



Agenda

Upper Flint, Middle Chattahoochee, & Lower Flint- Ochlockonee Water Councils Joint Meeting

June 7, 2021

Videoconference

Objectives:

- 1) Receive updates on regional water planning
- 2) Introduce new Council members
- 3) Learn about water and wastewater demand forecasts

9:40 am – 10:00 am	Registration
10:00 am – 10:20 am	Welcome, Meeting Overview, Introductions, & New Council Members – Kristin Rowles (GWPPC)
10:20 am – 10:30 pm	GAEPD Water Planning Updates – Jennifer Welte, GAEPD
10:30 am – 10:35 am	GAEPD Report on Land Branch Rule Change – Keith Stevens
10:35 am – 11:00 am	Report on Florida v. Georgia No. 142 – John Allen, Kazmarek Mowery Cloud Laseter, LLP
11:00 am – 11:45 am	Water and Wastewater Demand Forecasts Municipal: Steve Simpson, Black & Veatch Industrial and Energy: Bill Davis, CDM Smith Inc. Agricultural: Mark Masters, Georgia Water Planning and Policy Center
11:45 am – 11:55 am	Public Comment
11:55 pm – 12:00 pm	Next Steps and Adjourn

Welcome New Members

LOWER FLINT-POCHLOCKONEE COUNCIL

SLIDE 2

NEW MEMBER	COUNTY
Chris Addleton	Grady
LaDon Calhoun	Miller
Marc DeMott	Colquitt
Fred Dent	Worth
Hugh Dollar	Decatur
Jack Henderson	Baker
Greg Hobbs	Thomas
Michael McCoy	Dougherty
Walt Pierce	Calhoun
Steve Sykes	Mitchell
Jay Smith	Lee
Cory Thomas	Miller

Welcome New Members

UPPER FLINT COUNCIL

SLIDE 3

NEW MEMBER	COUNTY
Brian Belcher	Schley
Barry Blount	Sumter
Brad Ellis	Dooly
Steve Fry	Pike
Adam Graft	Sumter
Benjamin Haugabook	Macon
Rodney Hilley	Pike
Bob Melvin	Macon
Kenneth Murphy	Meriwether
Gordon Rogers	Talbot
Randy Summerlin	Spalding
Marcus South	Upson
Walter “Butch” Turner	Taylor
George “Teel” Warbington	Dooly
Senator Ed Harbison	(Ex Officio)

Welcome New Members

MIDDLE CHATTAHOOCHEE COUNCIL

SLIDE 4

NEW MEMBER	COUNTY
Hannah Anderson	Clay
John Asbell	Troup
Victoria Barrett	Stewart
Laura Lee Bernstein	Chattahoochee
Patrick Bowie	Troup
Barbie Crockett	Heard
Dan Gilbert	Muscogee
Jim Hayes	Quitman
Kevin Hayes	Heard
Bill Heath	Haralson
Kenneth Johnson	Clay
Adolph McLendon	Stewart
Ed Moon	Harris
Mac Moyer	Stewart
Kenneth Van Horn	Chattahoochee
Jason Weeks	Quitman
Sen. Jason Anavitarte	(Ex Officio)

And thank you to our many continuing members
for your continued service on the Council



AGENDA FOR TODAY

SLIDE 6

10:00	Welcome, Meeting Overview, & New Council Members
10:20	GAEPD Water Planning Updates – Jennifer Welte
10:30	GAEPD Report on Land Branch Rule Change – Keith Stevens
10:35	Report on Florida v. Georgia No. 142 – John Allen
11:00	Water & Wastewater Demand Forecasts Agricultural – Mark Masters Municipal – Steve Simpson Energy & Industrial – Bill Davis
11:45	Public Comment
11:55	Next Steps
12:00	Adjourn

GAEPD Water Planning Updates

Jennifer Welte, Georgia EPD



Regional Water Plan Update Process

SLIDE 8

- Coordinated with the Metro Water District
- Process began in 2020 with Forecasting work
- Target for updated Plans by end of 2022
 - Draft Plans on public notice by Sept. 30, 2022
 - Updated Plans completed by Dec. 2022
- Technical work completed/ongoing that underlies the Regional Water Plans
- Quarterly Council Meetings

Jennifer Welte
Georgia Environmental Protection Division
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jennifer.welte@dnr.ga.gov

GAEPD Report on Land Branch Rule Change

Keith Stevens, Georgia EPD



High Moisture Content Waste Management Plans SLIDE 11

Landfill Design and Operations (391-3-4-.07)

- Added section specifying requirements for High Moisture Content Waste Management Plan for MSW and commercial industrial landfills
 - Require submission of HMCW management plans by facilities that accept, or plan to accept, 5% or more HMCW by weight
 - Require incorporation of HMCW plan into D&O plan by minor or major modification
 - Require incorporation of HMCW plan with five-year permit reviews
 - Guidance being developed regarding plan content
 - Phased implementation based on site history and anticipated future disposal rates

Water and Wastewater Demand Forecasts



AGRICULTURAL WATER USE UPDATE

Lower Flint-Ochlockonee, Middle
Chattahoochee and Upper Flint Regional Water
Planning Councils

June 7, 2021



GEORGIA
Water

PLANNING & POLICY
— CENTER —
ALBANY STATE UNIVERSITY

Mark Masters
Albany State University
Georgia Water Planning & Policy Center

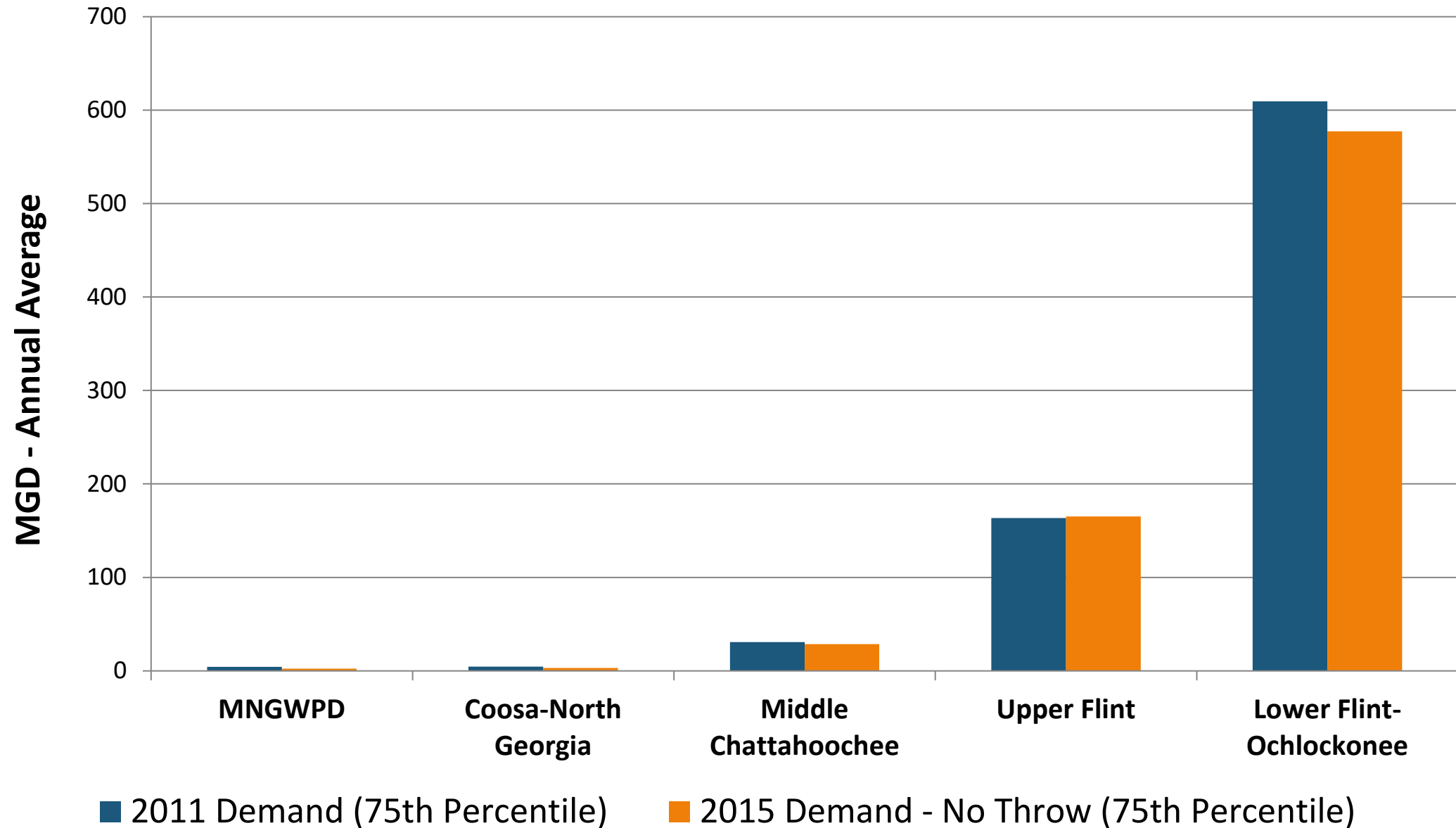


THE UNIVERSITY OF GEORGIA
COLLEGE OF AGRICULTURAL &
ENVIRONMENTAL SCIENCES

Ag Demand – 75th Percentile

Round 1 (2011) and Round 2 (2015)

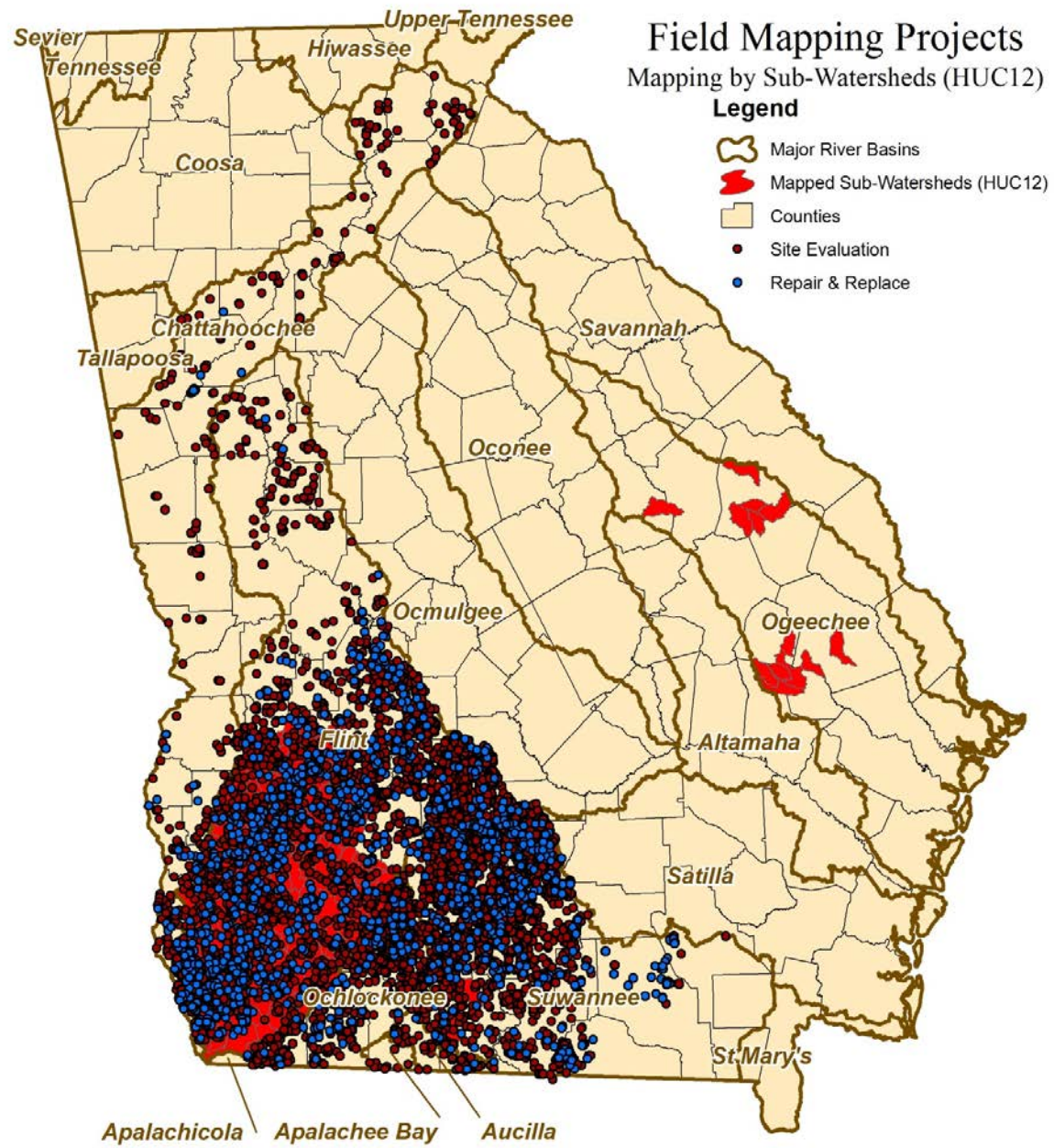
SLIDE 14

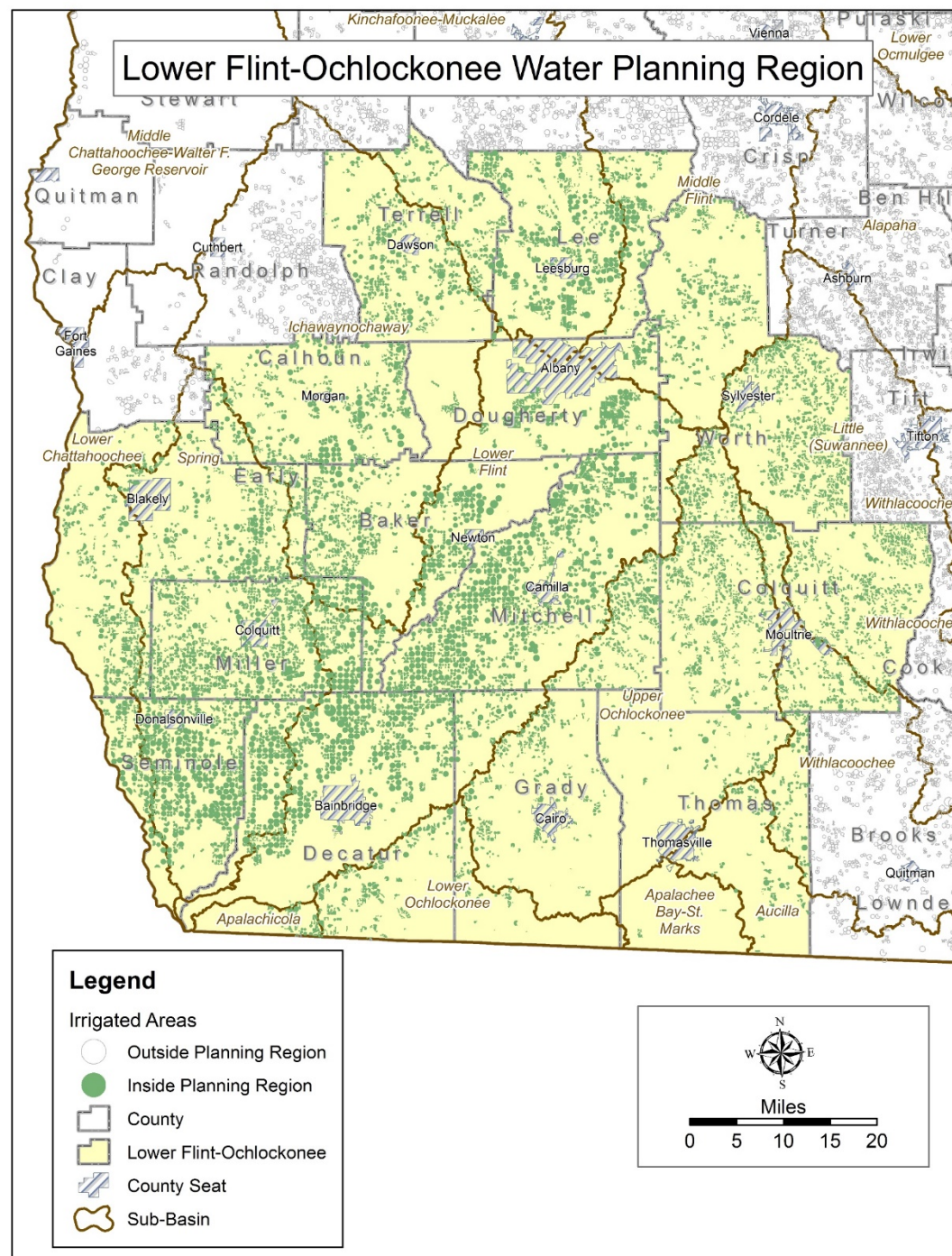


2020-21 Agricultural Water Demand Forecasts - Methods

SLIDE 15

- ▣ **Acreage – Updated 2020 wetted acreage data**
 - Field observation and aerial survey
- ▣ **Crop projections through 2060 - modeled based on multiple data sources:**
 - Remote sensing and field data
 - USDA Projections, Southeast Model, Georgia Model, Data Trends
- ▣ **Crop water needs - wet, normal, dry years**
 - Expanded use of meter data
 - Review estimates used in 2015-2016 and revise if needed
 - Presented by basin, county, planning node, aquifer, etc....
- ▣ **Animal Ag/Nursery**





Irrigated Acres

SLIDE 17

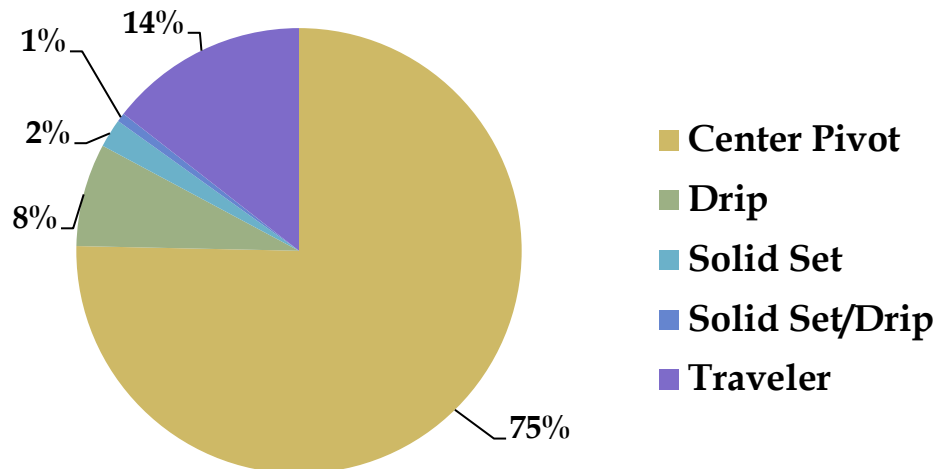
County	2015	2020
BAKER	42,273	42,218
CALHOUN	29,402	29,281
COLQUITT	54,622	56,045
DECATUR	76,391	77,751
DOUGHERTY	21,046	20,620
EARLY	48,973	49,909
GRADY	18,736	19,349
LEE	45,610	46,344
MILLER	60,840	61,955
MITCHELL	91,475	91,754
SEMINOLE	56,816	57,621
TERRELL	30,572	32,201
THOMAS	15,468	16,137
WORTH	54,923	56,503

Lower Flint-Ochlockonee RWPC

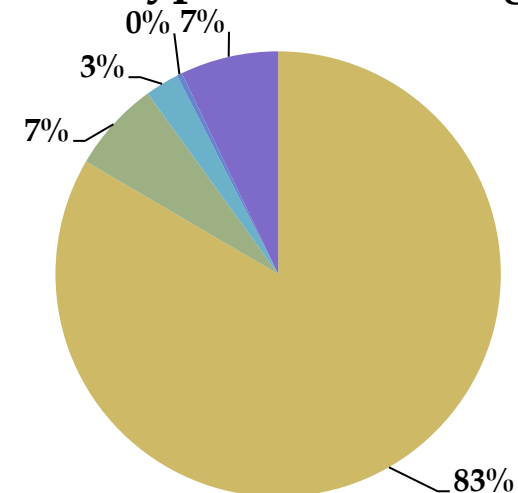
SLIDE 18

	2015	2020	% Change
Total # of Fields	11,742	12,233	+ 4.2%
Total Acreage	647,145	658,229	+ 1.7%
Total GW Acreage	532,569	548,459	+ 3.0%
Total SW Acreage	114,576	109,770	- 4.2%
Total Center Pivots	8,823	9,216	+ 4.5%
Center Pivot Acreage	539,059	549,189	+ 1.9%

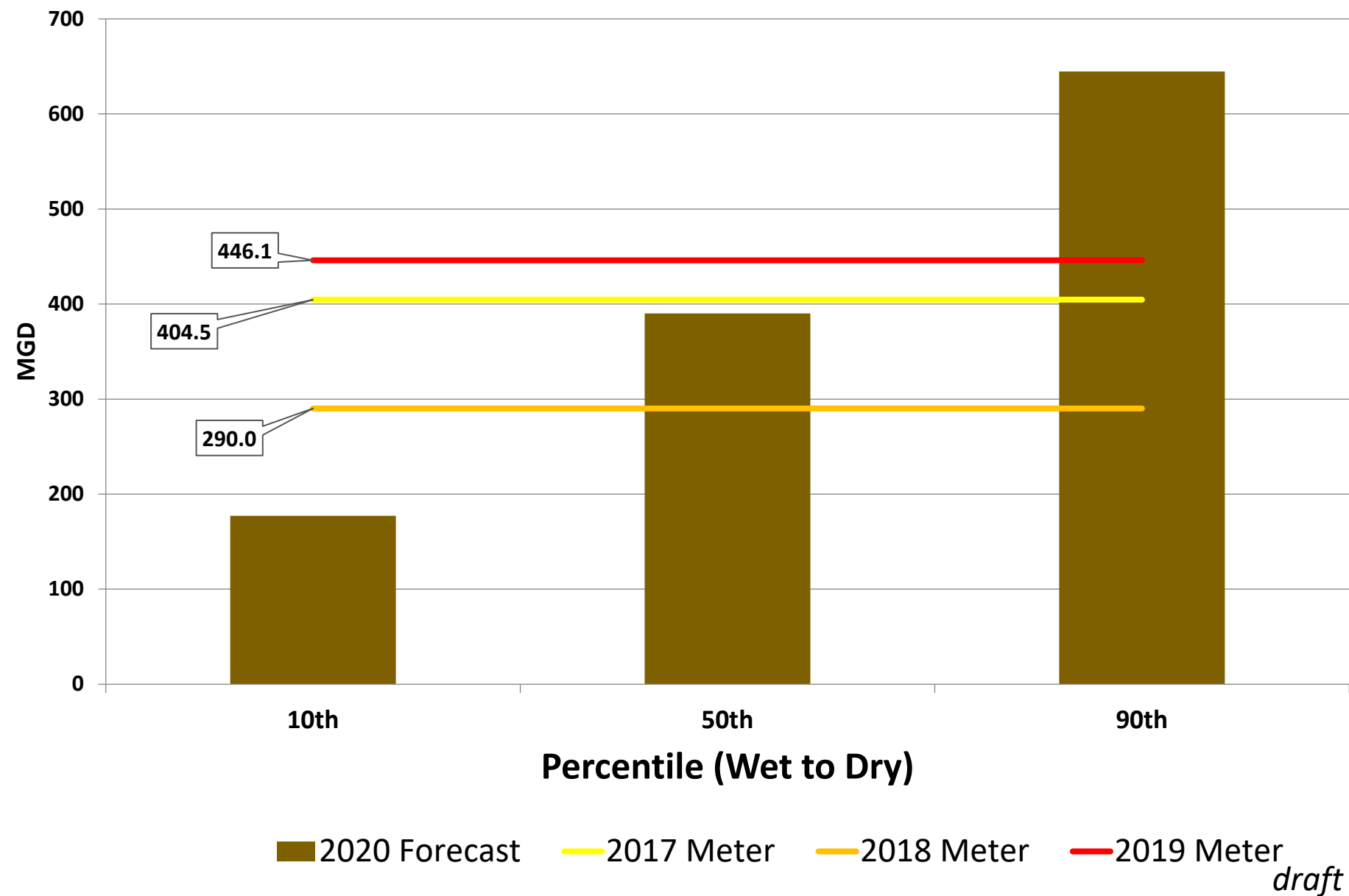
System Type - % of Systems



System Type - % of Acreage

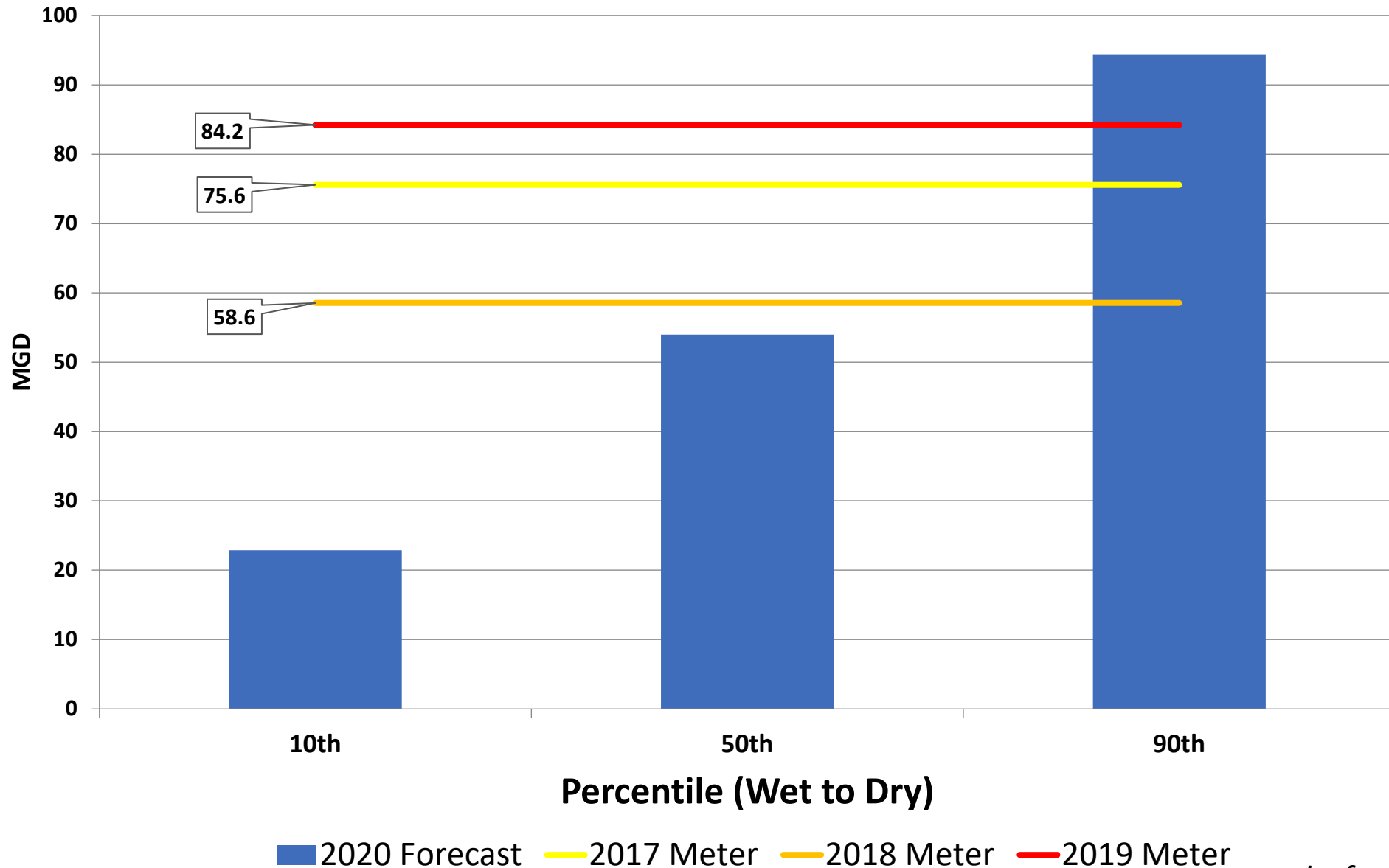


Lower Flint Groundwater



Lower Flint Surface Water

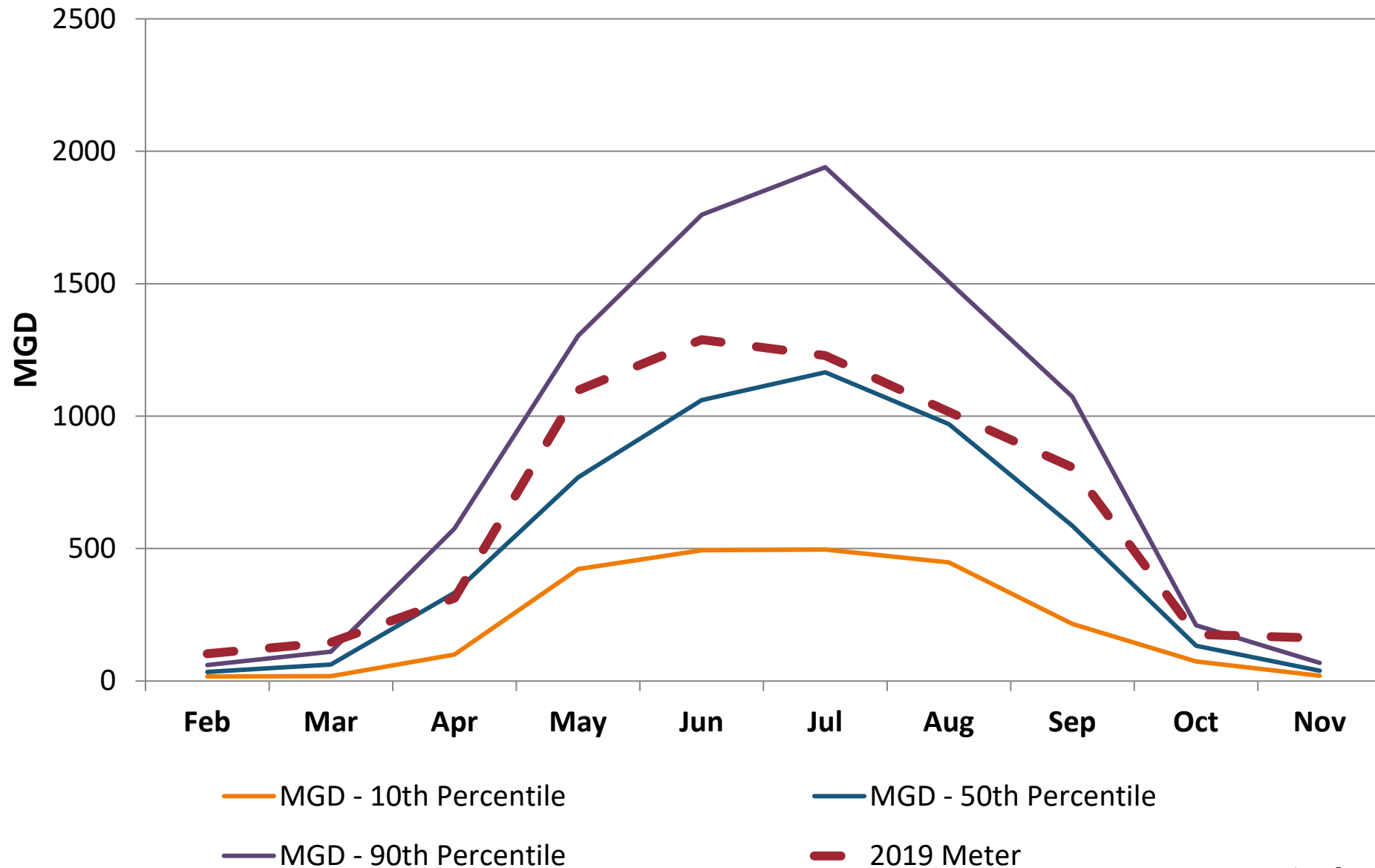
SLIDE 20



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Lower Flint - Monthly

SLIDE 21



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Questions & Discussion

SLIDE 22

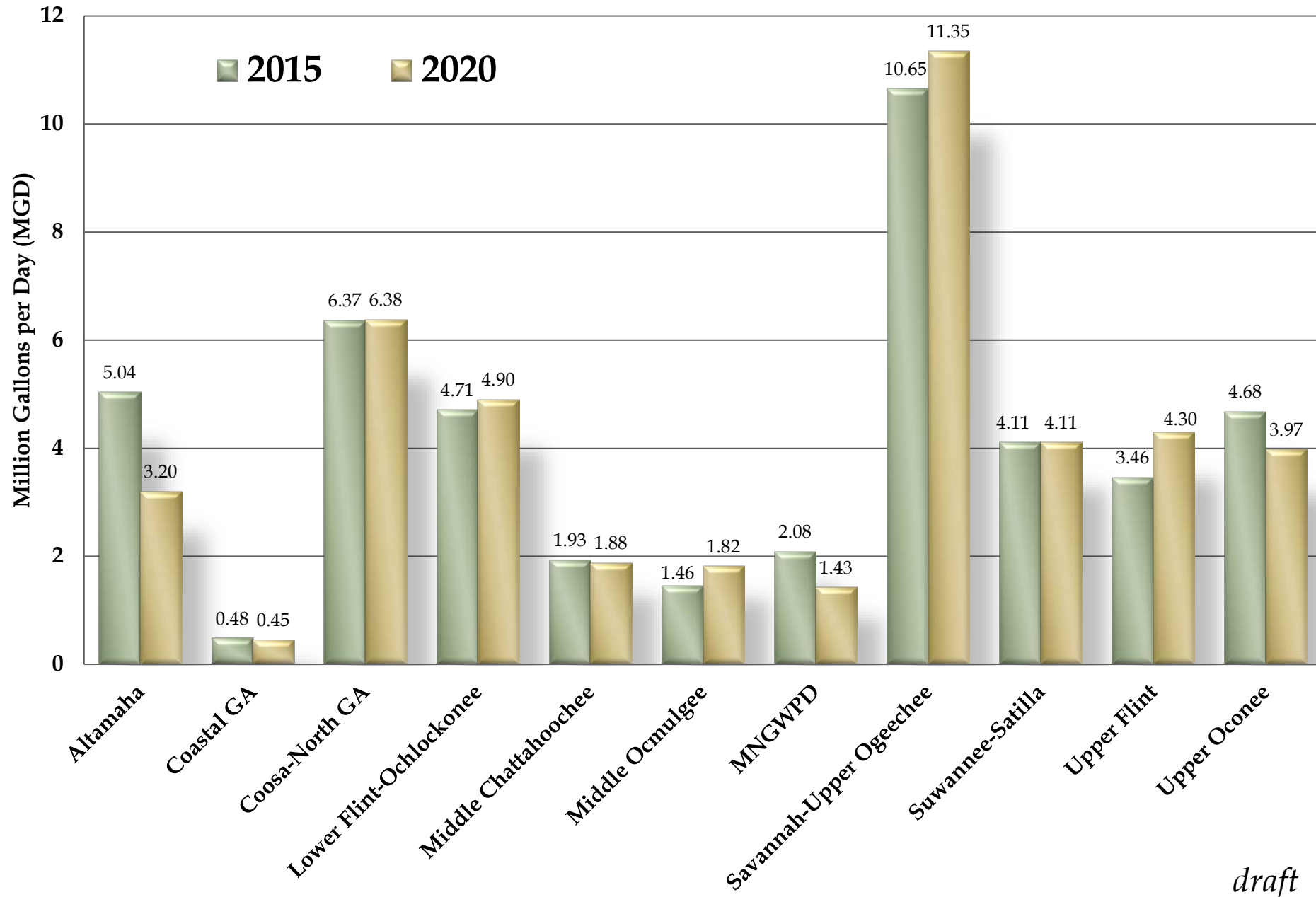


Mark H. Masters
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Animal Agriculture - Daily Water Use by Water Planning Region

Statewide Total: 43.8 MGD

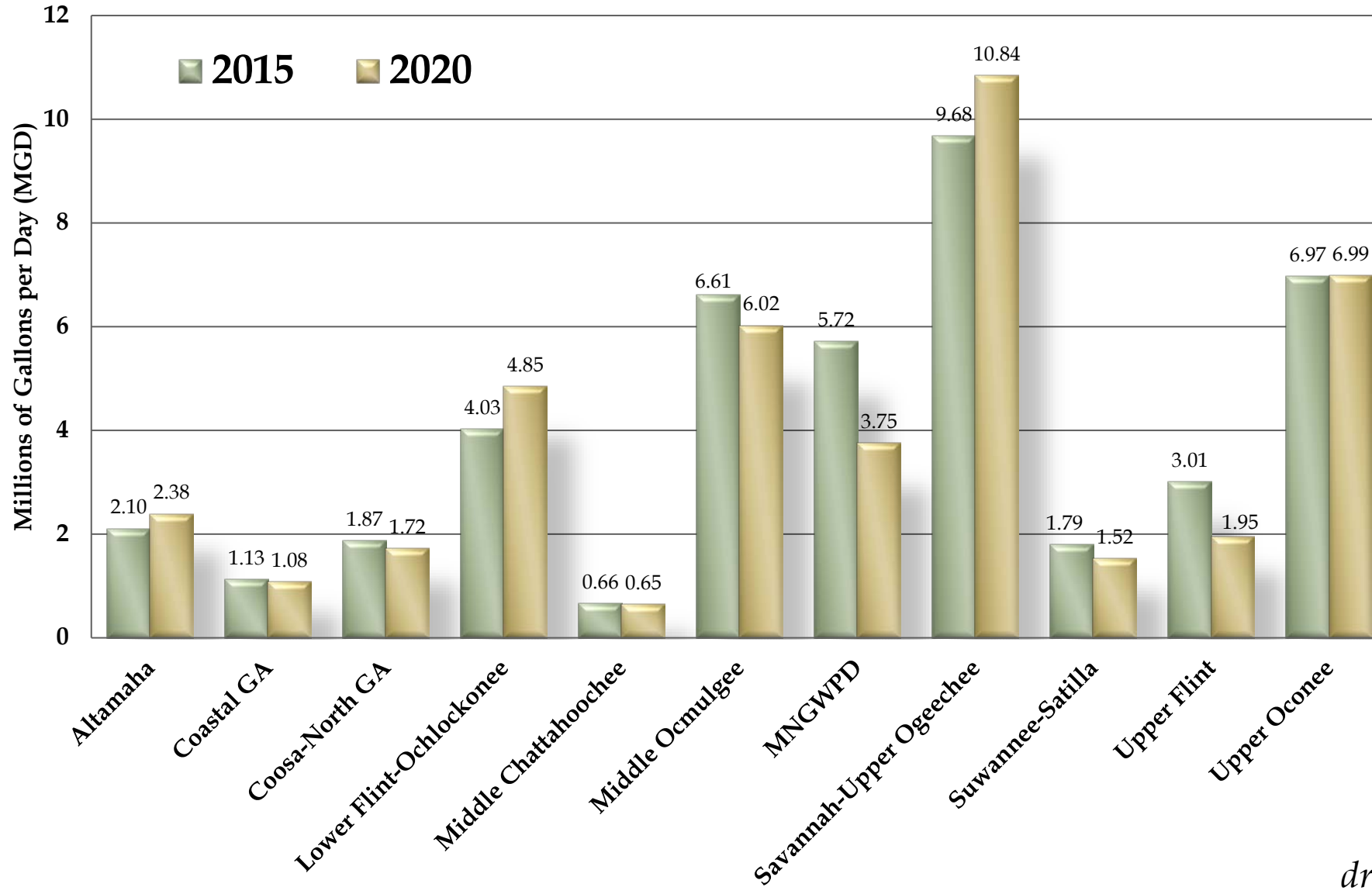
SLIDE 23

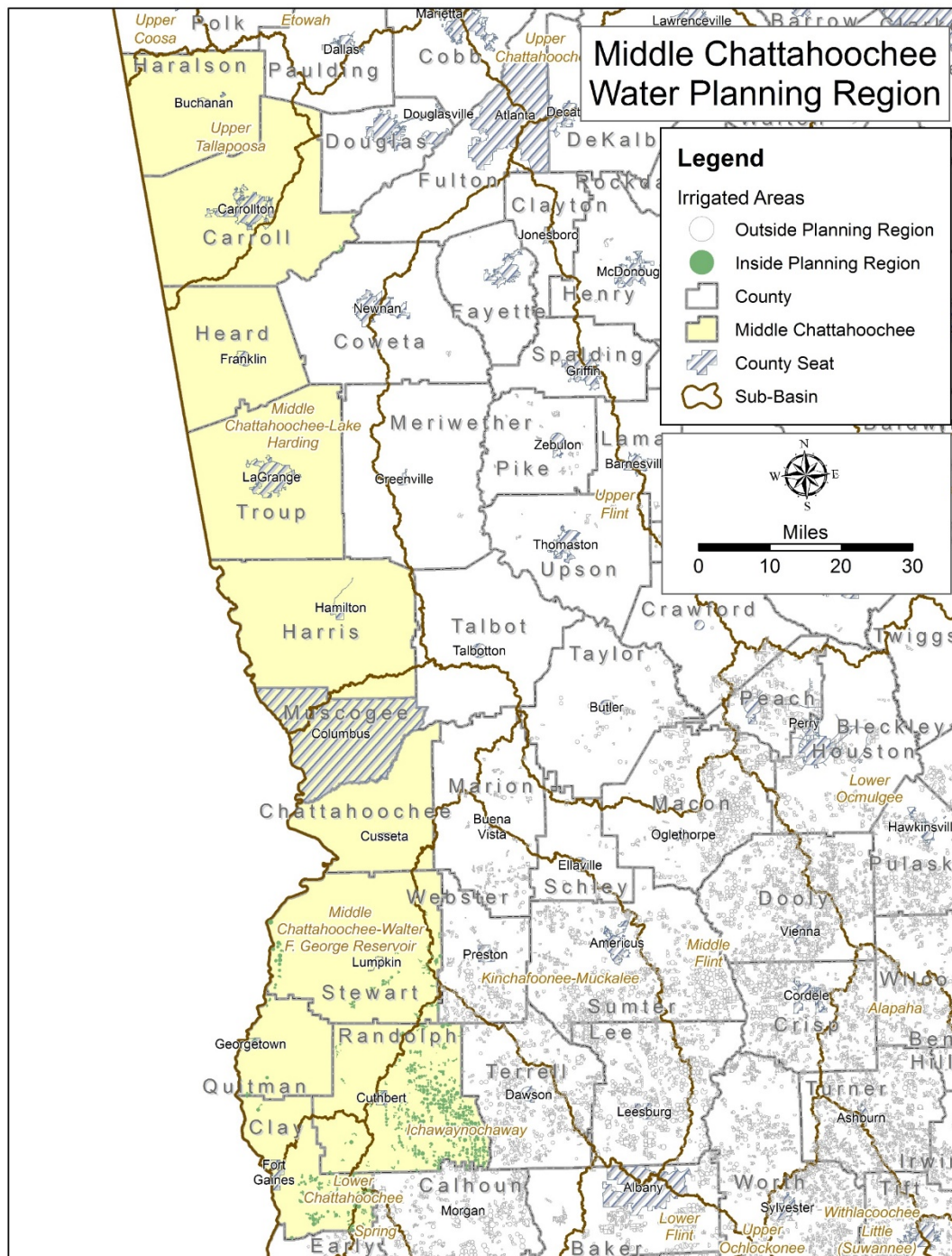


Daily Water Use by Horticultural Nurseries (Container, In-Ground, and Greenhouse), Millions of Gallons Per Day

Statewide Total: 41.76 MGD - *draft*

SLIDE 24





Irrigated Acres

SLIDE 25

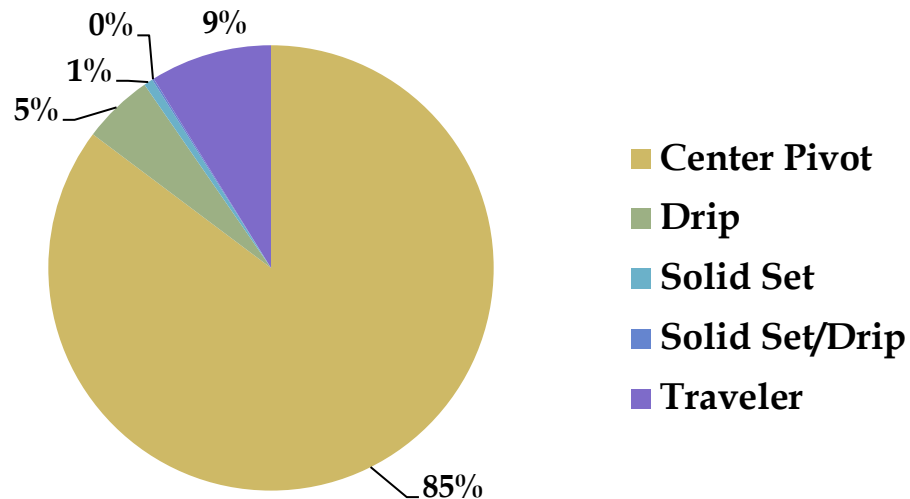
County	2015	2020
CARROLL	297	297
CLAY	8,437	8,566
HARRIS	0	0
MUSCOGEE	0	0
QUITMAN	684	712
RANDOLPH	28,376	29,399
STEWART	4,126	4,650

Middle Chattahoochee RWPC

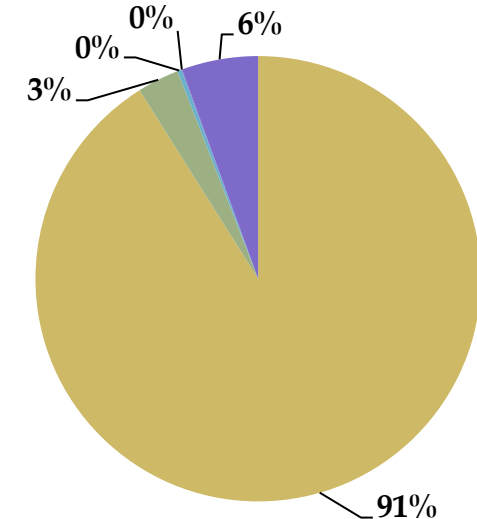
SLIDE 26

	2015	2020	% Change
Total # of Fields	721	759	+ 5.3%
Total Acreage	41,893	43,624	+ 4.1%
Total GW Acreage	17,230	18,836	+ 9.3%
Total SW Acreage	24,663	24,787	+ 0.5%
Total Center Pivots	614	647	+ 5.4%
Center Pivot Acreage	37,816	39,725	+ 5.0%

System Type - % of Systems

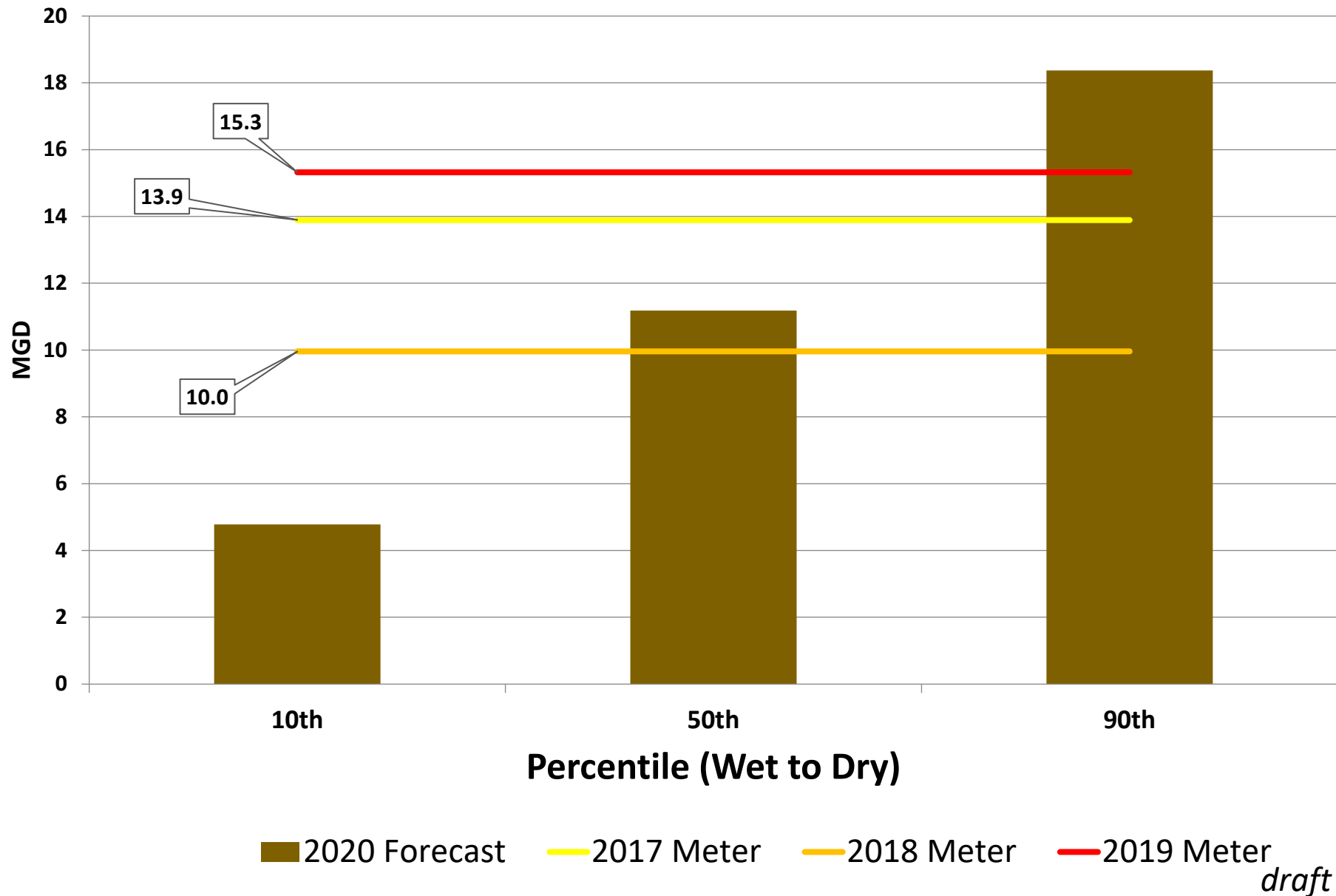


System Type - % of Acreage



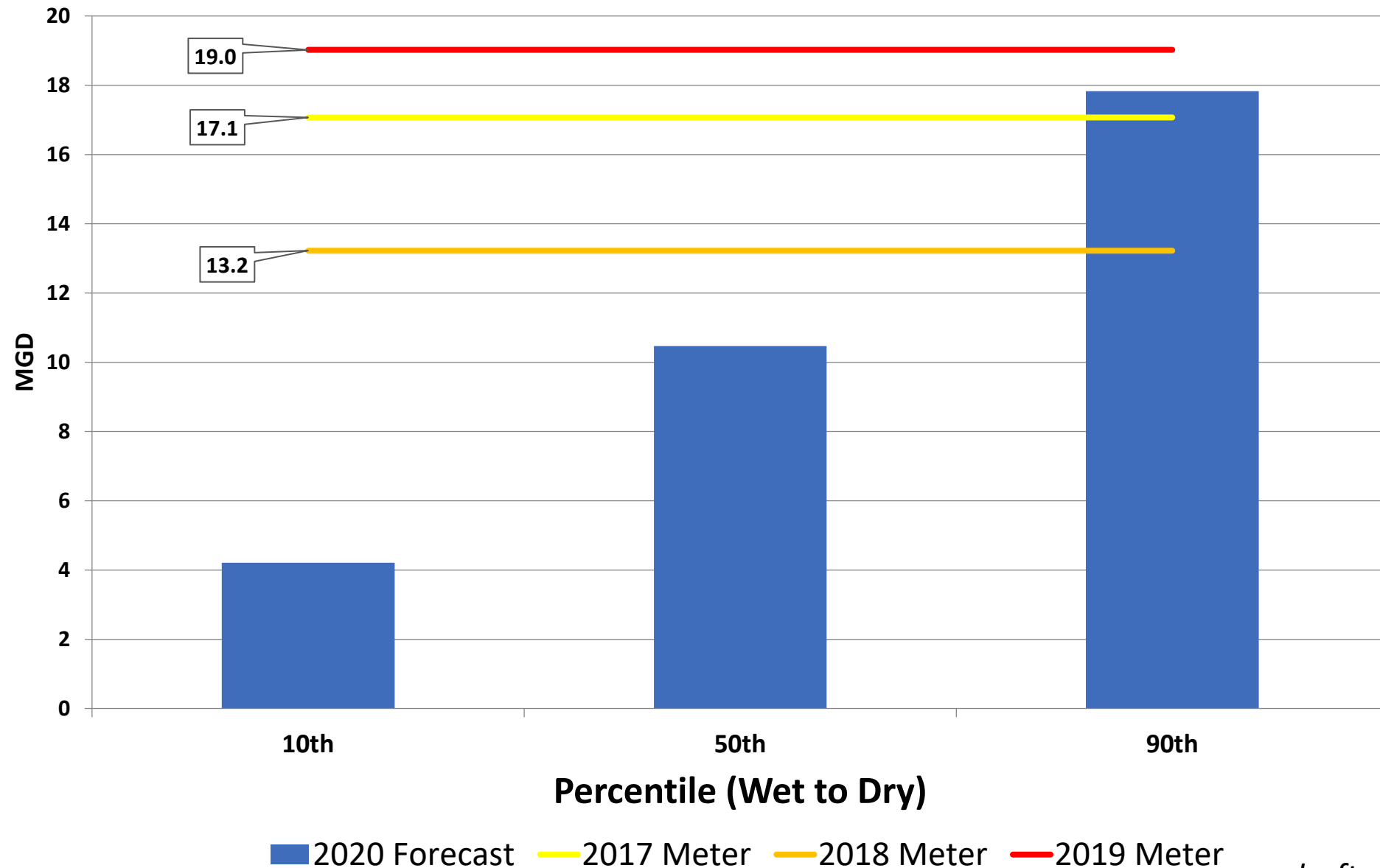
Middle Chatt Groundwater

SLIDE 27



Middle Chatt Surface Water

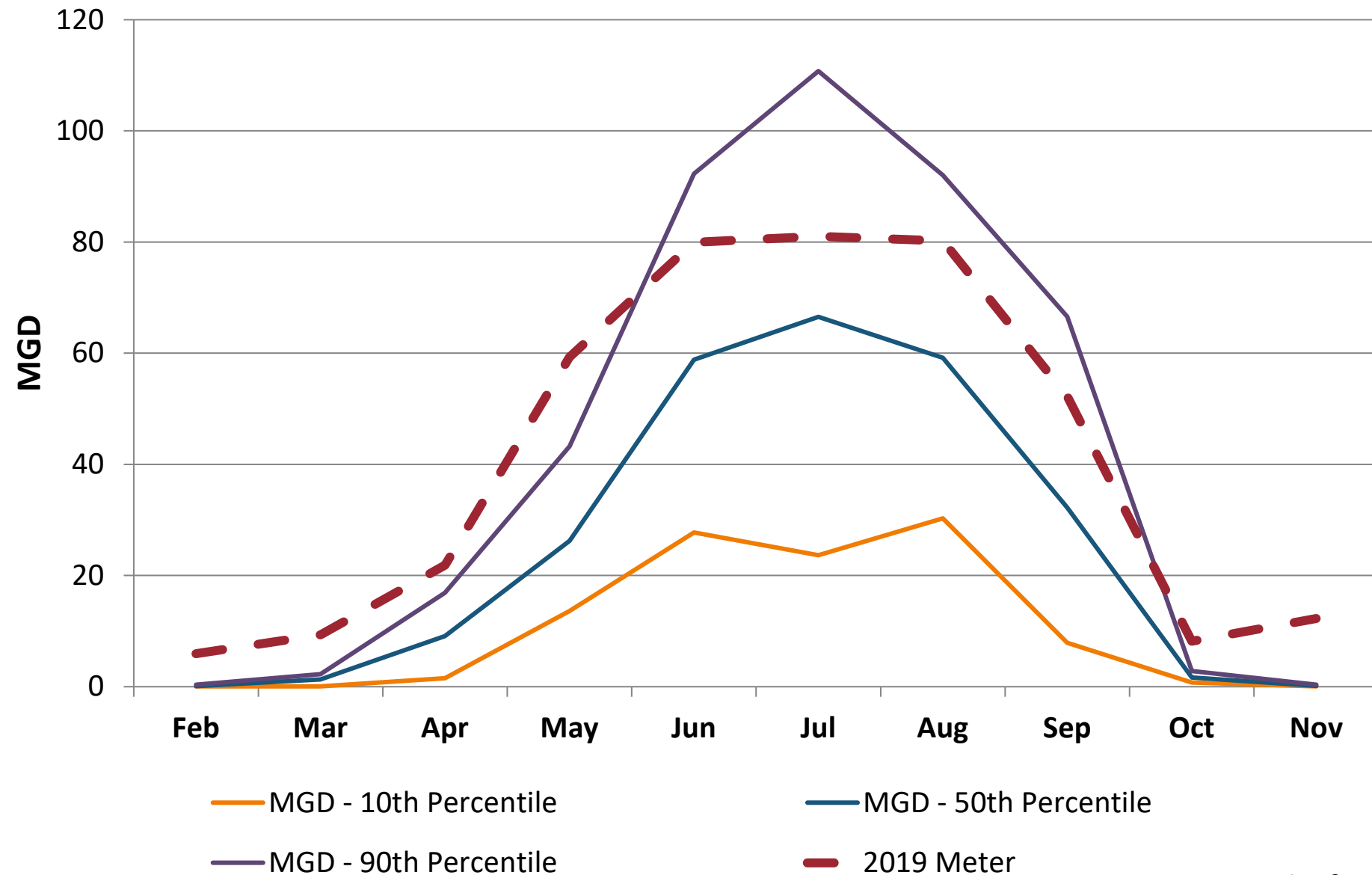
SLIDE 28



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Middle Chatt - Monthly

SLIDE 29



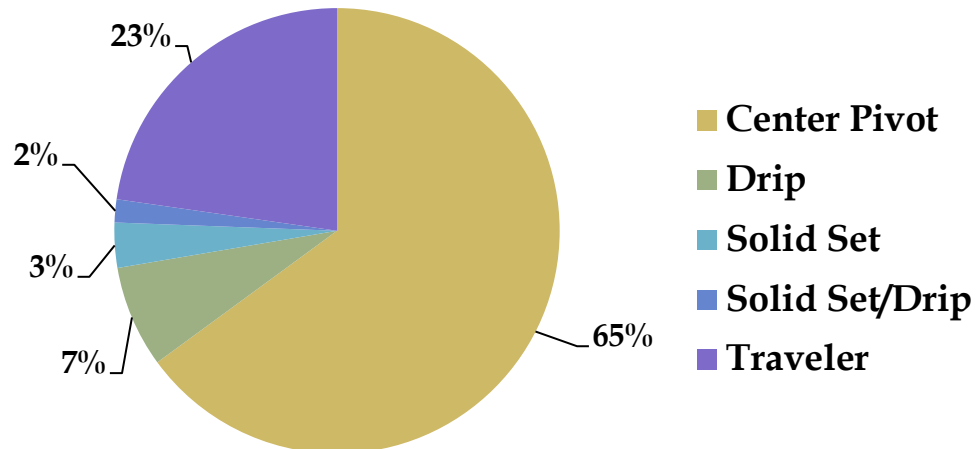
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Upper Flint RWPC

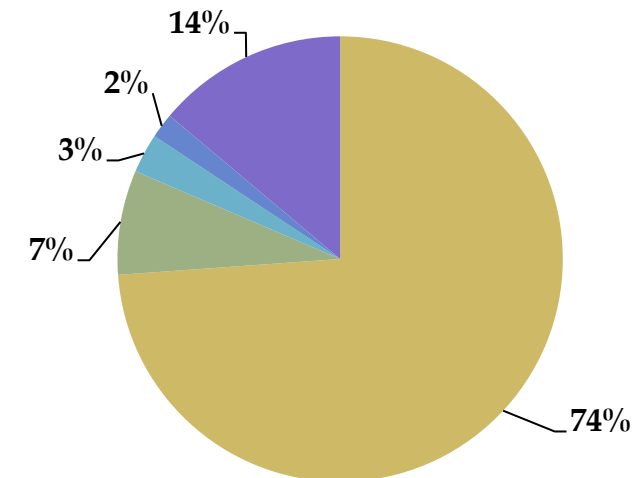
SLIDE 31

	2015	2020	% Change
Total # of Fields	3,803	4,130	+ 8.6%
Total Acreage	192,108	203,978	+ 6.2%
Total GW Acreage	131,858	145,227	+ 10.1%
Total SW Acreage	60,250	58,751	- 2.5%
Total Center Pivots	2,431	2,682	+ 10.3%
Center Pivot Acreage	140,719	150,666	+ 7.1%

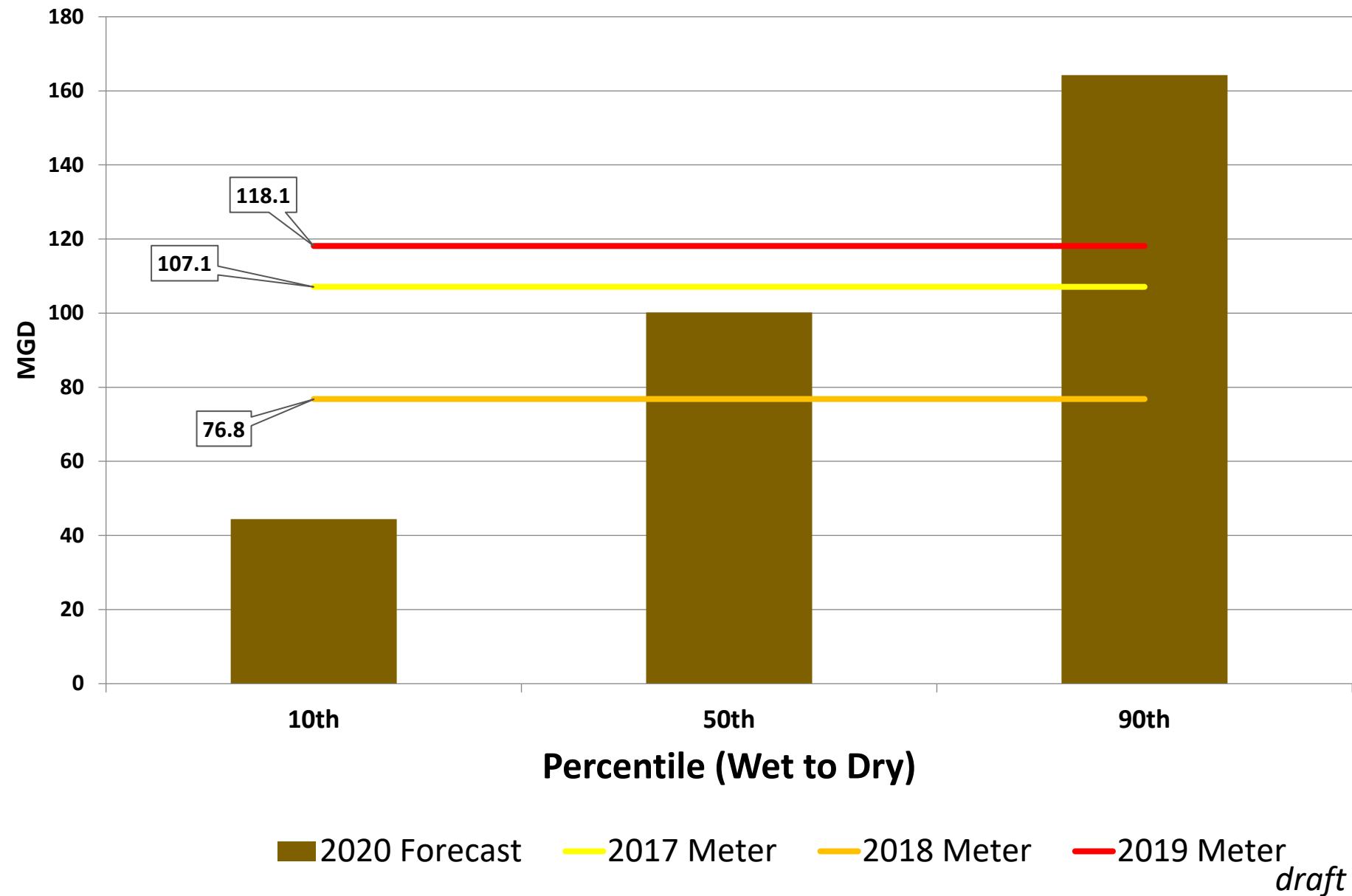
System Type - % of Systems



System Type - % of Acreage

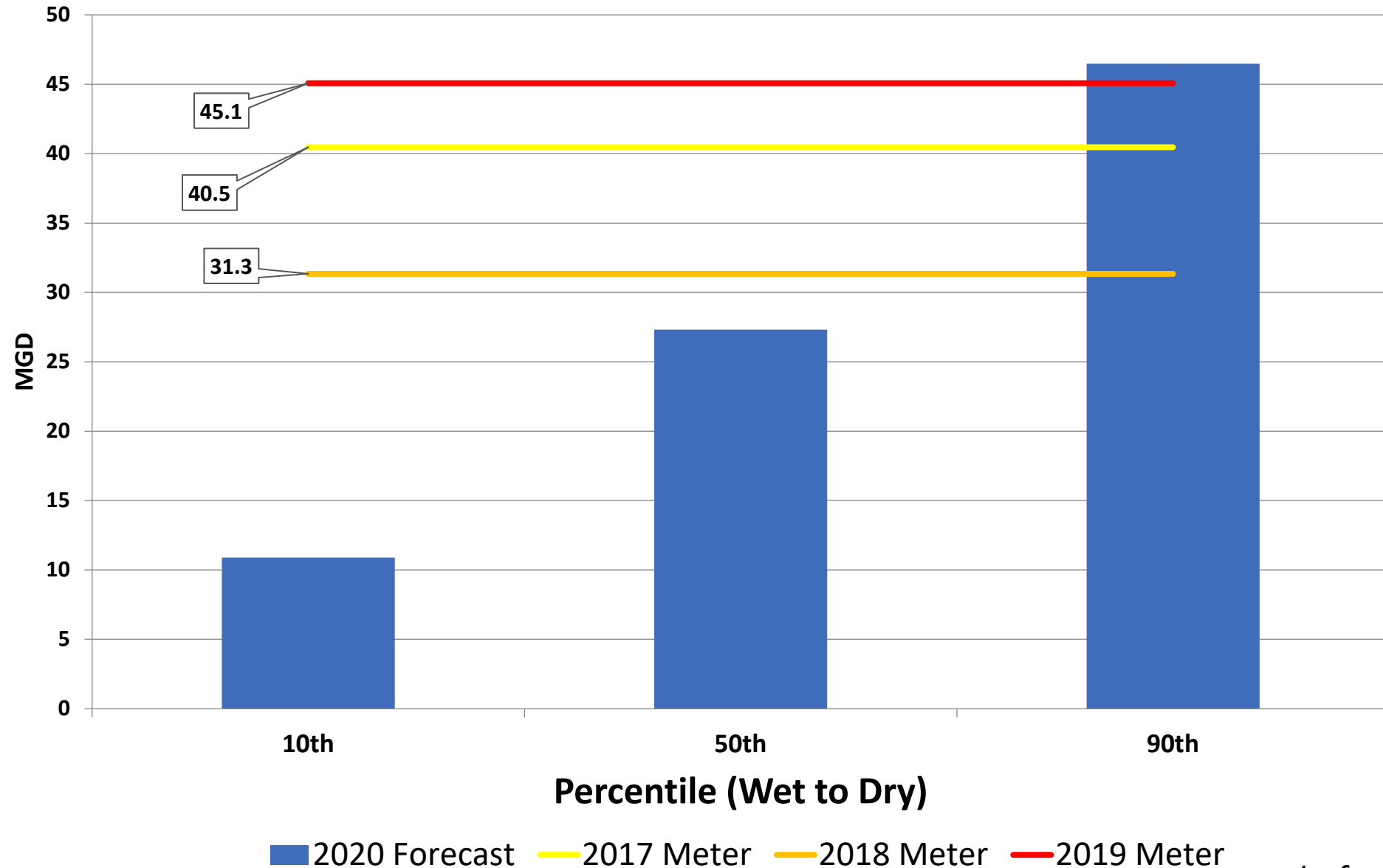


Upper Flint Groundwater



Upper Flint Surface Water

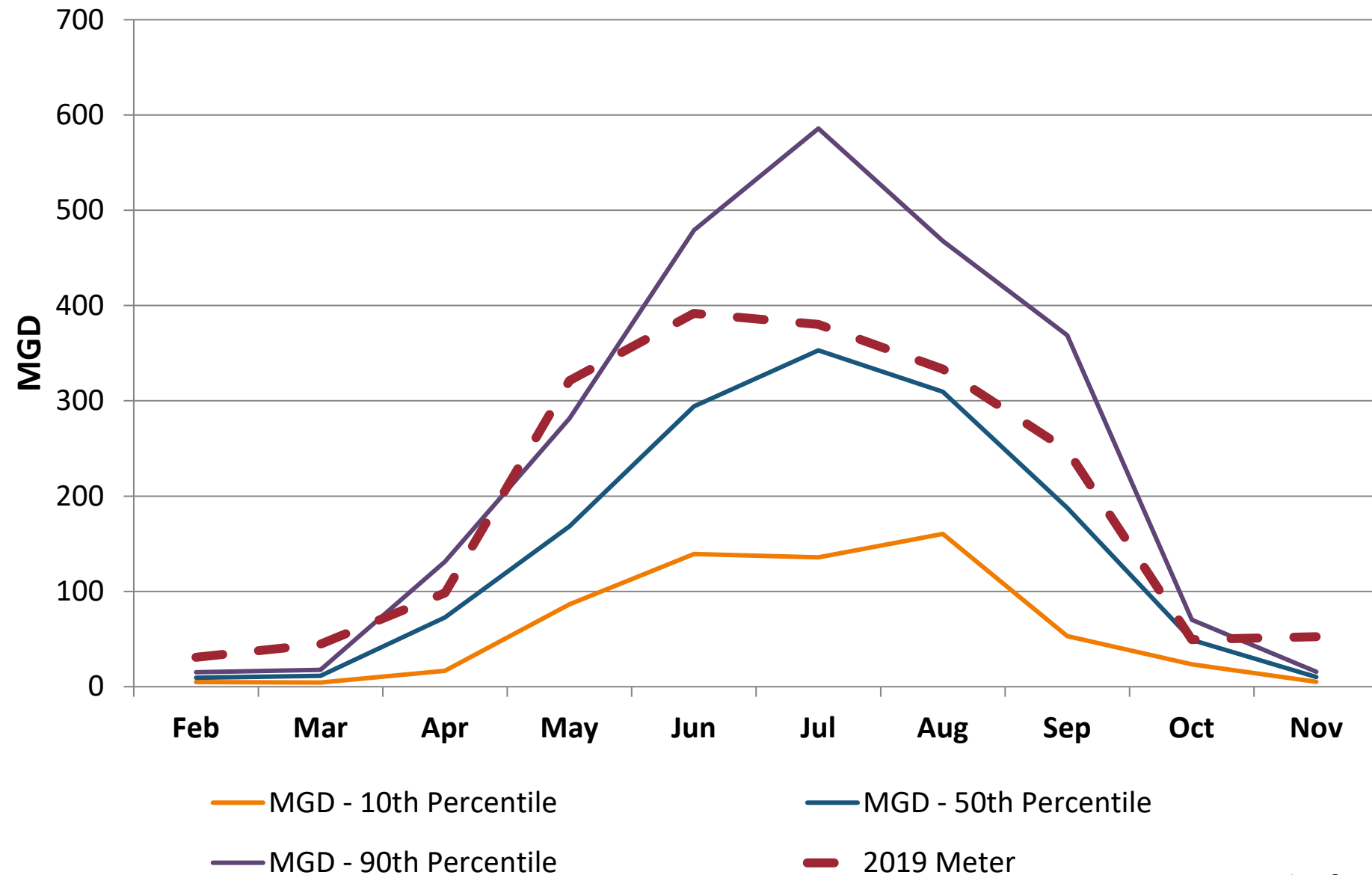
SLIDE 33



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Upper Flint - Monthly

SLIDE 34



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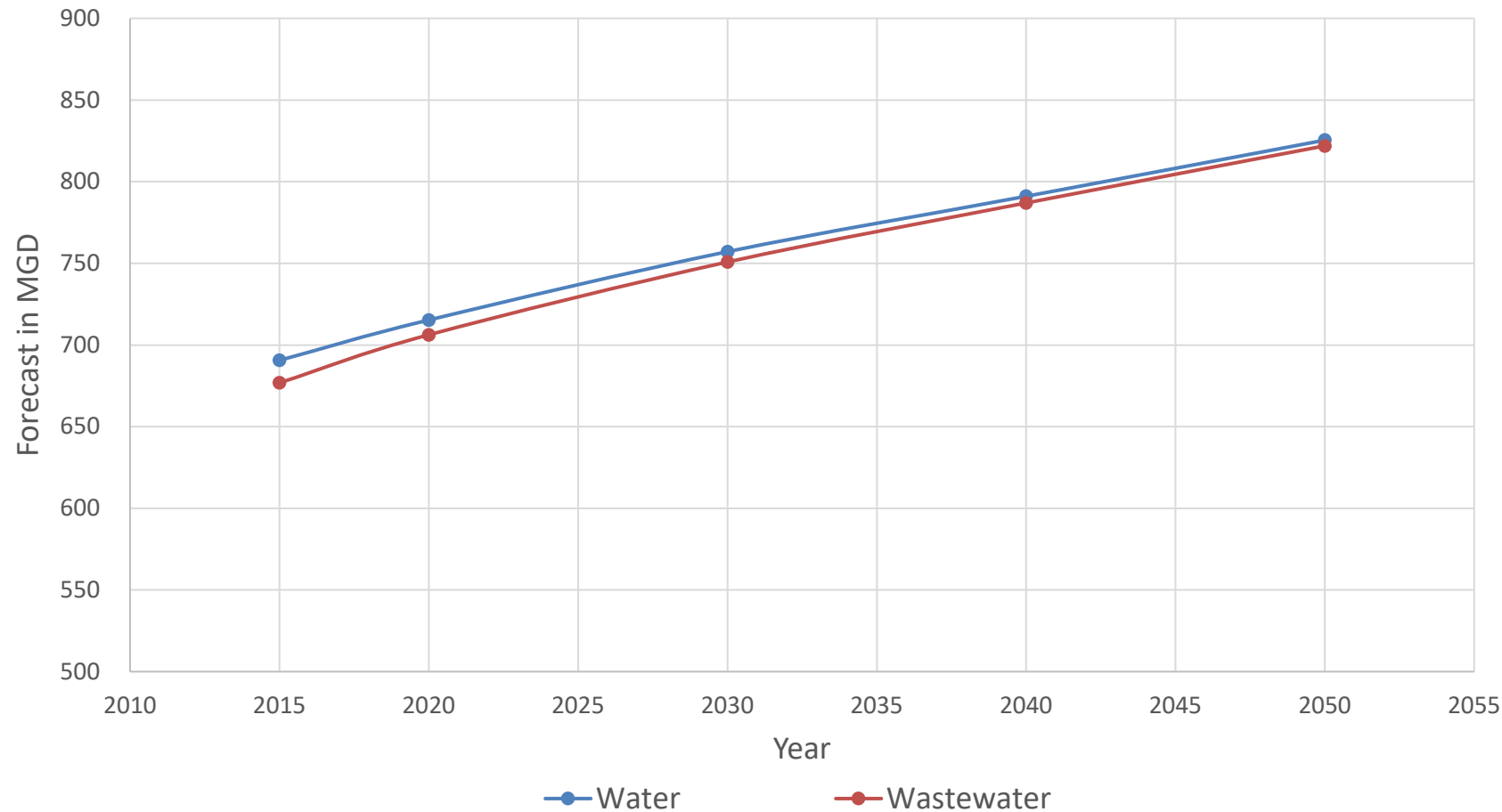
Municipal Water and Wastewater Demand Forecasts

Steve Simpson, Black & Veatch



2017 Regional Plans Municipal Water and Wastewater Forecast Data Review

SLIDE 36



Note: Data shown is for 10 regional water councils

Updated Municipal Water Demands (MGD)

SLIDE 37

Council	2020	2030	2040	2050	2060
Altamaha	27.01	26.4	25.71	24.82	24.11
Coastal Georgia	111.66	116.45	118.43	119.73	121.38
Coosa North Georgia	110.43	116.75	118.92	119.65	121.28
Lower Flint-Ochlockonee	45.96	44.61	42.71	40.51	38.79
Middle Chattahoochee	70.91	69.34	68.14	66.53	65.32
Middle Ocmulgee	84.89	89.55	93.39	97.01	102.38
Savannah-Upper Ogeechee	94.69	98.5	99.15	98.86	99.31
Suwannee-Satilla	56.63	58.79	58.57	57.62	56.77
Upper Flint	28.7	29.89	29.36	28.49	27.97
Upper Oconee	69.22	78.14	85.99	94.23	104.42
Total	700.1	728.43	740.39	747.44	761.73

Note: Data shown is for 10 regional water councils

Updated Municipal Wastewater Flows (MGD)

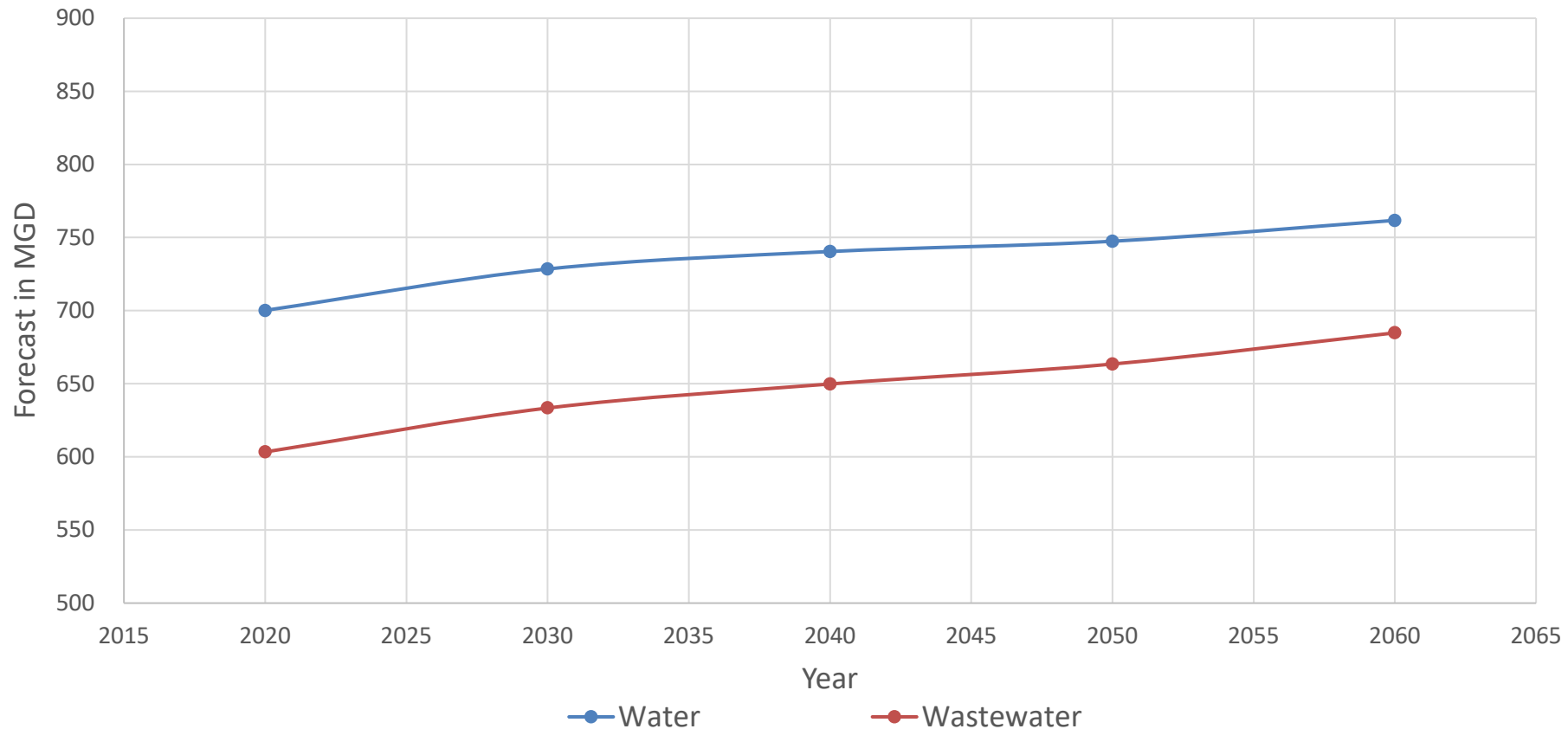
SLIDE 38

Council	2020	2030	2040	2050	2060
Altamaha	24.63	24.94	24.95	24.74	24.68
Coastal Georgia	86.24	92.93	96.46	99.49	103.36
Coosa North Georgia	81.40	86.77	89.27	91.04	93.75
Lower Flint-Ochlockonee	43.88	42.92	41.27	39.49	38.29
Middle Chattahoochee	68.66	68.64	67.89	66.91	66.51
Middle Ocmulgee	77.57	81.38	84.62	87.74	91.92
Savannah-Upper Ogeechee	81.08	83.84	84.37	84.27	85.03
Suwannee-Satilla	53.39	55.61	56.26	56.38	56.74
Upper Flint	24.94	25.55	25.45	25.15	25.20
Upper Oconee	61.67	70.92	79.38	88.38	99.43
Total	603.46	633.49	649.93	663.58	684.91

Note: Data shown is for 10 regional water councils

Updated Municipal Water and Wastewater Forecasts

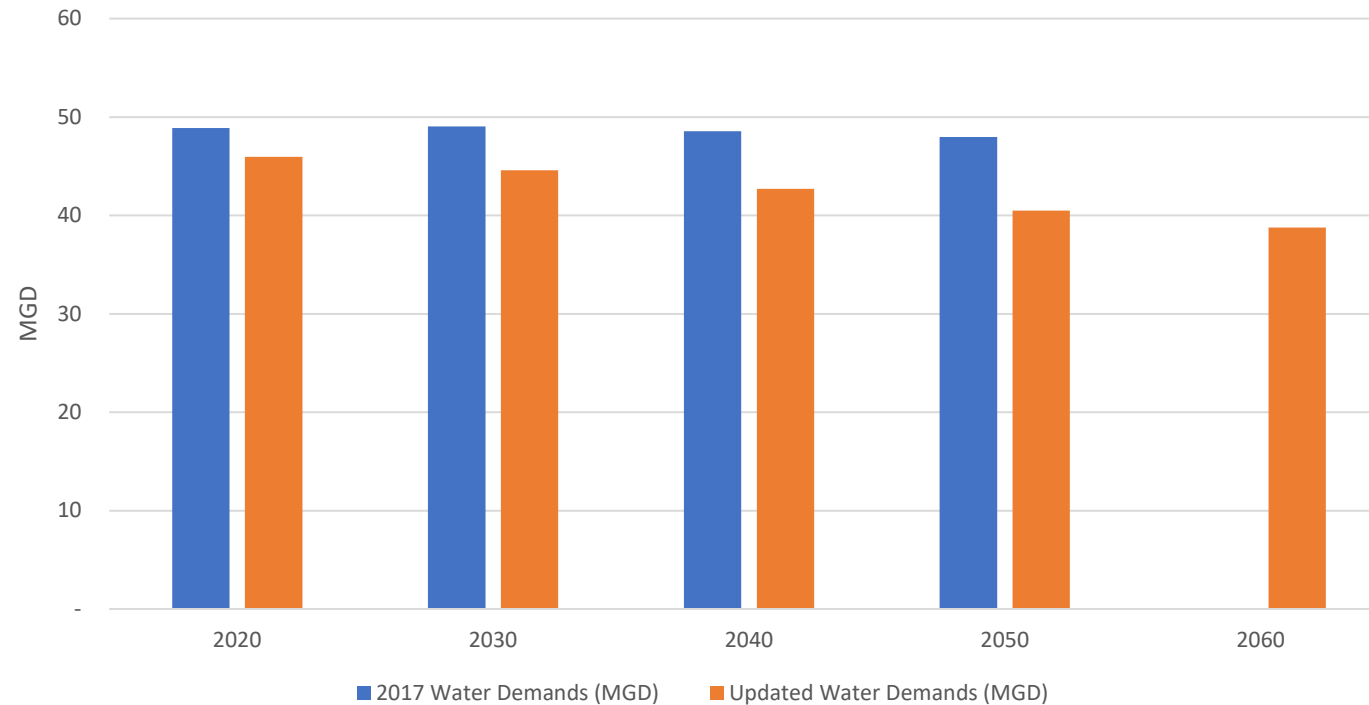
SLIDE 39



Note: Data shown is for 10 regional water councils

Lower Flint-Ochlockonee Municipal Water Demands

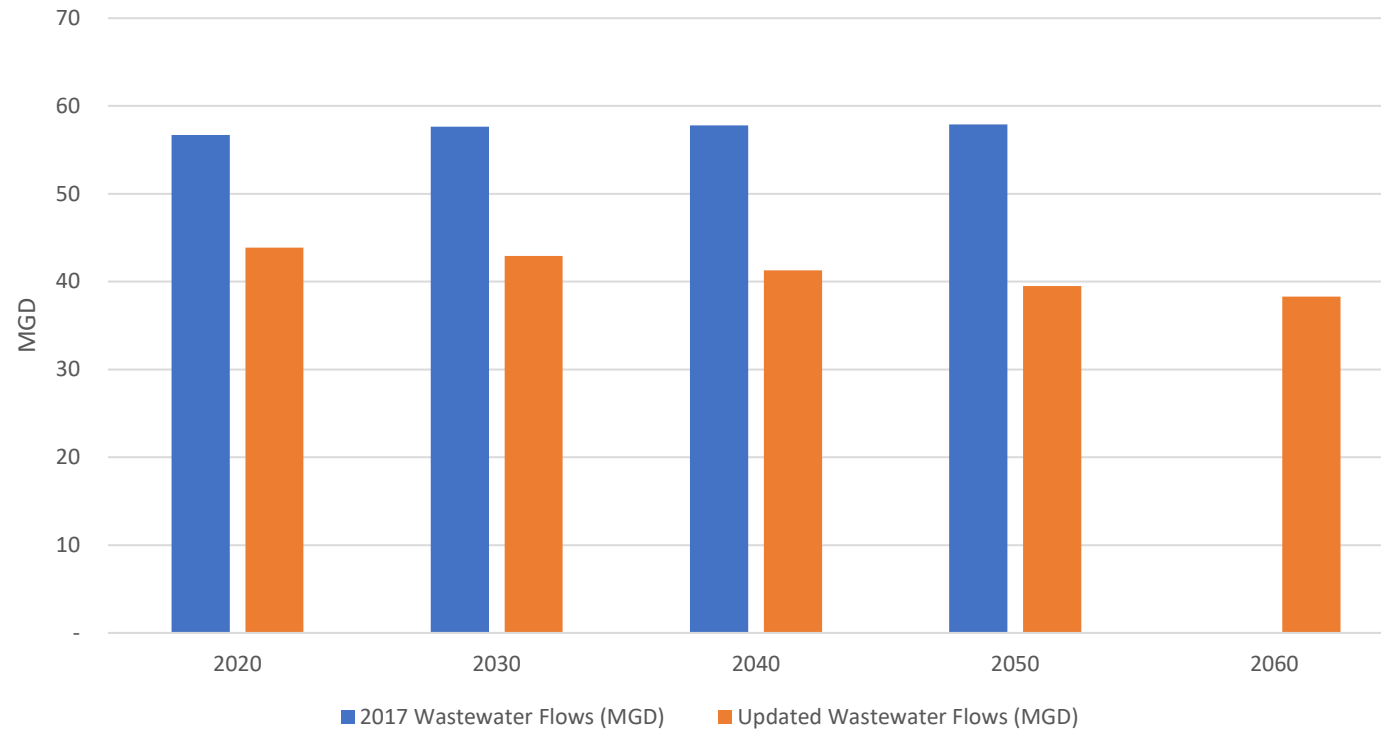
SLIDE 40



Source	2020	2030	2040	2050	2060
Groundwater	37.01	36.06	34.69	33.06	31.81
Self-Supplied	8.95	8.55	8.02	7.45	6.98
Total	45.96	44.61	42.71	40.51	38.79

Lower Flint-Ochlockonee Municipal Wastewater Forecasts

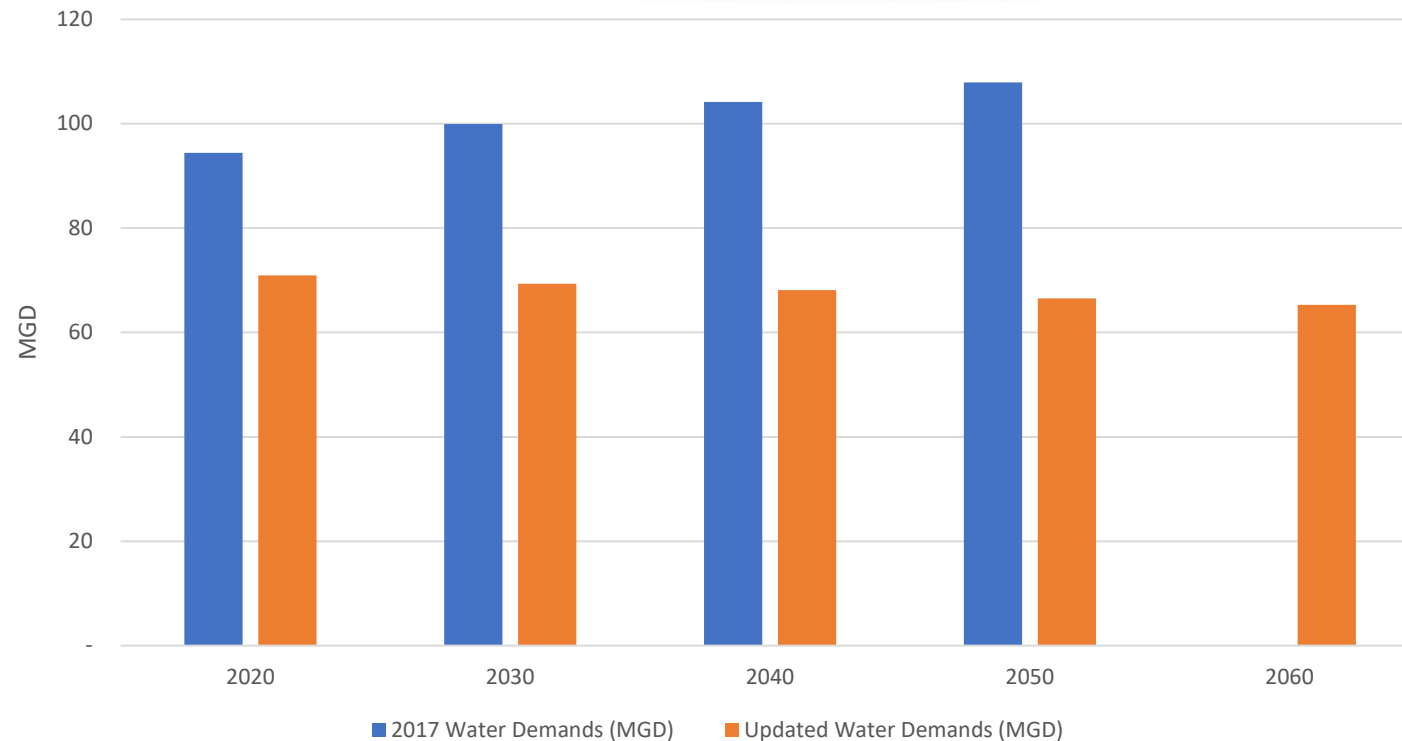
SLIDE 41



Source	2020	2030	2040	2050	2060
Point Source	29.65	28.89	27.64	26.35	25.49
LAS	2.42	2.36	2.27	2.18	2.11
Septic	11.81	11.67	11.35	10.96	10.68
Total	43.88	42.92	41.27	39.49	38.29

Middle Chattahoochee Municipal Water Demands

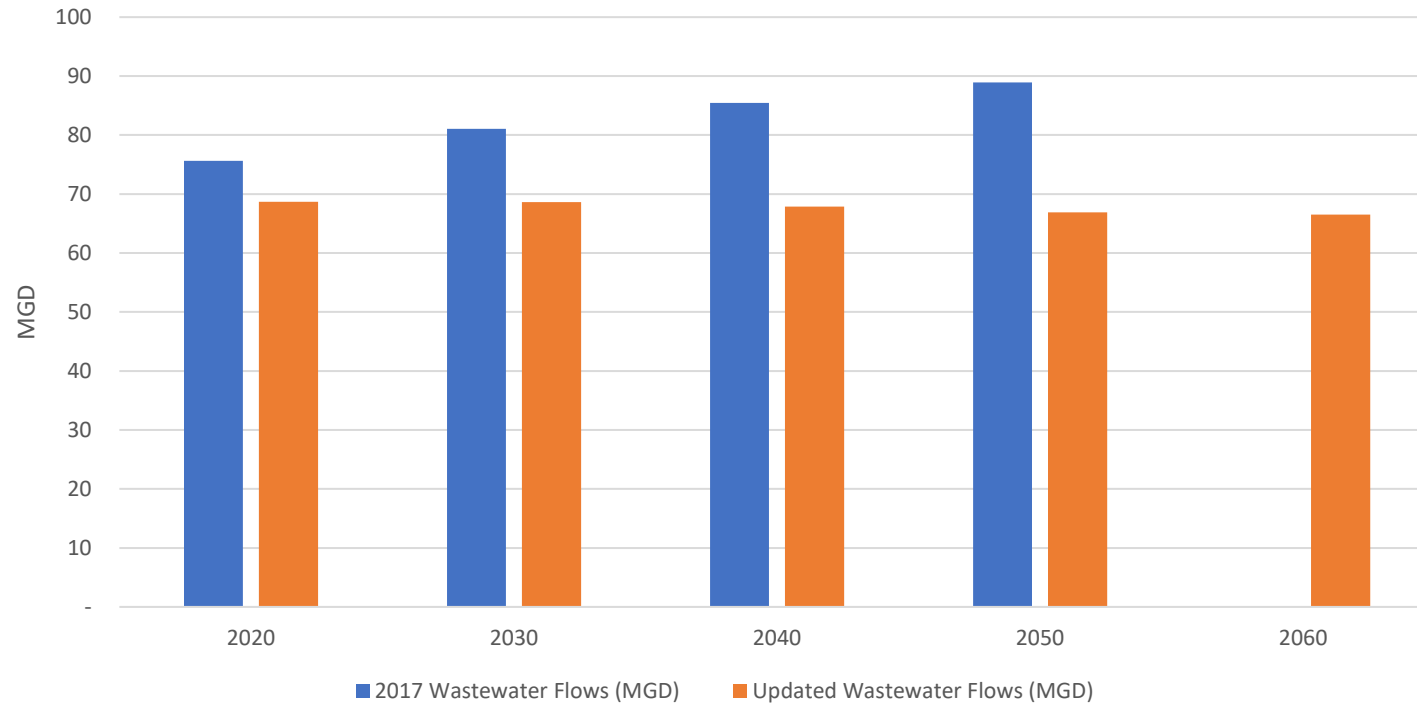
SLIDE 42



Source	2020	2030	2040	2050	2060
Surface Water	63.00	61.67	60.73	59.37	58.36
Groundwater	2.77	2.62	2.51	2.42	2.38
Self-Supplied	5.14	5.06	4.9	4.73	4.58
Total	70.91	69.35	68.14	66.52	65.32

Middle Chattahoochee Municipal Wastewater Forecasts

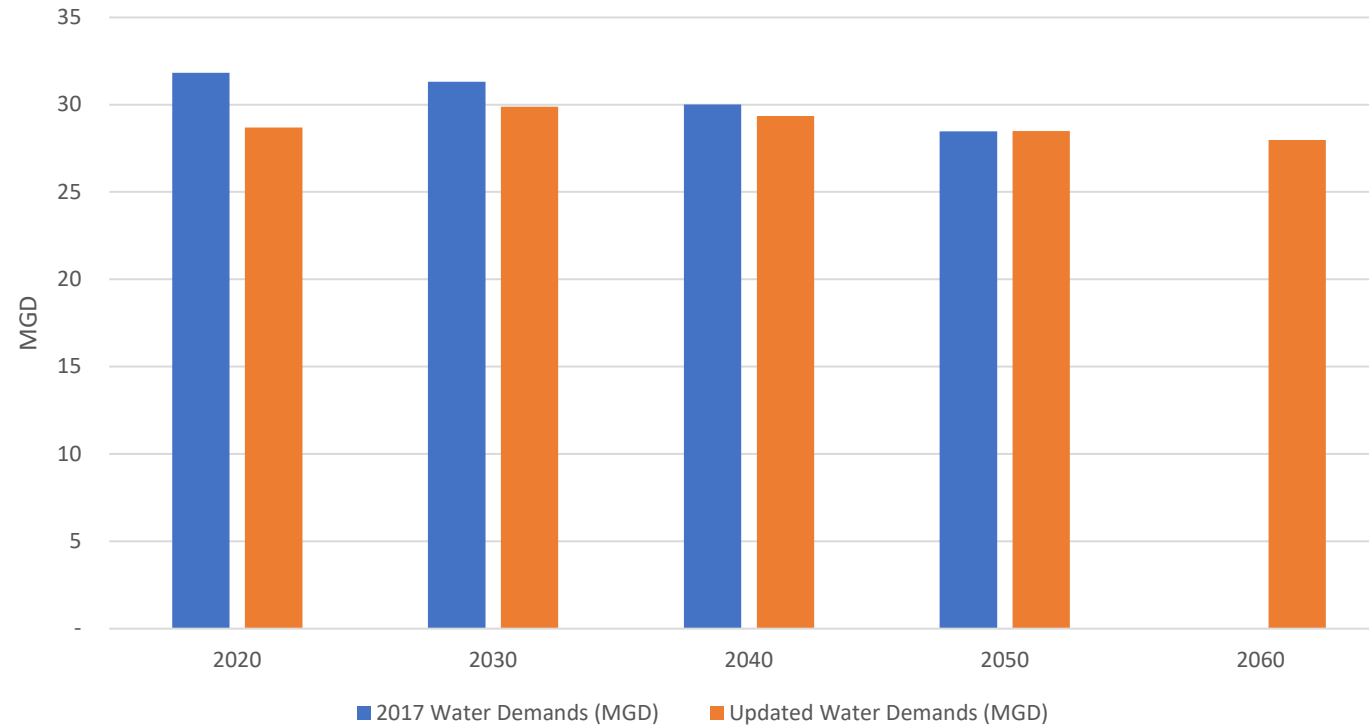
SLIDE 43



Source	2020	2030	2040	2050	2060
Point Source	48.47	46.73	44.62	42.35	40.53
LAS	6.57	7.17	7.69	8.20	8.76
Septic	13.61	14.73	15.58	16.36	17.22
Total	68.66	68.64	67.89	66.91	66.51

Upper Flint Municipal Water Demands

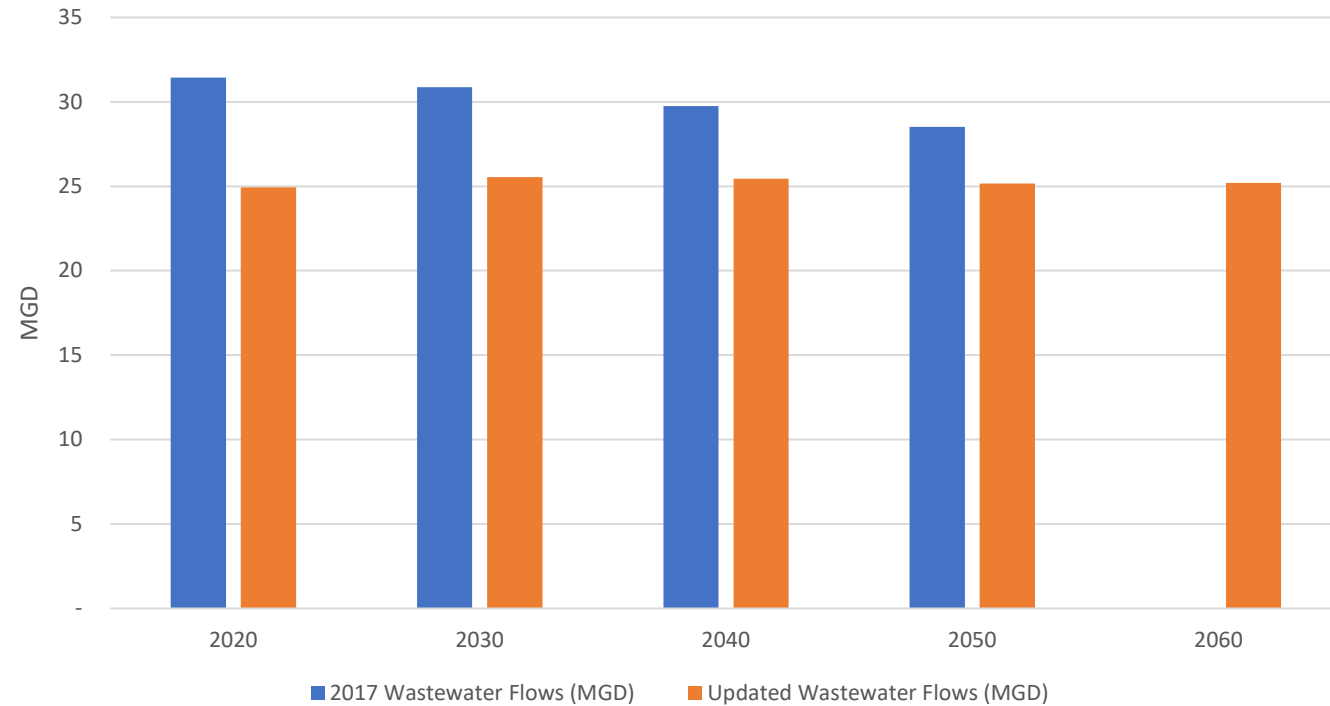
SLIDE 44



Source	2020	2030	2040	2050	2060
Surface Water	11.12	12.84	13.01	13.02	13.19
Groundwater	11.79	11.47	11.05	10.48	10.02
Self-Supplied	5.79	5.58	5.3	4.99	4.76
Total	28.70	29.89	29.36	28.49	27.97

Upper Flint Municipal Wastewater Forecasts

SLIDE 45



Source	2020	2030	2040	2050	2060
Point Source	10.73	10.80	10.60	10.32	10.17
LAS	5.09	5.27	5.27	5.24	5.31
Septic	9.12	9.49	9.58	9.59	9.73
Total	24.94	25.55	25.45	25.15	25.20



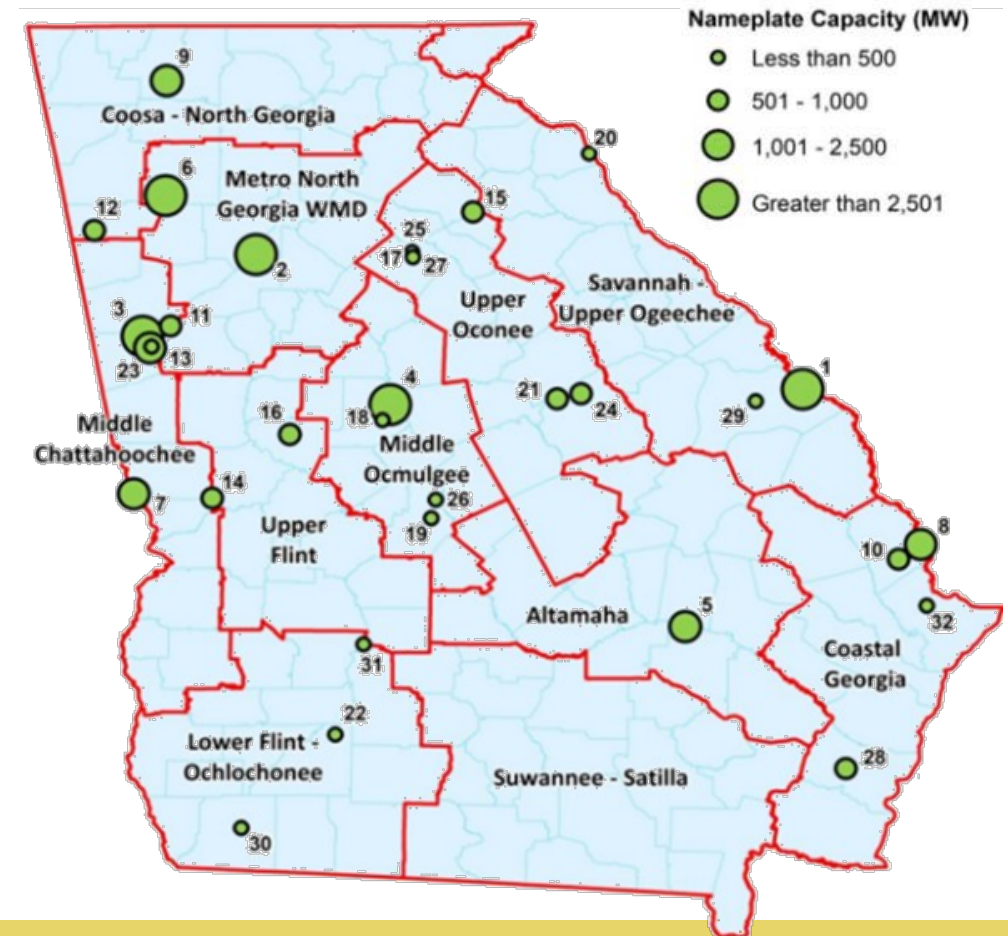
Energy Water Demand Forecast

<https://waterplanning.georgia.gov/forecasting/energy-water-use>

Energy Demand Forecast Update

Participating Representatives from:

- Georgia Power / Southern Company
- Municipal Electric Authority of Georgia (MEAG)
- Oglethorpe Power Corporation
- Dalton Utilities
- Georgia Public Service Commission
- Georgia Environmental Finance Authority



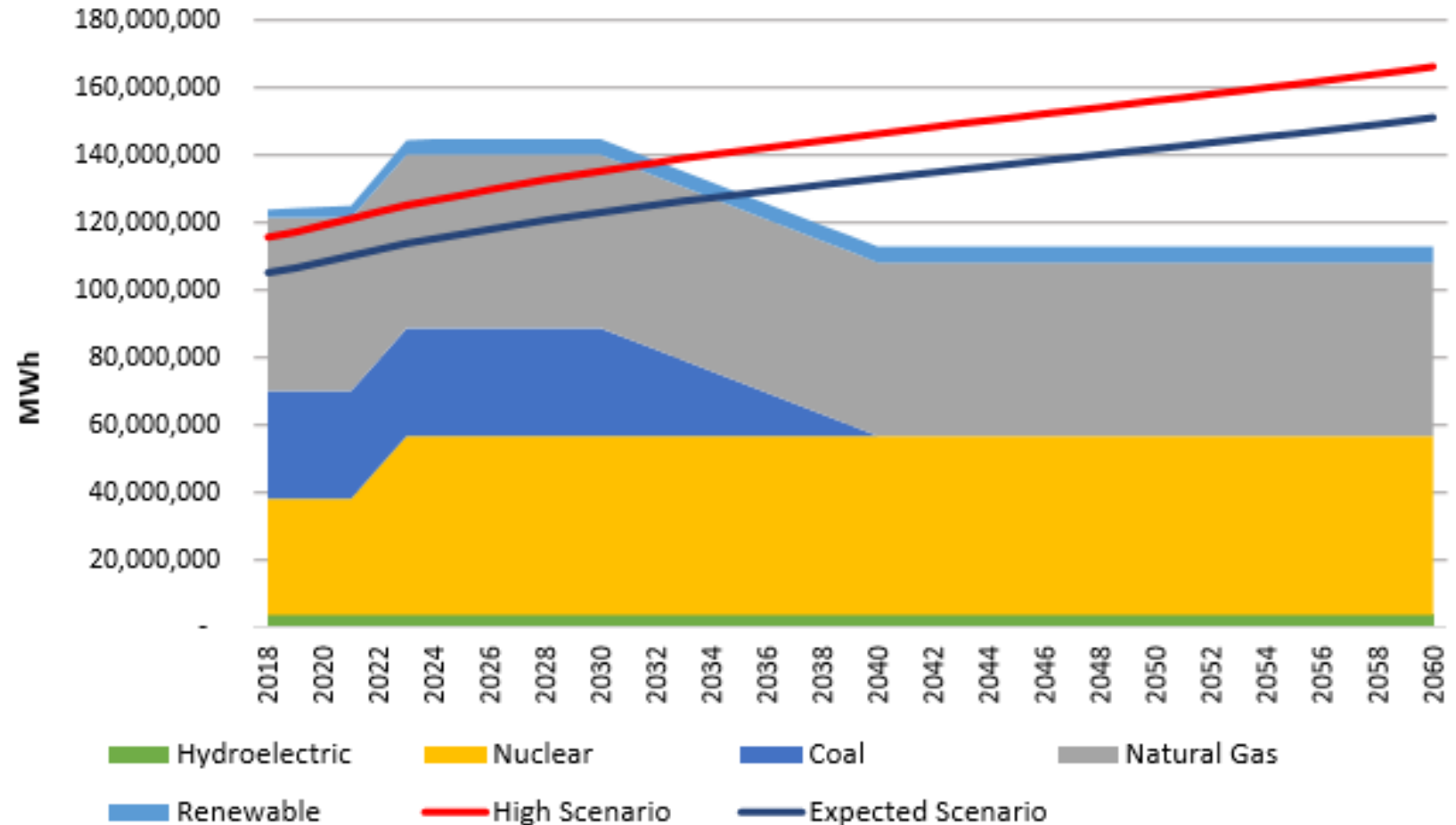
Generating Facilities in LFO – MC - UF

Planning Region	County	Facility	2011	2017	2020	CAP (MW)	Source
LFO	Dougherty	Plant Mitchell	Coal	retired	retired	247	SW
LFO	Worth	Crisp Co. Power	Coal	Coal	retired	13	SW
				NG	NG		
LFO	Mitchell	Sowega/Gum Pond		NG	NG	342	GW
LFO	Decatur	SE Elec. Plant Bainbridge			NG	80	Municipal
MC	Heard	Plant Wansley	Coal	Coal	Coal	1,904	SW
				NG	NG	2,373	
MC	Heard	Oglethorpe Hawk Road			NG	495	no permits
MC	Heard	Teneska GA Gen. Facility			NG	1,099	Municipal
MC	Lee (AL)	Plant Franklin	NG	NG	NG	1,996	SW
UF	Talbot	Oglethorpe Talbot Co. Energy			NG	726	Municipal
UF	Upton	Southern Plant Addison			NG	701	Municipal

Using Current Generating Capacity for the Future

SLIDE 49

- Nuclear generation (yellow) will increase with Vogtle 3&4
- Coal generation (blue) will be phased out in the future
- Both Natural Gas and Renewable assumed to increase to meet the need



2020 Energy Sector Water Demand Forecast

Expected Scenario

SLIDE 50

MGD		2020	2030	2040	2050	2060
Statewide	Withdrawals	383.1	487.1	354.0	360.4	366.9
Statewide	Consumption	234.7	301.3	241.6	247.3	253.0
Lower Flint-Ochlockonee	Withdrawals	0.1	0.1	0.2	0.2	0.2
Lower Flint-Ochlockonee	Consumption	0.1	0.1	0.1	0.1	0.2
Middle Chattahoochee	Withdrawals	32.1	32.1	25.2	27.9	30.6
Middle Chattahoochee	Consumption	23.2	23.2	22.2	24.5	26.9
Upper Flint	Withdrawals	0.6	0.6	0.8	0.9	1.0
Upper Flint	Consumption	0.5	0.5	0.7	0.8	0.8



Industrial Water Demand Forecast

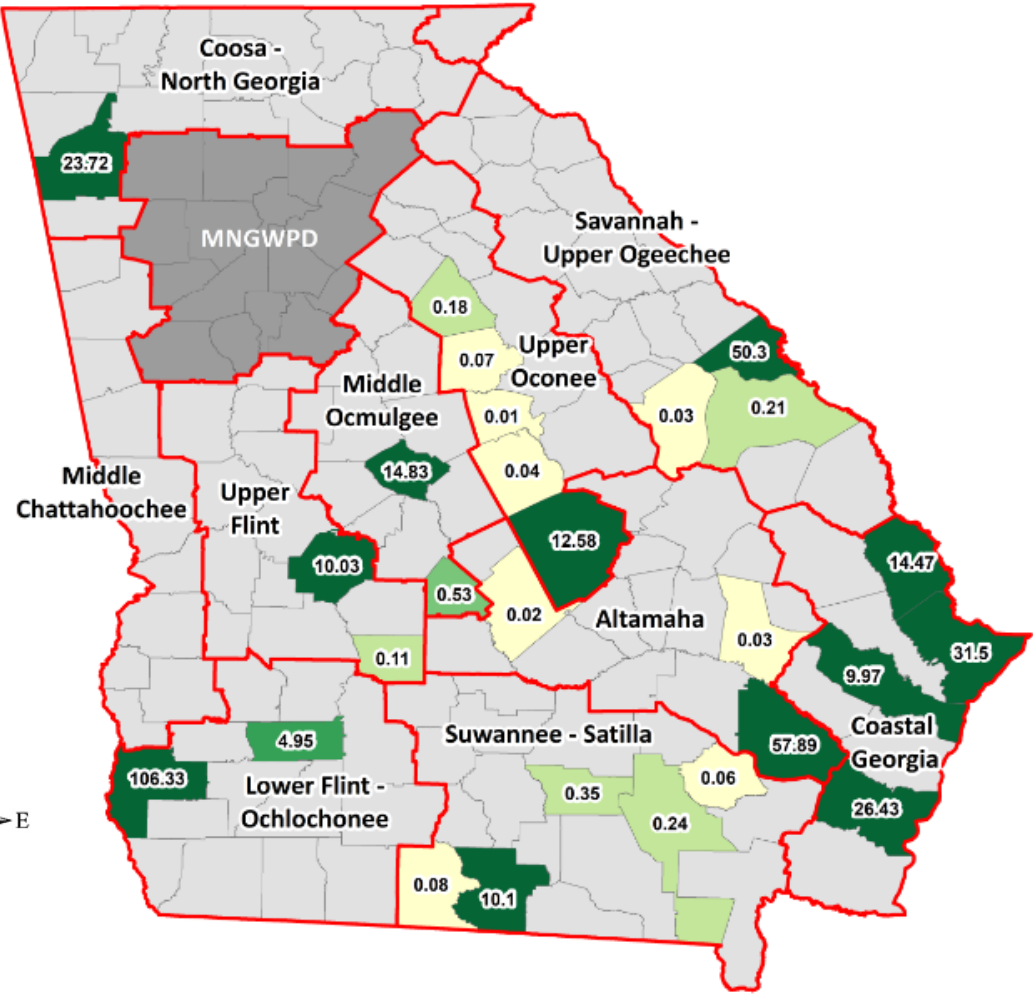
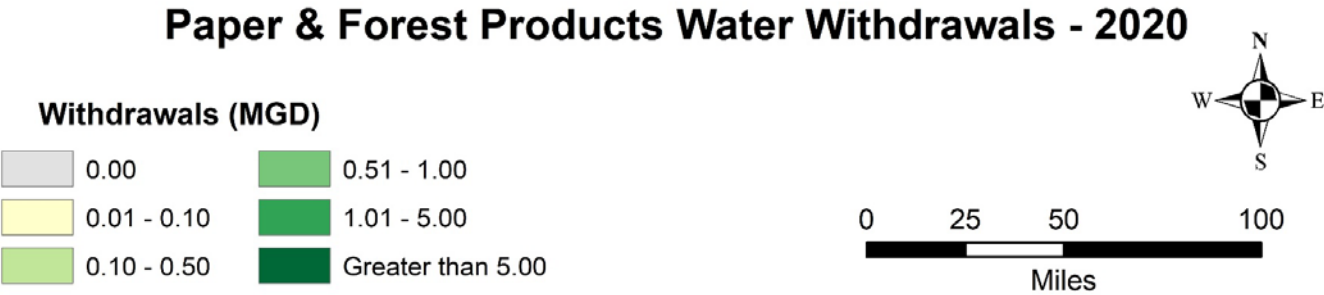
<https://waterplanning.georgia.gov/forecasting/industrial-water-use>

Industrial Stakeholder Advisory Group

- BASF
- Covia
- Georgia Association of Manufacturers
- Georgia Chemistry Council
- Georgia Department of Economic Development
- Georgia Mining Association
- Georgia Pacific
- Georgia Paper and Forest Products Association
- Georgia Poultry Federation
- Georgia Tech Research Institute
- Gerdau Steel
- Gulfstream Aerospace
- International Paper
- Irving Consumer Products
- Kamin
- Kia Motors
- Milliken and Company
- Mohawk Industries
- Office of Planning and Budget
- Packaging Corporation of America
- Rayonier Performance Fibers
- SAFT, Inc.
- Southwire
- Toyo Tire

Paper & Forest Products

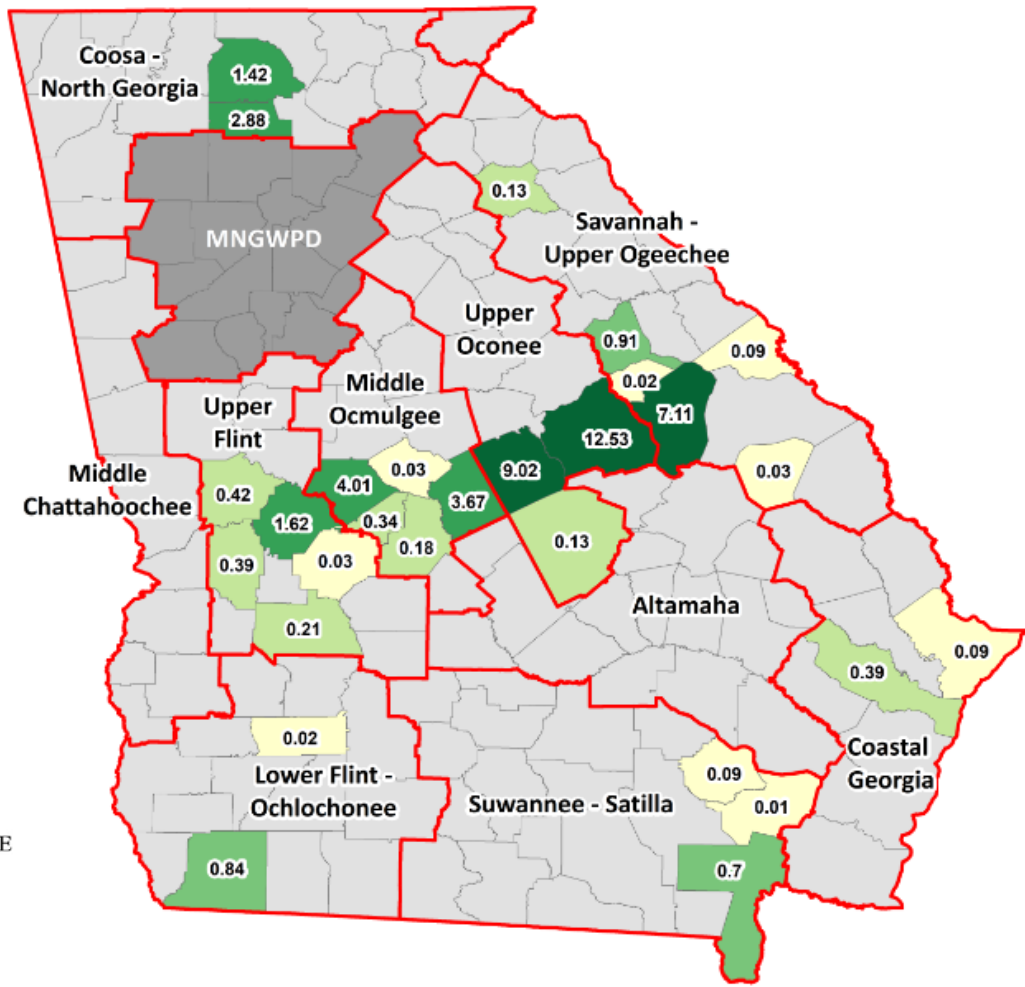
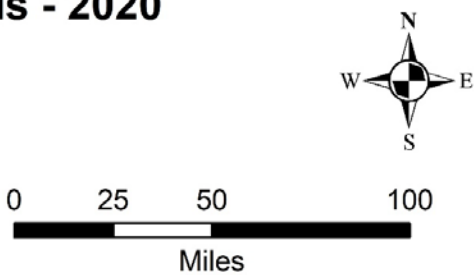
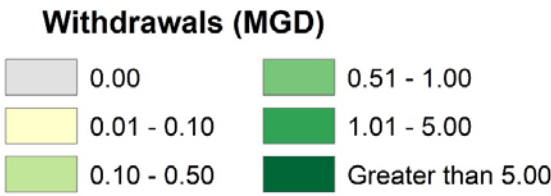
- Water use to remain constant using the (2010 to 2019)10-year average water withdrawals by location



Mining

- Water use to remain constant using the (2010 to 2019)10-year average water withdrawals by location

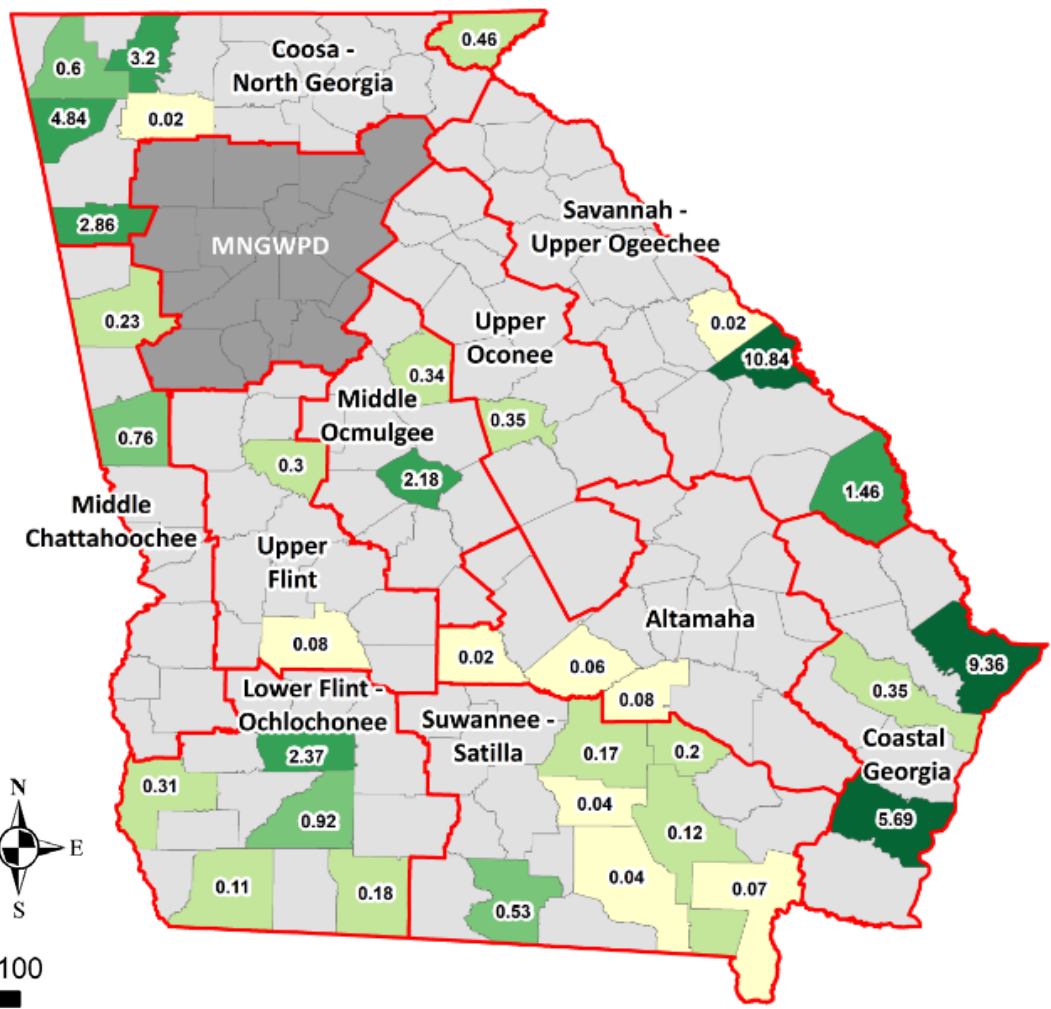
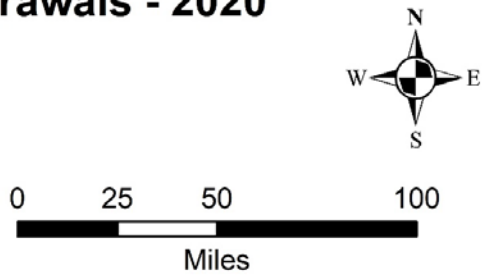
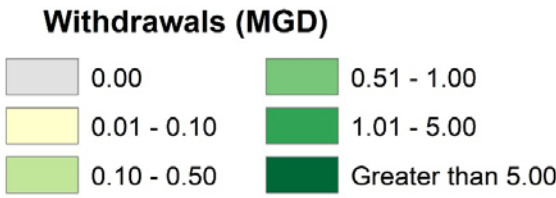
Mining Water Withdrawals - 2020



Manufacturing

- Water use to remain constant using the (2010 to 2019)10-year average water withdrawals by location

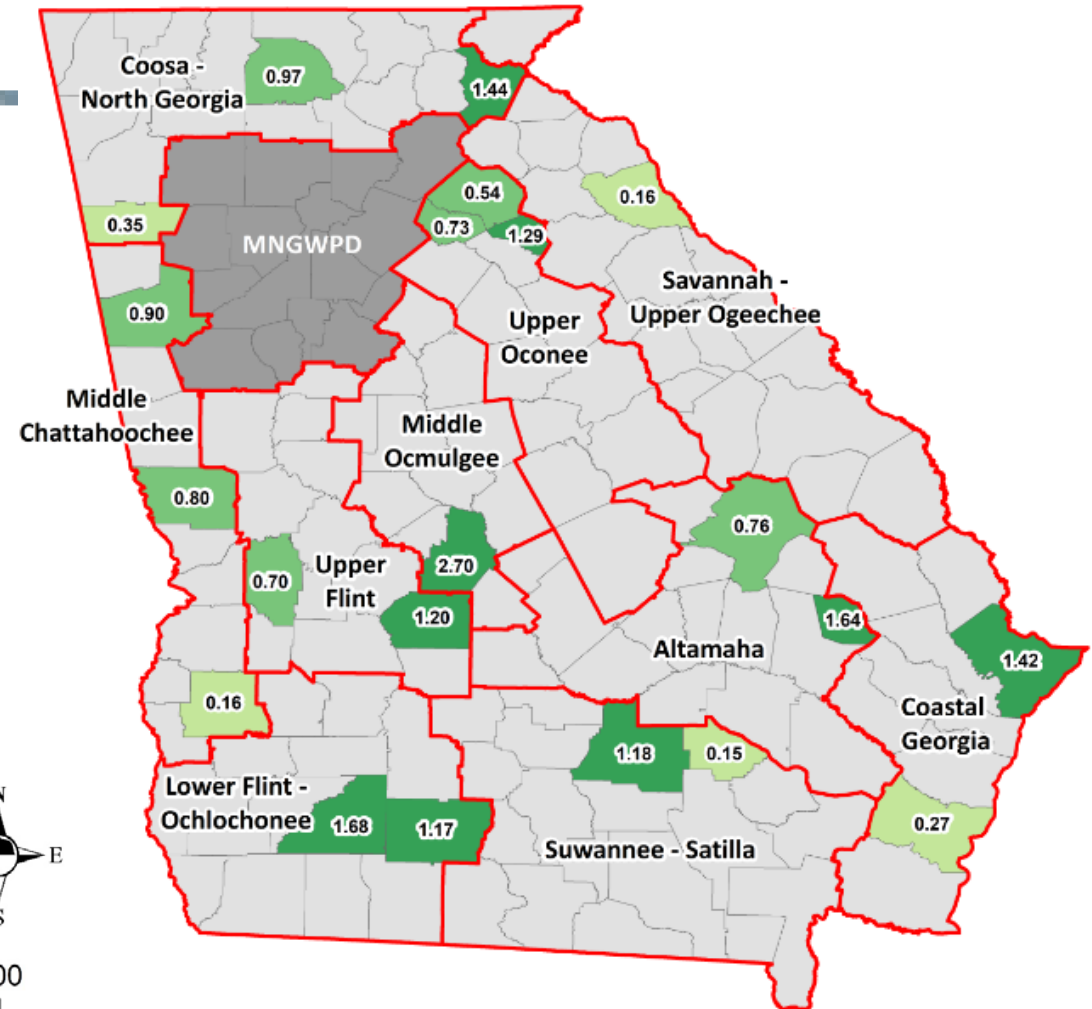
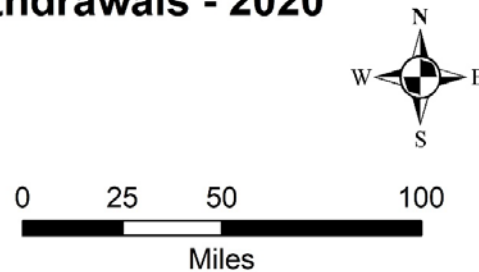
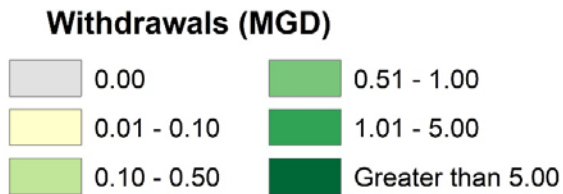
Manufacturing Water Withdrawals - 2020



Food Processing

- Poultry processing projected to increase
- Non-poultry processing to remain constant at 10-year average water withdrawals

Food Processing Water Withdrawals - 2020



2020 Industrial Water Demand Forecast

MGD	2020	2030	2040	2050	2060
Statewide	502.8	507.6	514.5	518.8	521.4
Lower Flint-Ochlockonee	119.0	119.7	120.4	120.9	121.1
Middle Chattahoochee	2.8	3.0	3.4	3.7	3.8
Upper Flint	15.3	15.4	15.7	15.8	15.9

PUBLIC COMMENT

Next Steps

SLIDE 59

- New Member Orientation – All Members Welcome!
- Next Council Meeting – Continued Work to Review and Revise the Plan
- Meeting Dates