December RBC Meeting Review

Agenda Item 3

Summary of Average Annual Demands by Scenario (in MGD)
AS PRESENTED IN NOVEMBER

Water Use Sector	Current Use	Moderate Demand 2070	High Demand 2070	Permitted and Registered
Mining	0.1	0.0	0.1	3.9
Agriculture	0.3	0.3	0.3	8.8
Golf Courses	1.3	1.0	1.8	12.3
Industrial/Manufacturing	3.1	5.7	12.2	14.2
Public Water Supply	92.9	149.2	249.4	640.6
Thermoelectric	711	760	842	864
Total all Sectors*	809	916	1,106	1,543
Percent Increase Compared to Current Use:		13%	37%	91%
Total without Thermoelectric*	98	156	264	680
Percent Increase Compared to Current Use:		60%	170%	596%

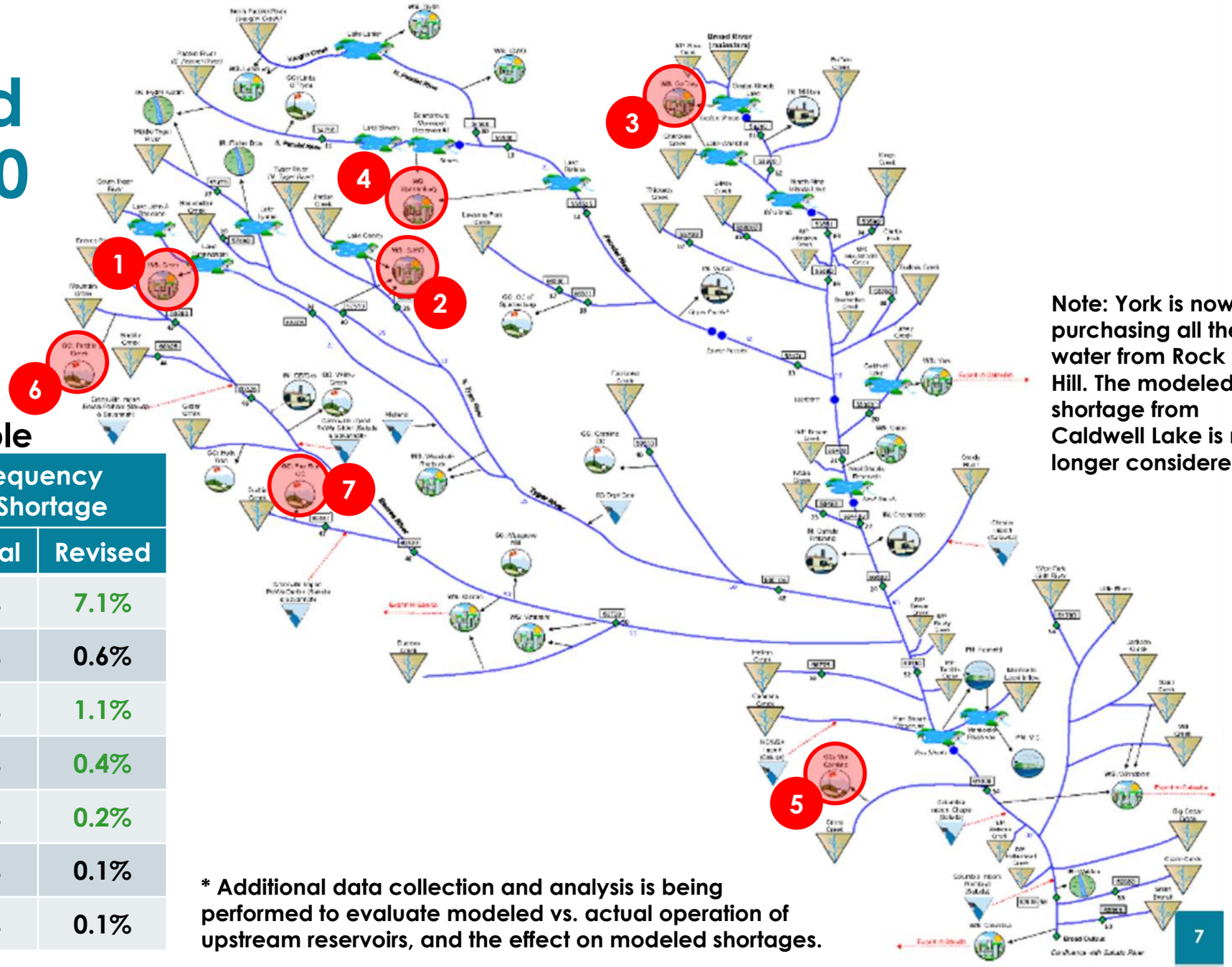
** Rounded to nearest MGD*

Summary of Average Annual Demands by Scenario (in MGD)

		Original Demands		Revised Demands	
Water Use Sector	Current Use	Moderate Demand 2070	High Demand 2070	Moderate Demand 2070	High Demand 2070
Mining	0.1	0.0	0.1	0.0	0.1
Agriculture	0.3	0.3	0.3	0.3	0.3
Golf Courses	1.3	1.0	1.8	1.0	1.7
Industrial/Manufacturing	3.1	5.7	12.2	5.7	12.2
Public Water Supply	92.9	149.2	249.4	150.2	243.3
Thermoelectric	711	760	842	739	819
Total all Sectors*	809	916	1,106	896	1,077
Percent Increase Compared to Current Use:		13%	37%	11%	33%
Total without Thermoelectric*	98	156	264	157	258
Percent Increase Compared to Current Use:		60%	170%	61%	164%

** Rounded to nearest MGD*

High Demand Scenario 2070



Surface Water Shortage Table

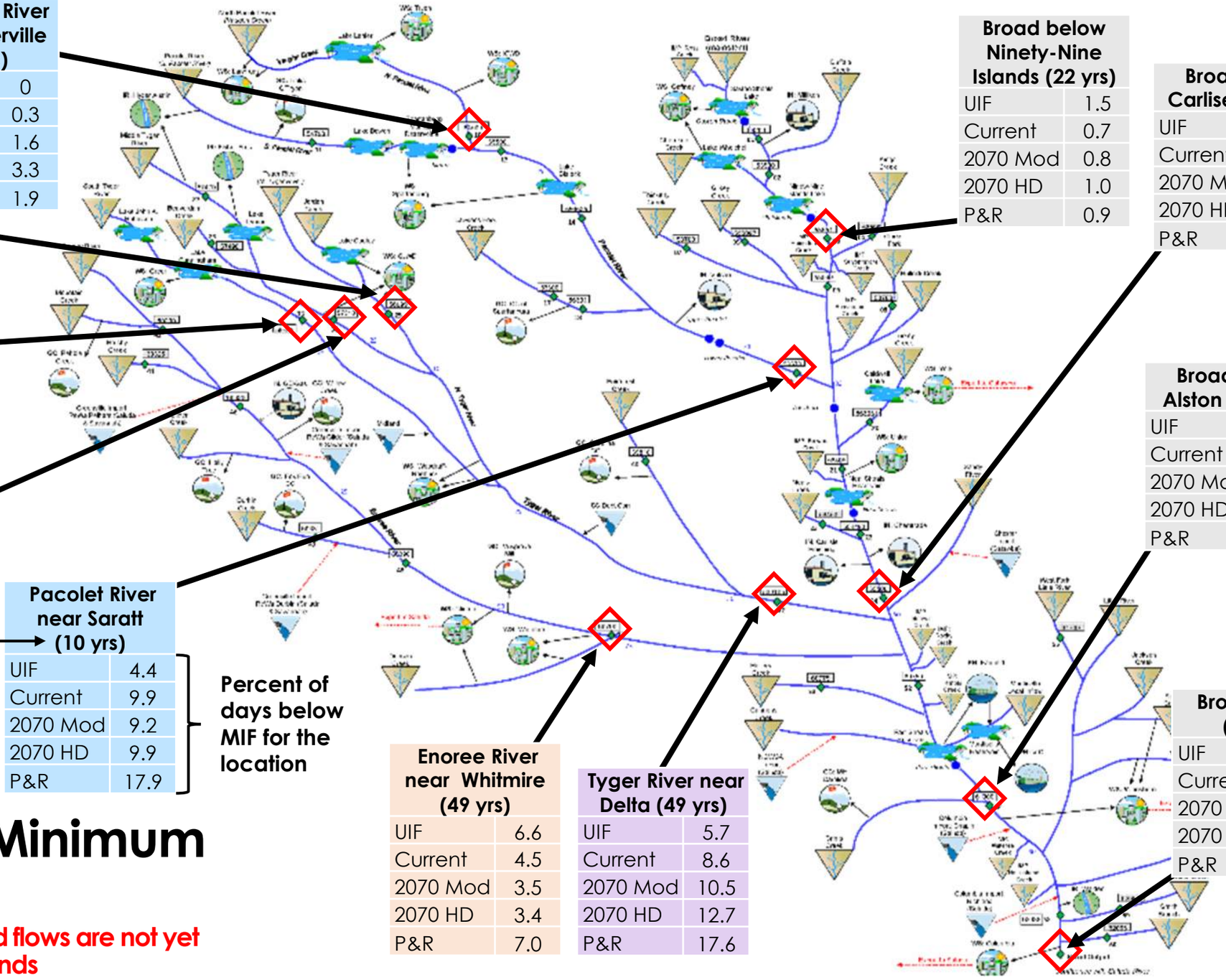
Map ID	Water User	Frequency of Shortage	
		Original	Revised
1	WS: Greer*	7.4%	7.1%
2	WS: SJWD*	0.6%	0.6%
3	WS: Gaffney	1.3%	1.1%
4	WS: Spartanburg	0.0%	0.4%
5	GC: Mid Carolina	0.4%	0.2%
6	GC: Pebble Creek	0.1%	0.1%
7	GC: Fox Run	0.1%	0.1%

Note: York is now purchasing all their water from Rock Hill. The modeled shortage from Caldwell Lake is no longer considered.

* Additional data collection and analysis is being performed to evaluate modeled vs. actual operation of upstream reservoirs, and the effect on modeled shortages.

Comparison to Minimum Instream Flows

2070 Moderate and High Demand flows are not yet updated based on revised demands



N. Tyger River below Wellford (15 yrs)	
UIF	0.5
Current	5.5
2070 Mod	3.4
2070 HD	12.9
P&R	70.2

N. Pacolet River near Fingerville (92 yrs)	
UIF	0
Current	0.3
2070 Mod	1.6
2070 HD	3.3
P&R	1.9

S. Tyger River below Duncan (21 yrs)	
UIF	0.5
Current	4.9
2070 Mod	8.4
2070 HD	8.4
P&R	10.7

Middle Tyger River near Lyman (22 yrs)	
UIF	1.5
Current	6.3
2070 Mod	19.8
2070 HD	40.3
P&R	47.8

Years of gage data used to calculate the MIF

Pacolet River near Saratt (10 yrs)	
UIF	4.4
Current	9.9
2070 Mod	9.2
2070 HD	9.9
P&R	17.9

Percent of days below MIF for the location

Enoree River near Whitmire (49 yrs)	
UIF	6.6
Current	4.5
2070 Mod	3.5
2070 HD	3.4
P&R	7.0

Tyger River near Delta (49 yrs)	
UIF	5.7
Current	8.6
2070 Mod	10.5
2070 HD	12.7
P&R	17.6

Broad below Ninety-Nine Islands (22 yrs)	
UIF	1.5
Current	0.7
2070 Mod	0.8
2070 HD	1.0
P&R	0.9

Broad near Carlise (84 yrs)	
UIF	4.0
Current	6.1
2070 Mod	6.6
2070 HD	7.2
P&R	7.9

Broad near Alston (42 yrs)	
UIF	3.7
Current	6.7
2070 Mod	7.1
2070 HD	7.7
P&R	9.3

Broad Outlet (11 yrs)	
UIF	2.9
Current	5.8
2070 Mod	6.4
2070 HD	7.6
P&R	10.5

Comparison of 5th Percentile Flows

Flows at each strategic node listed in the tables are in cubic feet per second (cfs)

2070 Moderate and High Demand flows are not yet updated based on revised demands

N. Tyger River below Wellford	
UIF	14
Current	8
2070 Mod	12
2070 HD	2
P&R	1

N. Pacolet River near Fingerville	
UIF	75
Current	66
2070 Mod	57
2070 HD	49
P&R	53

S. Tyger River below Duncan	
UIF	50
Current	35
2070 Mod	26
2070 HD	27
P&R	26

Middle Tyger River near Lyman	
UIF	32
Current	22
2070 Mod	6
2070 HD	0.1
P&R	0.1

Pacolet River near Saratt	
UIF	234
Current	182
2070 Mod	174
2070 HD	163
P&R	133

Enoree River near Whitmire	
UIF	143
Current	153
2070 Mod	165
2070 HD	165
P&R	132

Tyger River near Delta	
UIF	229
Current	197
2070 Mod	177
2070 HD	162
P&R	141

Broad below Ninety-Nine Islands	
UIF	800
Current	744
2070 Mod	723
2070 HD	700
P&R	704

Broad near Carlise	
UIF	1,173
Current	1.053
2070 Mod	1.013
2070 HD	970
P&R	957

Broad near Alston	
UIF	1,786
Current	1,537
2070 Mod	1,505
2070 HD	1,427
P&R	1,331

Broad Outlet	
UIF	1,907
Current	1,580
2070 Mod	1,554
2070 HD	1,448
P&R	1,260

Water Conservation Strategies

Town of Cary, NC (pop. 175,000)

- **Since 1999, the Town has implemented:**
  - Three-tiered water rate structure
  - Landscape and irrigation codes
  - Toilet flapper rebates
  - Residential water audits
  - Points program for new construction with water efficient measures
  - Monthly water budgets for large irrigators
  - Public education
  - Reclaimed water program
- Conservation strategies reduced per capita water demand from **114 gpcd in 2001** to **81 gpcd in 2016 (29% reduction in per capita demand)**

Water Conservation Strategies

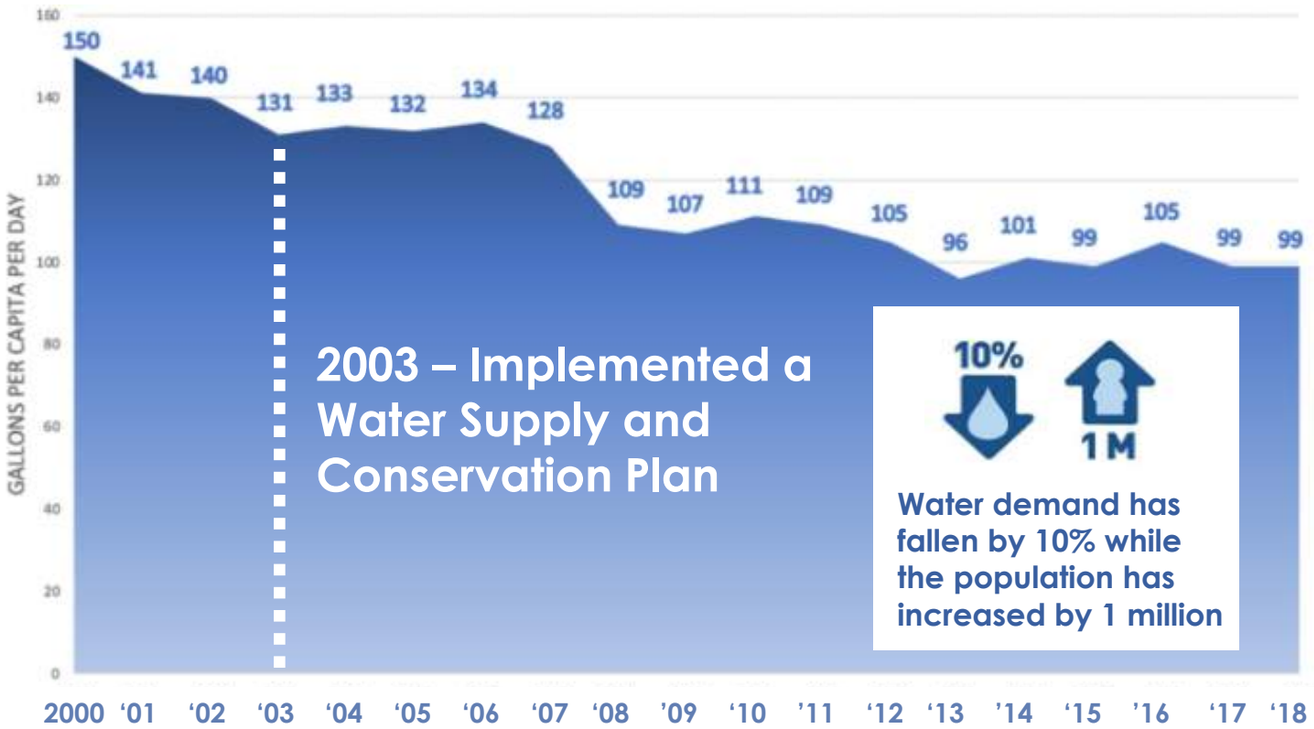
Metro North Georgia Water Planning District

Example Water Conservation & Efficiency measures implemented:

- Conservation pricing structures
- Toilet rebate program
- Landscape irrigation program
- Leak detection and water loss control programs
- Car wash recycling ordinances
- Public education

Conservation strategies reduced per capita water demand from 131 gpcd in 2003 to 99 gpcd in 2018 **(24% reduction in per capita demand)**

Annual Per Capita Water Use



Sources: Metropolitan North Georgia Water Resource Management Plan, June 2017 and https://northgeorgiawater.org/current-water-stats/water-withdrawals-per-capita-remain-steady/