



Water Use in the Upper Savannah River Basin

Upper Savannah River Basin Council – Meeting #5, December 13, 2023

Priyanka More

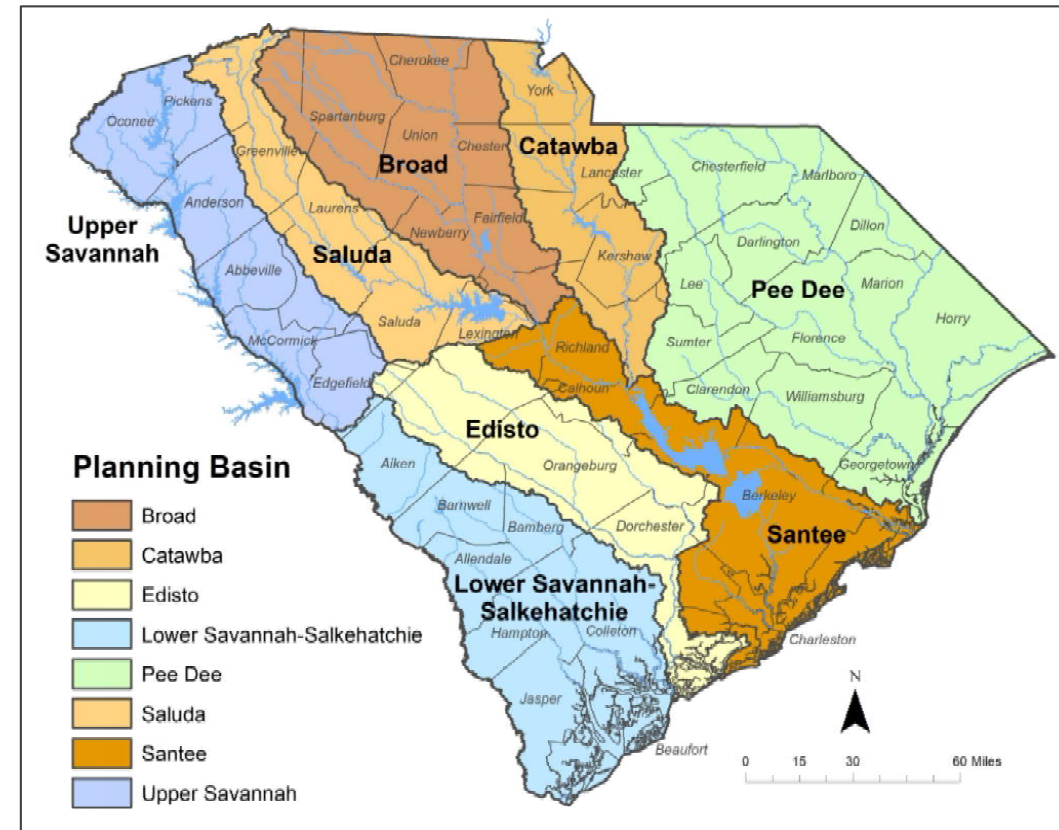
Hydrologist

SC Department of Natural Resources



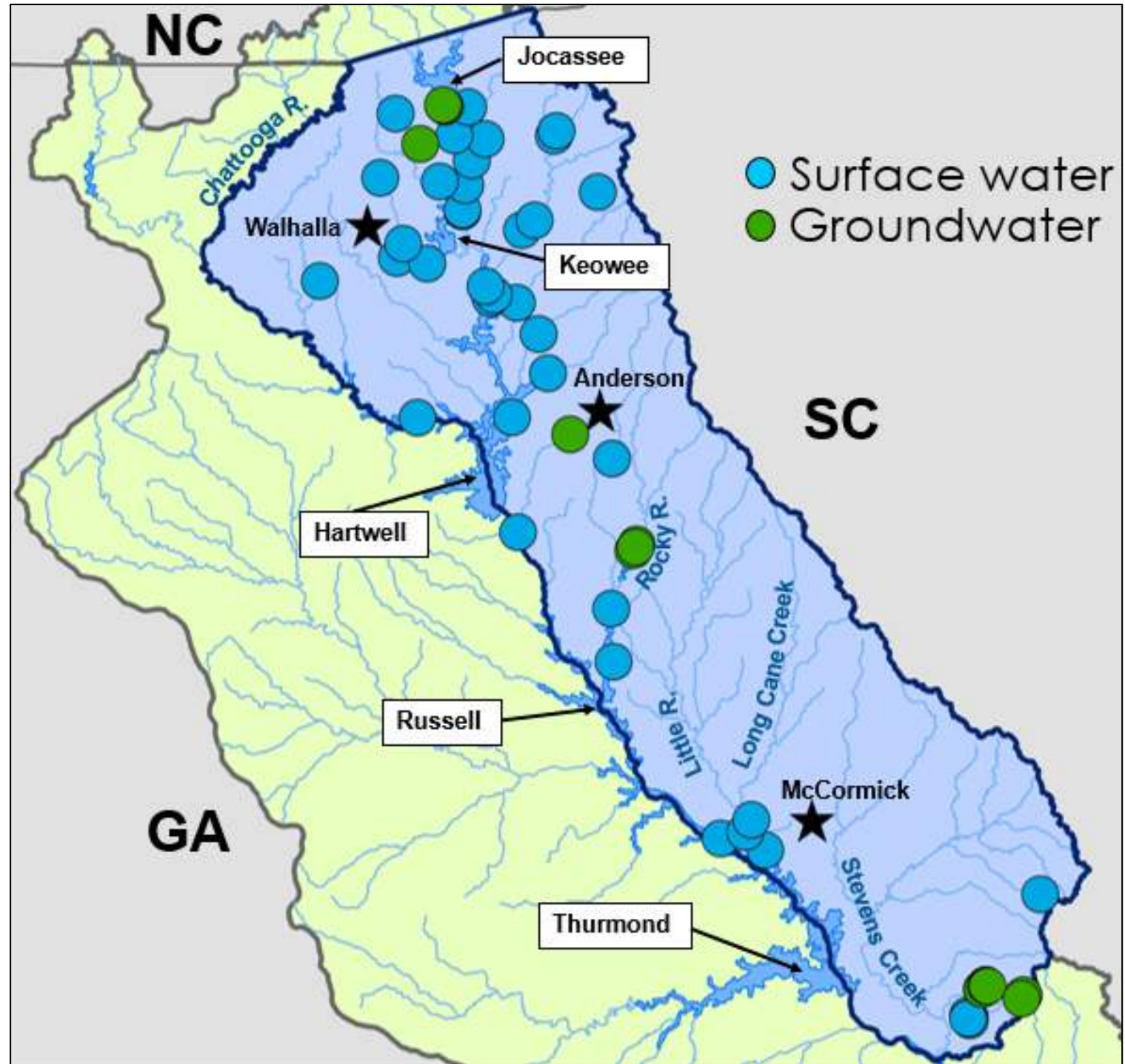
Water Withdrawal Reporting in SC

- The South Carolina Department of Health and Environmental Control (SCDHEC) records water use through the South Carolina Surface Water Withdrawal and Reporting Act and the South Carolina Groundwater Use and Reporting Act.
- Regulations require water users that withdraw three (3) million gallons or greater in any month to register with and report their use annually to the Water Use Program at SCDHEC.
 - Exemptions include farm ponds, ponds filled only with surface water runoff, and wildlife habitat management (typically duck ponds).



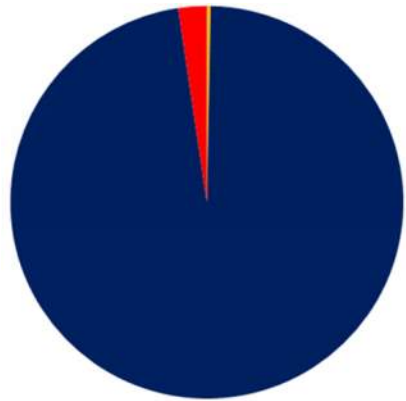
Upper Savannah Basin Water Withdrawals

- More than 99% of withdrawals are from surface water.
- Planning will focus primarily on the basin's surface water resources.



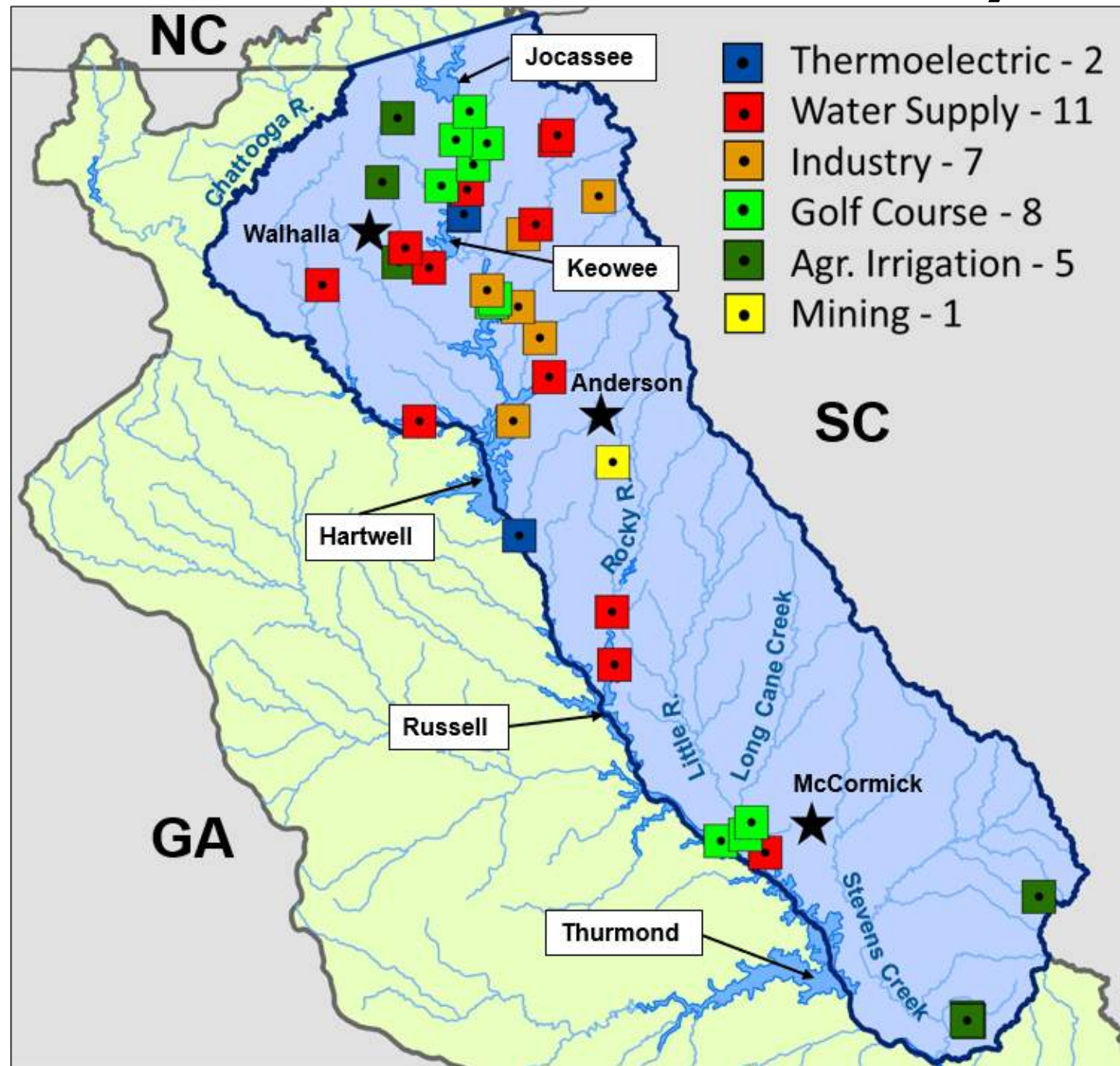
Upper Savannah Basin Surface Water Withdrawals by category-2022

Including Energy



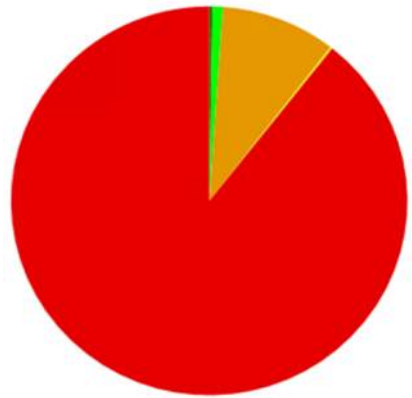
- Thermoelectric (97.4%)
- Water Supply (2.3%)
- Industry (< 1%)
- Golf Course (< 1%)
- Agr. Irrigation (< 1%)
- Mining (< 1%)

Category	SW Withdrawals (MGD)
Thermoelectric – Nuclear	2690
Thermoelectric – Fossil	2
Water Supply	65
Industry	7
Golf Course	1
Agr. Irrigation	0.2
Mining	0.1
Total	2,766

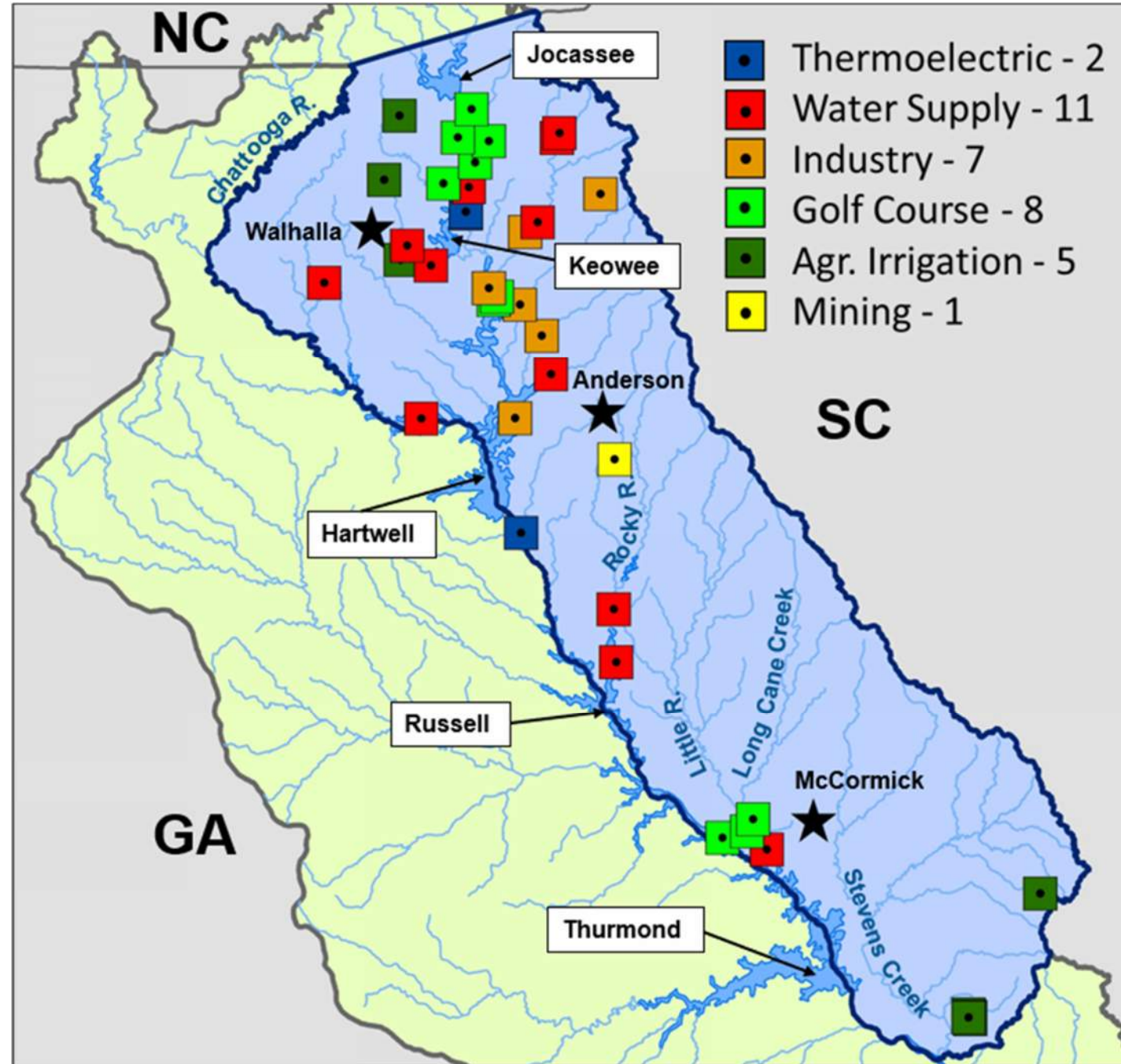


Upper Savannah Basin Surface Water Withdrawals by category-2022

Excluding Energy



- Water Supply (88.5%)
- Industry (10.1%)
- Golf Course (1%)
- Agr. Irrigation (< 1%)
- Mining (< 1%)



Category	SW Withdrawals (MGD)
Water Supply	65
Industry	7
Golf Course	1
Agr. Irrigation	0.2
Mining	0.1
Total	73

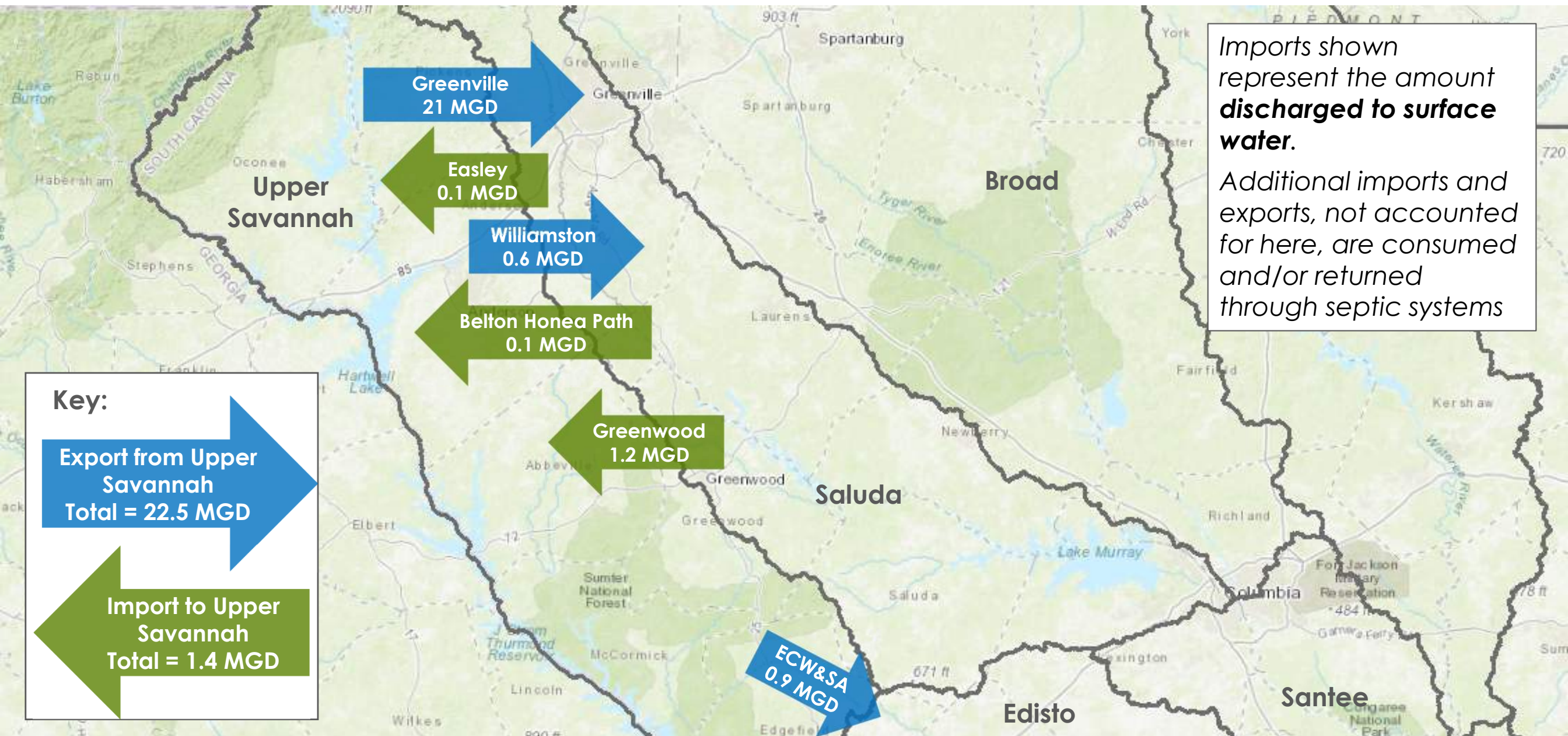
Surface Water Consumptive Use by Categories

Monthly average consumptive use estimates within the Simplified Water Allocation Model (SWAM) were developed using the SCDHEC reported water withdrawal and discharge data.

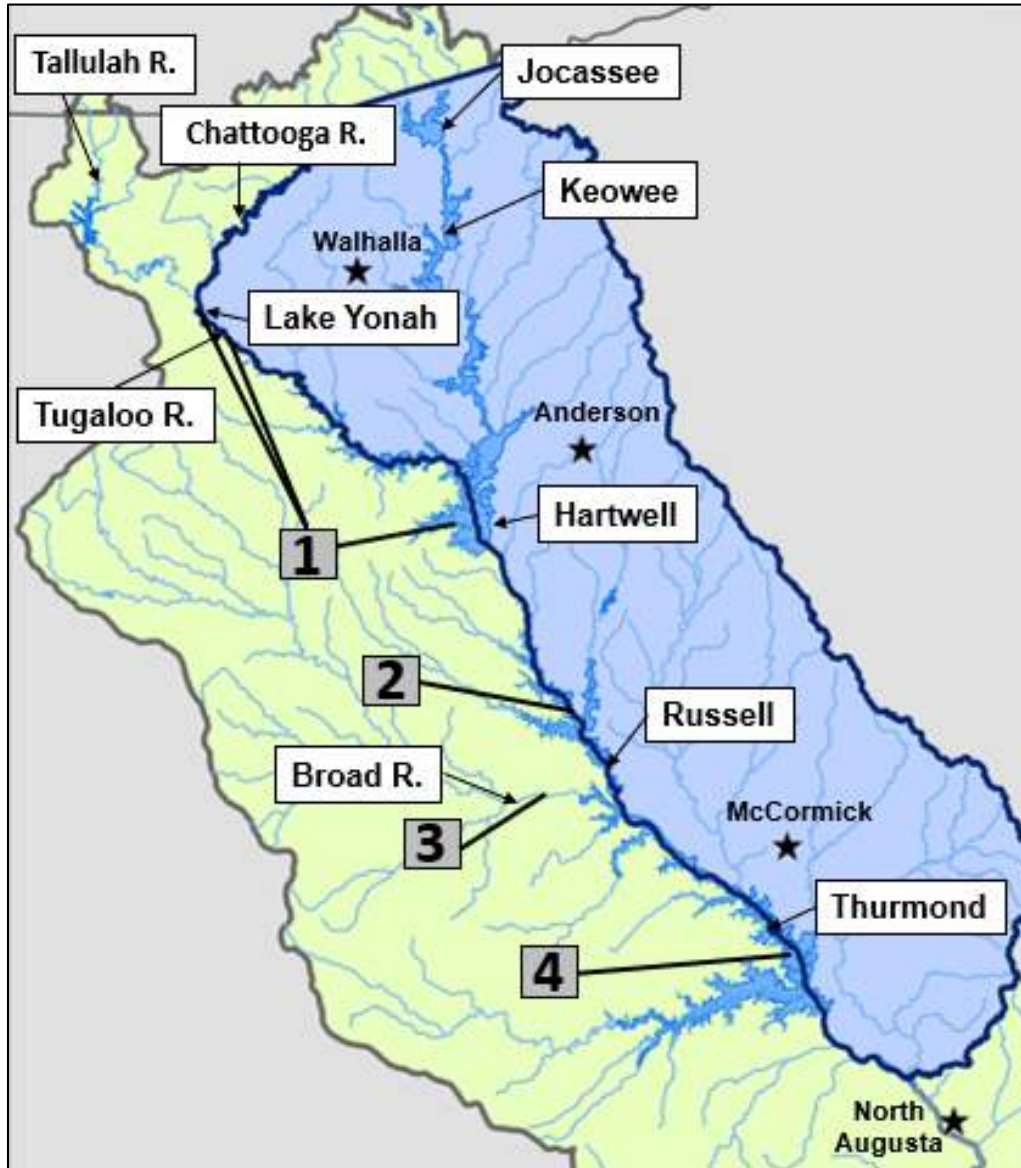
Water Use Category	SWAM-Average Annual Consumptive Use Percent Range (%)
Thermoelectric - Nuclear Power	1
Thermoelectric - Fossil	90
Water Supply	27 - 87
Industry	0 - 90
Mining	14
Golf Course	100
Ag.Irrigation	100

Upper Savannah River Basin – Inter basin Transfers

Current Use Scenario Imports and Exports



Surface Water Withdrawals – GA



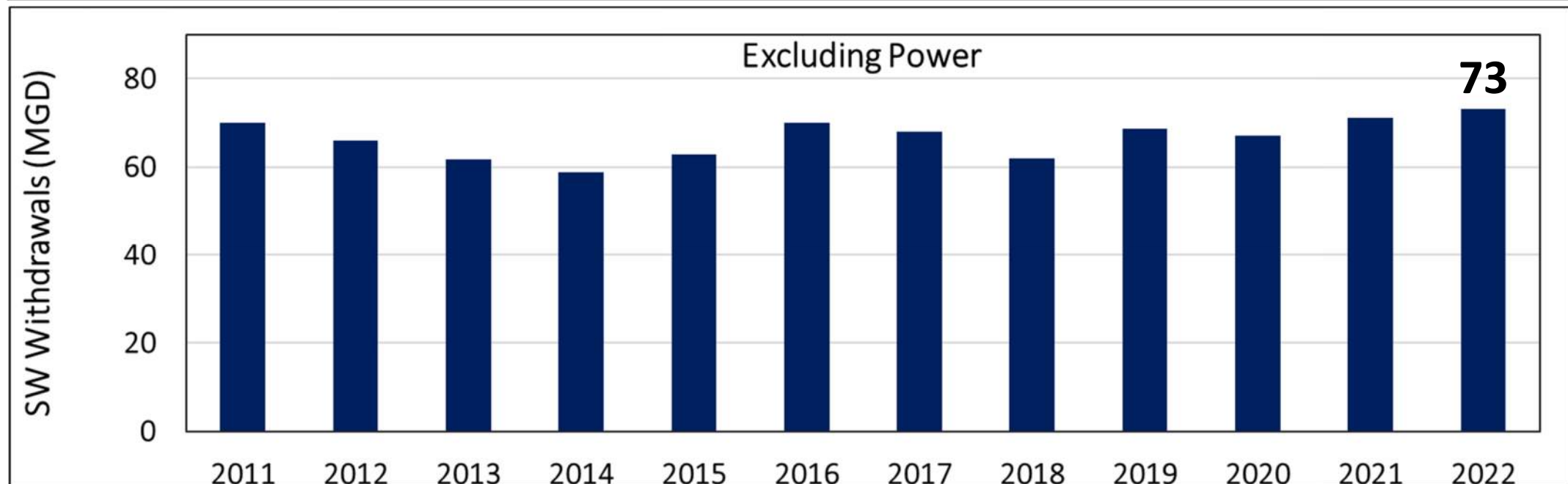
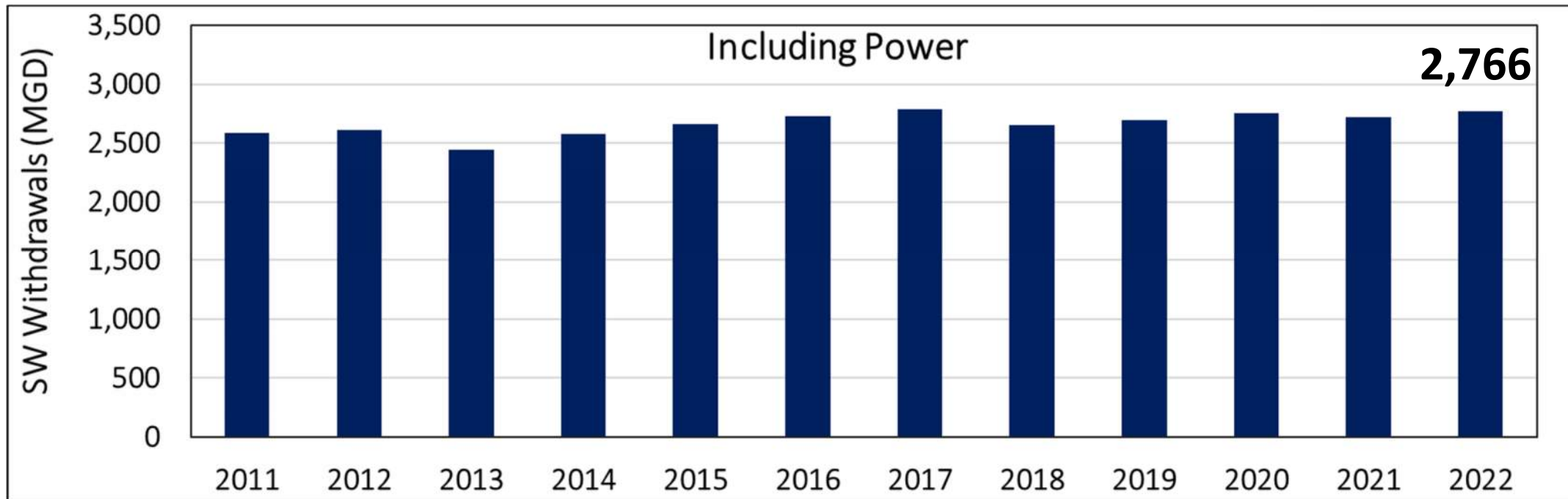
ID	Facility Name	Withdrawal Tributary	2021 Withdrawal (MGD)	Model Object ID	Model Object ID (MGD)
1	Clayton-Rabun Co. Water & Sewer Authority	Tugaloo River	1.8	Tugaloo-Hartwell Use	14.5
	City of Hartwell	Lake Hartwell	1.8		
	City of Lavonia	Tugaloo River, Lake Hartwell	1.6		
	City of Toccoa	Tugaloo River	9.3		
2	City of Elberton	Lake Russell	1.9	Russell Use	1.9
3	Banks County Board Of Commissioners	Broad River	0.7	Broad River Use	3.7
	City of Commerce		2.3		
	City of Crawford		0.1		
	City of Royston		0.4		
	Turner Concrete Company, Incorporated		0.2		
4	Columbia County Water System	Lake Thurmond	1.9	Thurmond Use	4.6
	City of Lincolnton		0.5		
	Thomson-McDuffie County W/S Commission		0.9		
	City of Union Point		0.2		
	City of Washington		1.1		
Total Surface Water Withdrawal in Upper Savannah basin-GA					25

Historical Water Withdrawals

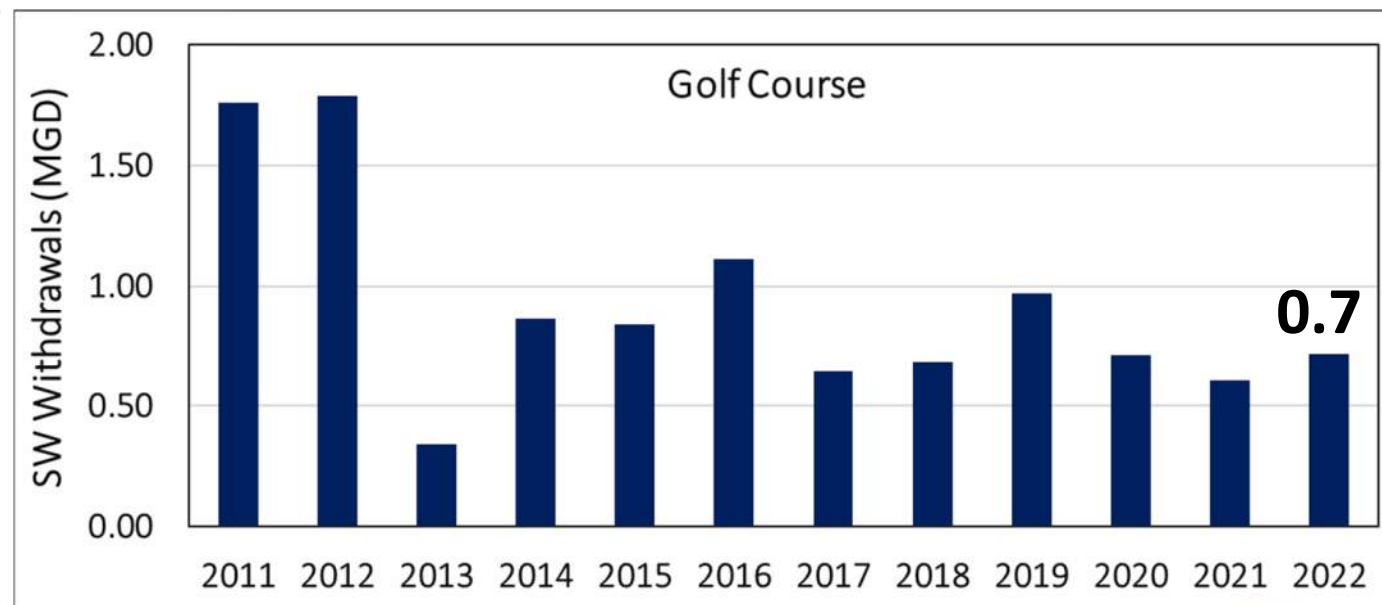
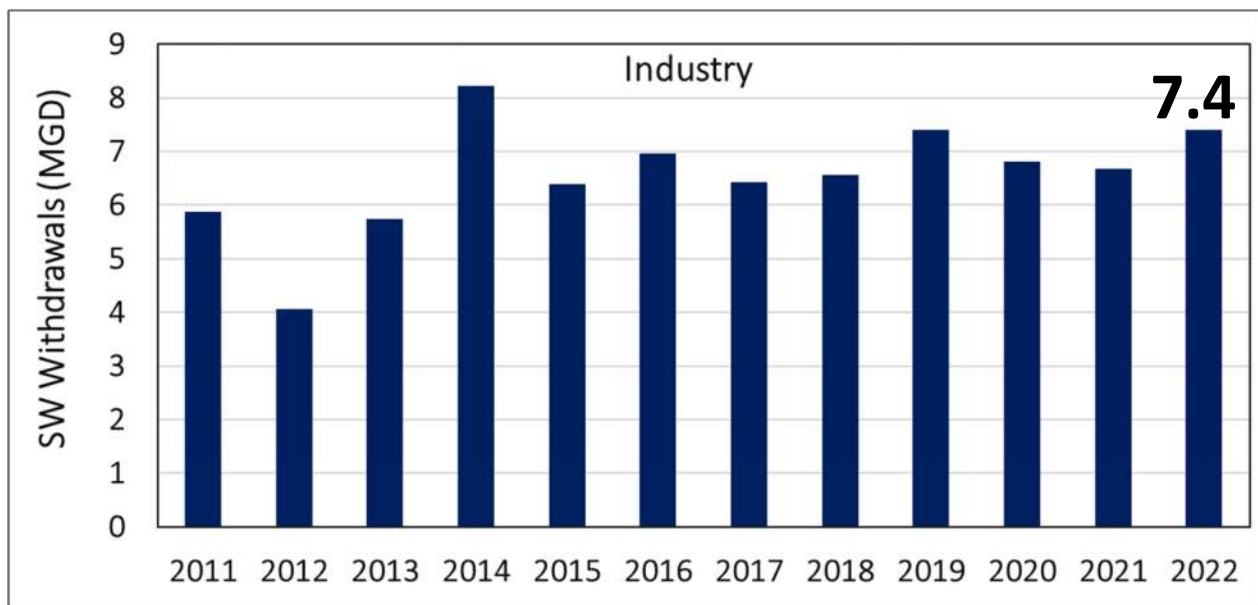
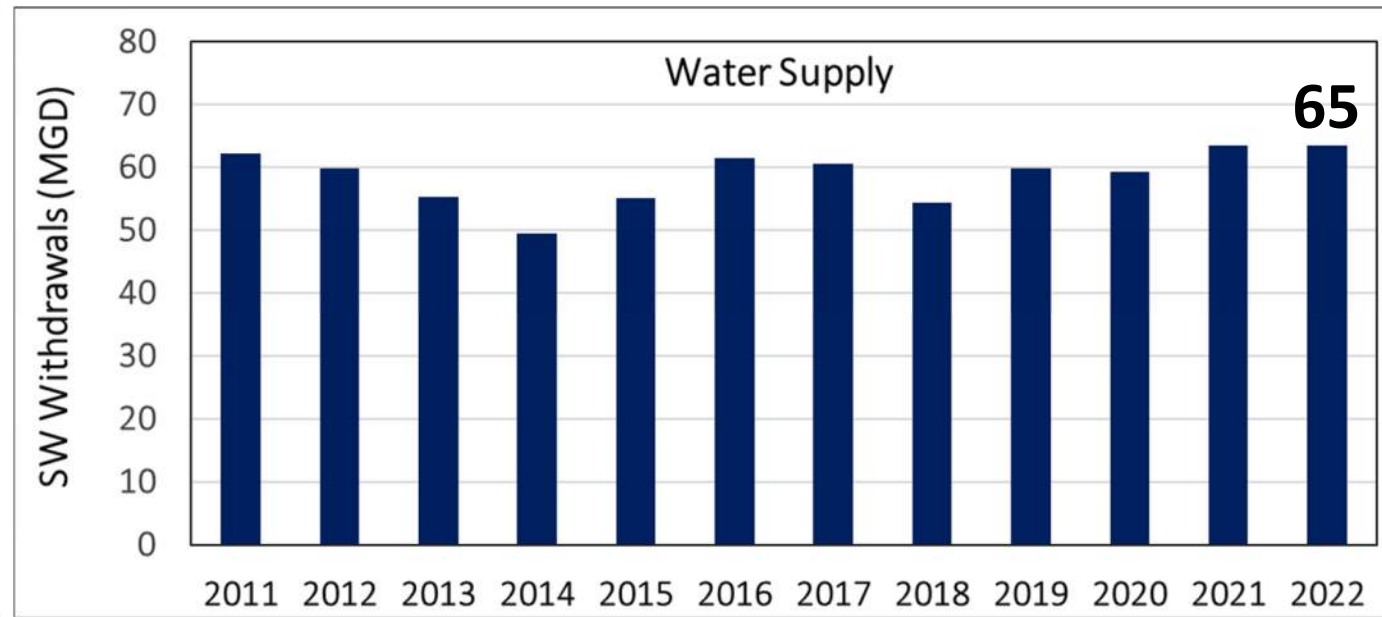
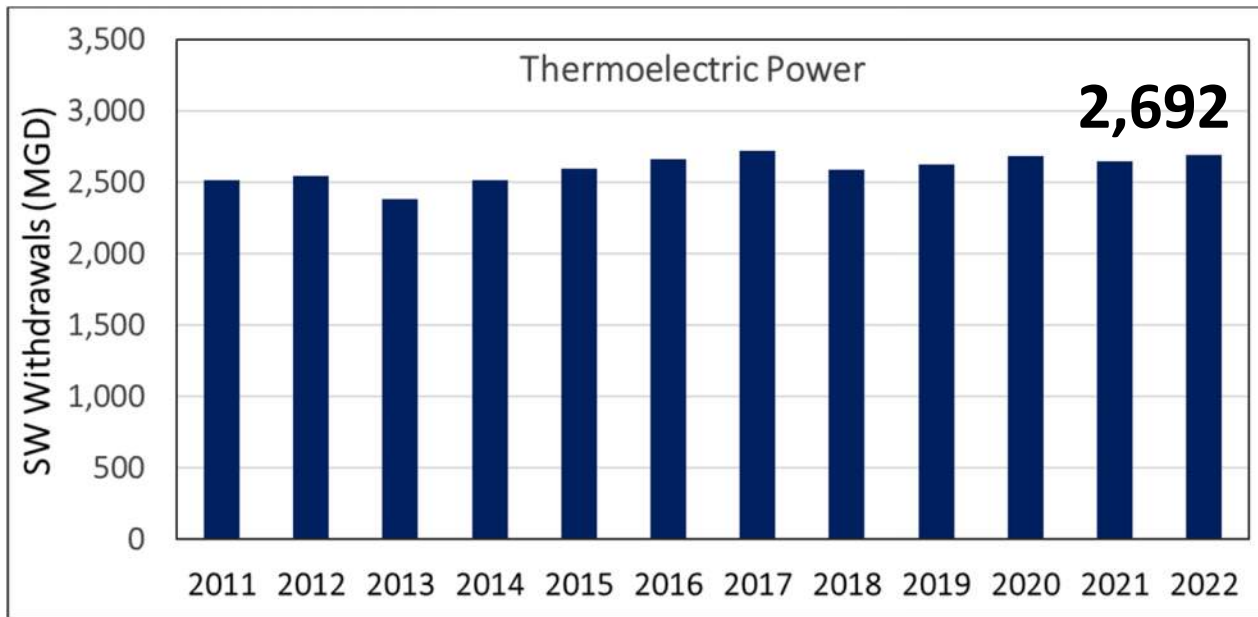
Data Limitations

- Withdrawals from private domestic wells, small surface water irrigation ponds, and any other water withdrawals less than the reporting threshold of 3 MGM are excluded from the SCDHEC's water withdrawal database.
- After passing of the South Carolina Surface Water Withdrawal, Permitting, Use, and Reporting Act in 2011, several facilities that met exemption criteria (withdrawal threshold or water source) were not required to report their withdrawals to SCDHEC (Golf Course, for example).
- Increasing trends in reported water withdrawals for some categories (Agriculture, for example) may in part be due to increased reporting compliance over the analysis period.
- Errors in reported water withdrawals or errors introduced during data input.
- Some users fail to add metadata such as longitude, latitude, county, and basin information for a surface water intake or groundwater well withdrawal. This can lead to some inaccuracies in the dataset.

Reported Surface Water Withdrawals (2011-2022)



Surface Water Withdrawals by Categories



Summary



Priyanka More
MoreP@dnr.sc.gov
SC Department of
Natural Resources



- Planning will focus primarily on the basin's surface water resources.
- SW top three categories: Thermoelectric (97%), Water Supply (2%), and Industry (<1%).
 - Consumptive use of Thermoelectric power is 1%.
- No significant trends observed in the historical annual average surface water withdrawals for most of the top categories (2011-2022).