inactivated.

Conclusions

Water Quantity program staff adhered to the relevant statutes, regulations, and management plan of the Waccamaw CUA in the issuance of permits for the 2019 renewal year. Staff were successful in achieving full compliance, obtaining up-to-date facility information, and updating permits to meet all standards. Staff reduced total permitted use in the area by 24.45%. Reductions were made to conserve and protect groundwater resources, prevent waste, while still providing and maintaining conditions which are conducive to the development and use of water resources.

Water Quantity program staff reduced the amount of unused TPU across all categories; therefore, effectively evaluating permits based on demonstrated reasonable use. Staff decreased unused TPU based on averaged WUR from the last five years from 57.61% to 30.94% for the entire Waccamaw CUA (Figure 10a). Out of all the categories based on preceding five years of WUR (Figure 10), GC and IN permits in the Waccamaw CUA remained relatively higher in terms of unused TPU (Figure 10d and 10e).

In accordance with the 2018 *Waccamaw Capacity Use Area: Groundwater Evaluation*, staff made decisions based on six recommendations made therein due to existing and potential adverse conditions in the area. In regard to recommendation one, staff placed holds on withdrawal rates from any well screened in the Crouch Branch aquifer in both counties. In regard to recommendation two, staff did not permit any new construction of wells in the Crouch Branch aquifer in both counties. In regard to recommendation three, staff constrained any increases in permitted use to McQueen Branch or surficial aquifers. In regard to recommendation four, no explicit demands for transitioning to surface water were made to a facility; however, permit reductions encourage facilities to diversify source water options, including surface water sources. Many facilities in the region, especially GCs, have made efforts on their own behalf to transition. In regard to recommendation five, a targeted public education campaign was not conducted by staff. Staff did require facilities that submitted unsatisfactory Best Management Plans to improve them to a higher standard. Staff are developing plans to implement targeted groundwater conservation education campaigns across all Capacity Use Areas. Lastly, in regard to recommendation six, water audits for WS facilities were included under the “Special Conditions” section of all the final groundwater withdrawal permits for WS facilities that reads, “A water audit shall be conducted annually to identify water losses in the system as recommended in the *Waccamaw Groundwater Evaluation* found at www.scdhec.gov/sites/default/files/media/document/waccamawgwevaluation.pdf. Summaries of the audits must be submitted to the Department along with a renewal application 90 days prior to the expiration of this permit.”



004-2020

Bureau of Water

TECHNICAL REPORT NUMBER REQUEST FORM

Date of Report:

January 2020

Title of Report:

Waccamaw Capacity Use Area: 2019 Renewal Year Assessment

Report Main Author:

Lance Foxworth

Ambient Monitoring Station: (if applicable)

N/A

HUC: (if applicable)

N/A

Instructions:

The person requesting a technical report number should complete this form. Submit the completed form to Gloria Lathan in the Bureau of Water: Monitoring, Assessment, and Protection Division.