

Appendix: Community Facilities

Water Supply and Conservation

Water supply service and management throughout the Metro Water District is provided by over 50 individual water providers. Water management includes supply, treatment, distribution, interconnections, and the interaction of these infrastructure systems with the natural systems. The structure of these local water providers differs across the Metro Water District; however, the majority are city or county-operated water and/or wastewater providers. A few third-party providers exist that provide water for a conglomerate of entities.

The Metro Water District currently has 38 existing publicly-owned surface water treatment plants, ranging in permitted capacity of less than 1 MGD to 150 PD-MGD (peak day - million gallons per day), providing a combined permitted treatment capacity of 1,136 PD-MGD. The permitted treatment capacity of 1,136 PD-MGD or 710 AAD-MGD treats water from the 882 AAD-MGD of permitted surface water withdrawals. Approximately 600 AAD-MGD (average annual day-million gallons per day) of potable water is currently withdrawn and provided to customers within the Metro Water District by publicly owned water providers through a series of raw water supplies and treatment facilities.

For more information on Water Supply and Conservation Issues please see the Water Resource Plans developed and adopted by the Metropolitan North Georgia Water Planning District (www.northgeorgiawater.com).

Existing Municipal Permitted Surface Water Supplies (2006)

Chattahoochee River Basin (Total Permitted Monthly Average Withdrawal = 767.85 MGD)

Chattahoochee River
Lake Lanier
Bear Creek Reservoir
Dog River Reservoir
Big Creek
Sweetwater Creek (fills Ben Hill Reservoir)
Cedar Creek Reservoirs
Cedar Creek (B.T. Brown) Reservoir
J.T. Haynes Reservoir
Sandy Brown Creek

Existing Municipal Permitted Surface Water Supplies (2006)

Coosa River Basin (Total Permitted Monthly Average Withdrawal = 147.85 MGD)

Etowah River
Yellow Creek Reservoir (Hollis Q. Lathem/Etowah River)
Allatoona Lake
Lewis Spring
Bolivar Springs
Moss Springs

Hickory Log Creek Reservoir

Existing Municipal Permitted Surface Water Supplies (2006)

Flint River Basin (Total Permitted Monthly Average Withdrawal = 52.98 MGD)

Flint River
J.W. Smith and Shoal Creek Reservoirs
White Oak Creek
Line Creek
Hutchins' Lake
Whitewater Creek
Lake Kedron
Lake Peachtree (Flat Creek)
Lake Horton
Whitewater Creek
Lake McIntosh
Still Branch Creek Reservoir

Existing Municipal Permitted Surface Water Supplies (2006)

Ocmulgee River Basin (Total Permitted Monthly Average Withdrawal = 85.8 MGD)

W.J Hooper Reservoir (Little Cotton Indian Creek)
Blalock Reservoir/Pates Creek
John Fargason (Walnut Creek) Reservoir
Rowland (Long Branch) Reservoir
Towaliga River Reservoirs (Strickland and Cole)
Tusahaw Creek Reservoir
Big Haynes Creek (Randy Poynter Lake)
Brown Branch

Existing Municipal Permitted Surface Water Supplies (2006)

Oconee River Basin (Total Permitted Monthly Average Withdrawal = 2 MGD)

Cedar Creek Reservoir
North Oconee River (fills Cedar Creek Reservoir)

Existing Municipal Permitted Surface Water Supplies (2006)

Tallapoosa River Basin (Total Permitted Monthly Average Withdrawal = 1.5 MGD)

Lake Fashion
Cowan Lake

Figure 1 shows that in 2035, the Metro Water District’s water demands will approach 1,011 AAD-MGD (1,159 without conservation measures) with aggressive water conservation. Water demand forecasts for the Metro Water District were based on three main data inputs: 1) billing and production data, 2) population and employment forecasts, and 3) estimates of the current stock of plumbing fixtures and appliances for each county. The current permitted surface water supply is 882 AAD-MGD, therefore to meet the projected future water supply needs in the Metro Water District through 2035, additional water supply sources will be needed. The District anticipates 1,140 AAD-MGD of permitted water supply in 2035. Specific water supply sources are detailed in Figure 2 that begins on the following page.

Figure 1: Metro Water District 2035 Water Use Forecasts by County

County	Without Conservation (AAD-MGD)	Baseline (AAD-MGD)	Recommended Conservation Program (AAD-MGD)
Bartow	55.4	52.8	46.4
Cherokee	50.5	47.8	44.6
Clayton	45.0	42.7	40.0
Cobb	121.0	115.3	108.7
Coweta	33.5	31.9	29.3
DeKalb	123.4	116.0	106.4
Douglas	29.7	27.5	24.5
Fayette	26.0	24.3	23.0
Forsyth	69.5	66.9	59.7
Fulton	263.2	250.0	228.2
Gwinnett	161.5	153.6	140.4
Hall	57.3	54.3	52.0
Henry	49.2	46.9	43.4
Paulding	52.0	49.2	47.2
Rockdale	22.0	20.2	16.9
District Total	1159.2	1099.4	1010.8

Source: MNGWPD Water Supply and Conservation Management Plan (May 2009)

Figure 2: Surface Water Supply Sources Through 2035

Water Supply Source	Owner/Operator Utilizing Source	2035 Planned Permitted Monthly Average Withdrawal (MGD) [Note 10]
<i>Chattahoochee River Basin</i>		
1 Lake Lanier	City of Cumming	27
	Forsyth County Water Resources	51
	Gwinnett County DWR	169
	City of Buford	3.22
	City of Gainesville Public Utilities	53
2 Chattahoochee River	Cobb County-Marietta Water Authority	87
	DeKalb County Watershed Management	140
	City of Atlanta Watershed Management	180
	Atlanta - Fulton County Water Resources	116
	Forsyth County / City of Cumming	(Note 1)
3 Glades Reservoir (Flat Creek)	Hall County	TBD
4 Big Creek	City of Roswell	3.75
5 Sweetwater Creek	City of East Point	11.5
6 Bear Creek (Douglas County)	Douglasville-Douglas County Water and Sewer Authority	(Note 2)
7 Dog River	Douglasville-Douglas County Water and Sewer Authority	23
8 Bear Creek (Fulton County)	TBD	11
9 Cedar Creek (Fulton County)	City of Palmetto	0.45
10 Cedar Creek (BT Brown) Reservoir (Coweta County)	Coweta County Water and Sewerage Authority	7.5
11 Sandy Brown Creek and J.T. Haynes Reservoir	Newnan Utilities	15.8
12 Chattahoochee Basin Options	Coweta County	8
Chattahoochee River Basin Total		907.22
<i>Coosa River Basin</i>		
13 Etowah River	City of Canton	13.5
	City of Cartersville	(Note 3)

Water Supply Source	Owner/Operator Utilizing Source	2035 Planned Permitted Monthly Average Withdrawal (MGD) [Note 10]
14 Etowah Watershed Reservoir (Note 4)	Fulton County	15
15 Etowah River / Yellow Creek (Lathem Reservoir)	Cherokee County Water and Sewerage Authority	39.8
16 Etowah River / Hickory Log Creek	Cobb County-Marietta Water Authority City of Canton	(Note 5)
17 Allatoona Lake	Cobb County-Marietta Water Authority City of Cartersville	106.5 52.5
18 Etowah River / Richland Creek	Paulding County	30
19 Lewis Spring	City of Adairsville	4.5
20 Moss Springs	City of Emerson	0.5
21 Bolivar Springs	Bartow County	0.8
22 Bannister Creek	Forsyth County	TBD (Note 1)
23 Etowah Watershed Reservoir	Forsyth County	
Coosa River Basin Total		263.1
Flint River Basin		
24 Flint River	Clayton County Water Authority Fayette County Water System	(Note 6) (Note 7)
25 J.W. Smith and Shoal Creek Reservoirs	Clayton County Water Authority	19.8 (Note 8)
26 Whitewater Creek	City of Fayetteville Fayette County Water System (Note 6)	3
27 Lake Kedron / Lake Peachtree (Flat Creek)	Fayette County Water System	31
28 Lake Horton (Horton Creek)	Fayette County Water System	
29 Lake McIntosh (Line Creek)	Fayette County Water System	
30 Line Creek	Newnan Utilities	(Note 9)
31 White Oak Creek	Newnan Utilities	
32 Hutchins' Lake (Keg Creek)	City of Senoia	0.45
33 Still Branch Creek	City of Griffin (to Coweta County)	7.5
Flint River Basin Total		61.75

Water Supply Source	Owner/Operator Utilizing Source	2035 Planned Permitted Monthly Average Withdrawal (MGD) [Note 10]
Ocmulgee River Basin		
34 W.J. Hooper Reservoir (Little Cotton Indian Creek)	Clayton County Water Authority	39.5 (Note 8)
35 Blalock Reservoir (Pates Creek)	Clayton County Water Authority	
36 Fargason (Walnut Creek) Reservoir	City of McDonough	2.4
37 Towaliga River Reservoirs (Strickland and Cole)	Henry County Water and Sewerage Authority	21.75
38 Gardner (Indian Creek) Reservoir	Henry County Water and Sewerage Authority	
39 Rowland (Long Branch) Reservoir	Henry County Water and Sewerage Authority	
40 Ocmulgee Reservoir	Henry County Water and Sewerage Authority	39
41 Tussahaw Creek Reservoir	Henry County Water and Sewerage Authority	
42 Brown Branch	City of Locust Grove	0.34
43 Big Haynes Creek	Rockdale County	22.1
Ocmulgee River Basin Total		125.09
Oconee River Basin		
44 North Oconee River / Cedar Creek	City of Gainesville Public Utilities	9
Tallapoosa River Basin		
45 Little Tallapoosa River (Lake Fashion / Cowan Lake)	City of Villa Rica	2.25
Totals		
Metro Water District Total	Monthly Average	1,368.41
	Annual Average	1,140.34

Notes:

- Alternate intake if additional supplies are unavailable from Lake Lanier
- The Bear Creek Reservoir serves as a supplemental supply to the Dog River Reservoir.
- Cartersville's permit for Etowah River is included within it's Allatoona Lake permit.
- The specific location of the reservoir has not been identified, but is likely to be near the Fulton County service area.
- Water released to Etowah River—included in Canton / Cobb County Marietta Water Authority withdrawals
- Water pumped to fill Shoal Creek reservoir
- Water pumped to fill Lake Horton reservoir
- Clayton County Water Authority will increase capacity at one of its three facilities to 79 PD-MGD (59.3 MGD on a monthly average basis) by 2035. This table shows capacities evenly split.
- White Oak Creek and Line Creek withdrawals fill JT Haynes Reservoir.
- Annual average day equals monthly average divided by 1.2.

Source: MNGWPD Water Supply and Water Conservation Management Plan (May 2009)

In addition to the existing reservoirs, there are three reservoirs planned for the Metro Water District in the near future that require 404 permits. These planned reservoirs are far enough along in the permitting process that State and Federal permits are being sought for these projects. Three additional reservoirs are in early planning stages but anticipated to be constructed in the next 25 years. Figure 3 includes all six planned reservoirs.

Figure 3: Planned Reservoirs

Reservoir (Note 1)	Owner/Operator Utilizing Resource	Basin	Estimated Size and Yield
Glades Reservoir	Hall County	Chattahoochee	The 733-acre reservoir with an estimated yield of 6.4 MGD will release water to Lake Lanier. Currently in the permitting process.
Bear Creek Reservoir	Proposed South Fulton Water Authority (Note 2)	Chattahoochee	Impoundment on Bear Creek, a tributary of the Chattahoochee River. The permitting process has been initiated with an estimated yield of 15 MGD.
Richland Creek Reservoir	Paulding County	Coosa	A 305-acre reservoir with an estimated yield of 35 MGD is in the permitting process on Richland Creek.
Etowah Reservoir	Fulton County	Coosa	A reservoir is being considered by Fulton County with a proposed 30 MGD yield.
Ocmulgee Reservoir	Henry County Water and Sewer Authority	Ocmulgee	A new reservoir is being considered in the Ocmulgee basin with a proposed 13 MGD yield.
Cedar Creek Reservoir	Gainesville-Hall County	Oconee	The Cedar Creek reservoir is expected to have a yield of 9 MGD and be supplemented with water from the North Oconee River.

Notes:

1. Reservoirs that do not require 404 permits, off-line reservoirs, and reservoirs whose primary purpose is to facilitate water treatment plant operations are not included herein.
2. The service provider for the Bear Creek Reservoir should be resolved through negotiation process or other means before a permit is issued to resolve conflicts with existing service areas.

Source: MINGWPD Water Supply and Water Conservation Management Plan (May 2009)

Wastewater Management

Existing wastewater conditions in the Metro Water District are characterized by the use of large publicly owned treatment facilities covered by Georgia EPD's permitting process, smaller systems including land application systems and decentralized systems, and the use of septic systems in less densely populated areas. As the region has grown, increased demand for wastewater treatment has been met by first seeking permit increases, building or expanding treatment facilities, and relying on septic systems in areas not yet served by sewer.

The Metro Water District has 303 wastewater treatment facilities based on facilities in operation at the end of 2006. Of these, there are 92 publicly owned facilities with a total capacity of 660 million gallons per day (MGD) and 211 private facilities (land application systems or decentralized systems). The majority (91%) of publicly owned treatment facilities have advanced levels of treatment. Of the 211 privately owned wastewater facilities located in the Metro Water District, 30 are owned by public school systems, 98 are owned by industries, and the remaining 83 are owned by campgrounds, mobile home parks, and residential developments. Approximately one-fifth of residential wastewater and one-tenth of all wastewater generated in the Metro Water District is currently treated by septic systems. Figure 4 provides details on existing water treatment plants in the Metro District planning area.

Figure 4: Existing Surface Water Treatment Plants

County	WTP	Entity	Source Stream/ Reservoir	2006 WTP Permitted Capacity (PD-MGD) (Note 1)
Bartow	Lewis Spring WTP	City of Adairsville	Lewis Spring (Note 2)	4
	Clarence B. Walker WTP	City of Cartersville	Allatoona Lake	27
	Emerson WTP	City of Emerson	Moss Spring (Note 2)	0.5
	Bartow County WTP	Bartow County	Bolivar Springs	0.8
Cherokee	Canton WTP	City of Canton	Etowah River	5.45
	Etowah River WTP	Cherokee County Water and Sewerage Authority	Yellow Creek Reservoir and Etowah River	38
Clayton	Terry R. Hicks WTP	Clayton County Water Authority	Blalock Reservoir	10
	W.J. Hooper WTP		W.J. Hooper Reservoir	20
	J.W. Smith WTP		J.W. Smith Reservoir	12
Cobb	James E. Quarles WTP	Cobb County-Marietta Water Authority	Chattahoochee River	86
	Hugh A. Wyckoff WTP		Allatoona Lake	72
Coweta	B.T. Brown WTP	Coweta County	Cedar Creek (B.T. Brown) Reservoir	7.7
	Hershall Norred WTP	City of Newnan	J.T. Haynes Reservoir	14
	Senoia WTP	City of Senoia	Hutchins' Lake	0.45

County	WTP	Entity	Source Stream/ Reservoir	2006 WTP Permitted Capacity (PD-MGD) (Note 1)
DeKalb	Scott Candler WTP	DeKalb County	Chattahoochee River	128
Douglas	Bear Creek WTP	Douglasville-Douglas County Water and Sewer Authority	Bear Creek Reservoir	16.36
			Dog River Reservoir	
	Franklin Smith WTP	City of Villa Rica	Lake Fashion, Cowan Lake	1.5
Fayette	Crosstown WTP	Fayette County	Lake Horton, Lake Kedron, Lake Peachtree, groundwater	13.5
	South Fayette WTP			6.2
	Fayetteville WTP	City of Fayetteville	Whitewater Creek	3
Forsyth	Cumming WTP	City of Cumming	Lake Lanier	24
	Forsyth County WTP	Forsyth County	Lake Lanier	13.9
Fulton	Atlanta-Fulton County WTP	Atlanta-Fulton County Water Resources Comm.	Chattahoochee River	90
	Hemphill WTP	City of Atlanta	Chattahoochee River	136.5
	Chattahoochee WTP			64.9
	Roswell Cecil Wood WTP	City of Roswell	Big Creek	1.2
	East Point WTP	City of East Point	Sweetwater Creek	13.9
	Palmetto WTP	City of Palmetto	Cedar Creek	0.6
Gwinnett	Lake Lanier WTP	Gwinnett County Public Utilities	Lake Lanier	150
	Shoal Creek WTP			75
	Buford WTP	City of Buford	Lake Lanier	2
Hall	Lakeside WTP	City of Gainesville	Lake Lanier	10
	Riverside WTP			25
Henry	Towaliga River WTP	Henry County Water and Sewerage Authority	S. Howell Gardner (Indian Creek) and Rowland Reservoirs	24
	Tussahaw WTP		Tussahaw Creek Reservoir	13
	McDonough WTP	City of McDonough	John Fargason (Walnut Creek) Reservoir	2.28
	Locust Grove WTP	City of Locust Grove	Brown Branch	0.45
Rockdale	Big Haynes Creek WTP	Rockdale County	Big Haynes Creek (Randy Poynter Lake)	22.1
Total Metro Water District Treatment Capacity (PD-MGD)				1135.29
Total Metro Water District Treatment Capacity (AAD-MGD)				709.56

Notes:

1. WTP capacity is on a permitted peak day basis.
2. Lewis and Moss Springs are groundwater under the influence of surface water and therefore classified as a surface water WTP.
3. Annual average day equals monthly average day divided by 1.6.

Source: MNGWPD Water Supply and Water Conservation Management Plan, May 2009

The increase in population and economic activity over the next 20 – 30 years is forecasted to produce 993 million gallons per day of wastewater that will need to be managed during a maximum month in 2035. This forecast does not include flows from septic systems or decentralized systems. To provide the treatment capacity required to meet this forecasted flow, localities within the District will primarily rely on the expansion of existing facilities. Expansion is considered a cost-effective approach but may prove problematic in watersheds with assimilative capacity limitations.

A total of 48 existing facilities are scheduled for expansion, 19 new facilities will be constructed, 20 existing facilities will continue to operate at their current capacity, and 24 facilities will be retired. This schedule will result in a total of 87 wastewater treatment plants either in operation, or under construction, in the Metro Water District by 2035. These plants are detailed in Figure 5. Figure 6, which follows Figure 5, highlights new treatment plants.

Figure 5: Wastewater Treatment Plants Planned to be Operation in 2035

Location by County	Wastewater Treatment Plant	Planned Permitting Capacity (MMF-MGD)	Receiving Water Body	Basin
Bartow	Adairsville North WPCP	4	Oothkalooga Creek	Coosa
	Adairsville South WPCP	1	Oothkalooga Creek	Coosa
	Cartersville WPCP	24	Etowah River	Coosa
	Bartow Southeast WPCP	8.1	Etowah River	Coosa
	Emerson Pond WPCP	1.5	Pumpkinvine Creek Tributary	Coosa
	West Bartow WPCP (Note 1)	4	Etowah River	Coosa
County Total		42.6		
Cherokee	Canton WPCP (Note 2)	8	Etowah River	Coosa
	CCWSA Fitzgerald Creek WPCP (Note 2)	11.75	Little River	Coosa
	CCWSA Rose Creek WPCP (Note 2)	15	Lake Allatoona	Coosa
	Woodstock WPCP (Note 2)	2.5	Rubes Creek	Coosa
	CCWSA Northeast WPCP (Notes 1,2)	8	Etowah River	Coosa
	Cherokee Northwest WPCP (CCWSA/Canton) (Notes 1,2)	8	Etowah River	Coosa
County Total		53.25		
Clayton	Clayton WB Casey WRF	30	Huie LAS/Wetlands to Blalock Reservoir	Ocmulgee
	Clayton Northeast WRF	10	Panther Creek	Ocmulgee
	Clayton Shoal Creek LAS/WRF	4.4	LAS/Wetlands to Shoal Creek Reservoir	Flint
County Total		44.4		
Cobb	Cobb Noonday Creek WRF (Note 2)	20	Noonday Creek	Coosa
	Cobb Northwest Cobb WRF (Note 2)	12	Lake Allatoona	Coosa
	Cobb RL Sutton WRF	60	Chattahoochee River	Chattahoochee
	Cobb South Cobb WRF	50	Chattahoochee River	Chattahoochee
County Total		142		
Coweta	Newnan Wahoo Creek WPCP	6	Wahoo Creek/LAS	Chattahoochee
	Newnan Mineral Springs WPCP	4	Mineral Springs Branch/LAS	Chattahoochee
	Coweta Sargent WPCP	1	Wahoo Creek	Chattahoochee
	Coweta Arnco WPCP	1	Wahoo Creek	Chattahoochee

Location by County	Wastewater Treatment Plant	Planned Permitting Capacity (MMF-MGD)	Receiving Water Body	Basin
	Coweta Shenandoah WPCP	2	White Oak Creek	Flint
	Grantville Colley Street LAS (Note 1)		LAS	Flint
	Grantville Ponds		Yellow Jacket & New Mountain Creeks	Chattahoochee
	Grantville New River WPCP (Note 1)		New River	Chattahoochee
	Grantville Yellow Jacket Creek WPCP (Note 1)	0.78	Yellow Jacket Creek	Chattahoochee
	Senoia LAS	1	LAS	Flint
	Sharpsburg WPCP (Note 1)	7.5	Line Creek	Flint
	Senoia Southeast WPCP (Note 1)			Flint
	Newnan Utilities Decentralized Systems (Note 1)	7.75		
	Coweta private systems (Note 1)	2.5		
	Coweta Bridgeport WPCP	1.2	White Oak Creek Tributary	Flint
County Total		34.73		
DeKalb	DeKalb Polebridge WPCP	39	South River	Ocmulgee
	DeKalb Snapfinger WPCP	54	South River	Ocmulgee
County Total		93		
Douglas	DDCWSA South Central WPCP (Note 1)	12	Chattahoochee River	Chattahoochee
	DDCWSA South Central UWRF	0.5	Chattahoochee River/LAS	Chattahoochee
	DDCWSA Northside WPCP	2	Gothards Creek	Chattahoochee
	DDCWSA Sweetwater Creek WPCP	6	Chattahoochee River	Chattahoochee
	Villa Rica North WPCP	0.84	Towne Branch	Chattahoochee
	Villa Rica West WPCP	6.5	Little Tallapoosa Creek	Tallapoosa
County Total		27.84		
Fayette	Fayetteville Whitewater Creek WPCP		Whitewater Creek	Flint
	Peachtree City Rockaway WPCP		Line Creek Tributary	Flint
	Peachtree City Line Creek WPCP	22	Line Creek	Flint
County Total		22		
Forsyth	Cumming Bethelview Road WPCP	8	Big Creek	Chattahoochee
	Forsyth Windemere Urban Reuse LAS (Note 2)	0.55	LAS	Chattahoochee
	Forsyth Shakerag/Fowler WRF	24	Chattahoochee River	Chattahoochee
	Forsyth Manor Water Reuse Facility (Note 2)	0.5	LAS	Coosa
	Forsyth Dick Creek WRF	0.76	Dick Creek	Chattahoochee
	Cumming Lake Lanier WRF (Notes 1,2)	15	Lake Lanier	Chattahoochee
	Forsyth Lake Lanier WRF (Notes 1,2)	10	Lake Lanier	Chattahoochee
County Total		58.81		
Fulton	Fulton Johns Creek WRF	20	Chattahoochee River	Chattahoochee
	Fulton Big Creek WRF	38	Chattahoochee River	Chattahoochee
	Fairburn LAS	1	LAS	Flint
	Fulton Cauley Creek Reuse (Note 2)	5	Cauley Creek	Chattahoochee
	Fulton Tech. Park/Johns Creek WRF	0.2	Chattahoochee River	Chattahoochee
	Fulton Little River WRF	2.6	Little River	Coosa
	Fulton Settingdown Cr Golf Course Reuse (Note 2)	0.2	Reuse	Coosa

Location by County	Wastewater Treatment Plant	Planned Permitting Capacity (MMF-MGD)	Receiving Water Body	Basin
	Fulton Camp Creek WRF	24	Chattahoochee River	Chattahoochee
	Atlanta RM Clayton WRC	122	Chattahoochee River	Chattahoochee
	Atlanta Utoy Creek WRC	44	Chattahoochee River	Chattahoochee
	Atlanta South River WRC	54	Chattahoochee River	Chattahoochee
	Union City WWTP (Note 1)	2.5	Deep Creek	Chattahoochee
County Total		313.5		
Gwinnett	Gwinnett F. Wayne Hill WRC (Note 2)	85	Lake Lanier	Chattahoochee
			Chattahoochee River	Chattahoochee
	Gwinnett Crooked Creek WRC	25	Chattahoochee River	Chattahoochee
	Gwinnett Yellow River WRF	22	Yellow River	Ocmulgee
	Buford Southside WPCP	4.5	Little Suwannee Creek	Chattahoochee
County Total		136.5		
Hall	Gainesville Flat Creek WRF (Note 2)	18	Flat Creek	Chattahoochee
	Gainesville Linwood WRF (Note 2)	14	Lake Lanier	Chattahoochee
	Flowery Branch WPCP (Note 2)	9	Lake Lanier	Chattahoochee
	Spout Springs facility (Note 2)	7	Lake Lanier	Chattahoochee
		4	LAS	Chattahoochee
	Hall County (Notes 1, 2)	6	TBD	Chattahoochee
Lula WPCP (Note 1)	1.8	Lula Branch tributary	Chattahoochee	
County Total		59.8		
Henry	Henry Bear Creek WRF/LAS	1.25	Bear Creek/LAS	Flint
	Henry Indian Creek LAS	7	LAS	Ocmulgee
	Henry Walnut Creek WRF (Note 1)	27	Walnut Creek	Ocmulgee
	Hampton WPCP	1.75	Bear Creek	Flint
	Locust Grove Indian Creek WPCP	3	Indian Creek	Ocmulgee
	McDonough Walnut Creek WPCP	4	Walnut Creek Tributary	Ocmulgee
	Stockbridge WPCP	2.25	Brush Creek	Ocmulgee
	Henry Leguin Mill WPCP (Note 1)	9.6		Ocmulgee
County Total		55.85		
Paulding	Paulding Pumpkinvine Creek WRF	30	Pumpkinvine Creek	Coosa
	Paulding Coppermine WRF	6.5	LAS	Chattahoochee
	Paulding Upper Sweetwater WRF	2.5	Sweetwater Creek	Chattahoochee
	Paulding West/Airport WRF (Note 1)	1.5	Pumpkinvine Creek	Coosa
County Total		40.5		
Rockdale	Rockdale Quigg Branch WRF	9	Yellow River	Ocmulgee
	Rockdale South River WRF (Note 1)	5	South River	Ocmulgee
County Total		14		
District Total		1,139		

Notes:

1. New or planned facilities
2. Facility is considered a reuse facility, which includes non-potable reuse, planned indirect potable reuse, or incidental indirect potable reuse.

Source: Metropolitan North Georgia Water Planning District Wastewater Management Plan, May 2009

Figure 6: New Wastewater Treatment Plants Constructed by 2035

Utility	Facility Name (Note 1)	2035 Capacity
Bartow County	West Bartow WPCP	4
Cherokee Co WSA	CCWSA Northeast WPCP *	8
CCWSA/Canton	Cherokee Northwest WPCP *	8
Newnan	Newnan Utilities Decentralized Systems *	7.75
Sharpsburg	Sharpsburg WPCP	7.5
Senoia	Senoia Southeast WPCP	
Grantville	Grantville Yellow Jacket Creek WPCP *	0.78
Grantville	Grantville New River WPCP *	
Coweta County	Coweta private systems (deeded to WSA) *	2.50
Coweta County	Coweta Bridgeport WPCP *	1.2
Cumming	Cumming Lake Lanier WRF	15
Forsyth	Forsyth Lake Lanier WRF	10
Union City	Union City WWTP *	2.5
Fairburn	Fairburn LAS	1
Hall County	Hall County WWTF	6
Lula	Lula WPCP *	1.8
Henry Co.	Henry Leguin Mill WPCP	9.6
Paulding Co.	Paulding West/Airport WRF	1.5
Rockdale	Rockdale New South River WRF	5

Notes:

* facilities planned for service prior to the next MNGWPD plan update

1. New facilities slated to be constructed and decommissioned by 2035 are not included.

Source: Metropolitan North Georgia Water Planning District Wastewater Management Plan, May 2009

Watershed Management

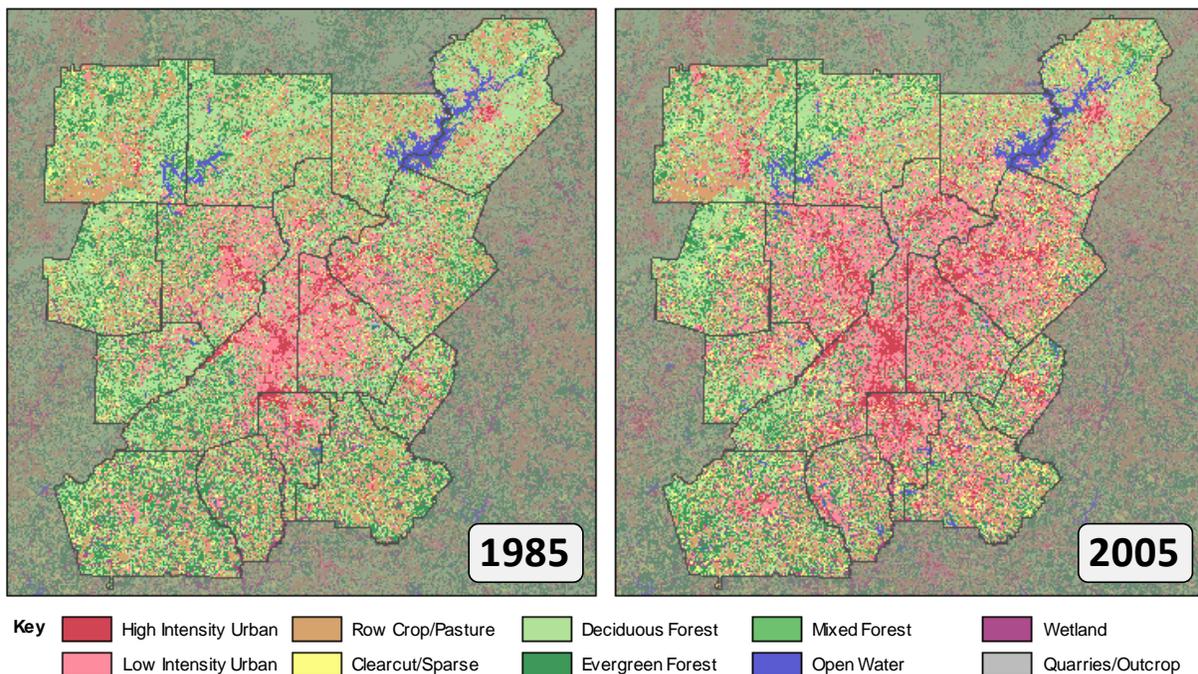
The protection of source water (drinking water supply) watersheds is vitally important to the region, as almost all of the Metro Water District's public drinking water supply comes from surface water sources, which includes streams, rivers and man-made reservoirs. Water quality degradation of these surface waters can potentially pose human health threats, and often increases water treatment costs for local communities.

Changes in watershed hydrology from land use changes can have significant impacts on stream conditions including (Figure 7 illustrates the magnitude of land cover change in the region):

- Changes in Stream Flow – Increased runoff volumes, increased peak discharges, greater runoff velocities, increased flooding, and lower dry weather stream flows.
- Changes in Stream Geometry – Stream erosion (widening and down-cutting), loss of riparian tree cover, sedimentation in the channel, and increased flood elevations.
- Degradation of Aquatic Habitat – Degradation of habitat structure, reduced stream base flows, increased temperatures, and reduced abundance and diversity of aquatic biota.
- Water Quality Impacts – Reduced dissolved oxygen and increases in suspended solids, nutrients (phosphorus and nitrogen compounds), hydrocarbons (oils and grease), organic contaminants, heavy metals, toxic chemicals, trash & debris, and microbial contamination (bacteria, viruses and other pathogens).

See Figure 8 on the following page for details on land cover changes.

Figure 7: Land Cover in the Metro Water District Region (1985 & 2005)



Source: University of Georgia Natural Resources Spatial Analysis Laboratory

Figure 8: Land Cover Changes 1985 - 2005

Land Cover Type	1985 Data		2005 Data		Change 1985-2005	
	Acres	% of Total	Acres	% of Total	Acres	Change
High Intensity Urban	89,652	2.8	216,472	6.9	126,820	141.5%
Low Intensity Urban	448,265	14.2	802,182	25.4	353,917	79.0%
Row Crop/Pasture	547,450	17.3	398,140	12.6	-149,310	-27.3%
Clearcut/Sparse	157,644	5.0	218,310	6.9	60,666	38.5%
Deciduous Forest	1,064,922	33.7	784,213	24.8	-280,709	-26.4%
Evergreen Forest	599,989	19.0	495,574	15.7	-104,415	-17.4%
Mixed Forest	85,891	2.7	60,992	1.9	-24,899	-29.0%
Open Water	58,973	1.9	85,271	2.7	26,298	44.6%
Wetland	101,070	3.2	90,136	2.9	-10,934	-10.8%
Quarries/Outcrop/Other	5,966	0.2	8,532	0.3	2,566	43.0%
TOTAL	3,159,822	100.0	3,159,822	100.0		

Source: University of Georgia Natural Resources Spatial Analysis Laboratory

River Basin Profiles

The Watershed Management Plan of the Metro Water District profiled each of the six basins within the District. Each basin has conditions now and expected conditions in the future that will impact water resources and influence management decisions.

Chattahoochee River Basin

The Chattahoochee River basin supplies drinking water and serves as the primary receiving water for treated wastewater effluent for over 3 million people in the Metro Water District. The Chattahoochee River has its headwaters in the Blue Ridge Mountains northeast of the Metro Water District. The basin occupies a relatively narrow corridor through the center of the Metro Water District, averaging about 40 miles wide, starting in the northeast corner and extending to the southwest corner of the region. Issues for this have been divided into three sub-basins (Lake Lanier, Upper Metro Chattahoochee, and Lower Metro Chattahoochee:

Lake Lanier

- Many of the tributaries to Lake Lanier are impaired and have TMDLs, primarily for fecal coliform bacteria and biota.
- Recreation is a multi-billion dollar industry for the communities surrounding the Lake and is impacted by impaired water quality and operations affecting Lake levels.
- Increasing use of decentralized wastewater systems (e.g. septic tanks) presents long-term maintenance challenges.

- Increasing development in the area upstream of the Metro Water District in Dawson, Habersham, and White Counties will further affect water quality in the Lake.

Upper Metro Chattahoochee Sub-Basin

- Upper Metro Chattahoochee River is the largest source of drinking water supplies for the Metro
- Water District, accounting for 56-percent of the Metro Water District's permitted water supply.
- The Chattahoochee River in this sub-basin does not meet State water quality standards for fecal coliform bacteria and biota. There are also Fish Consumption Guidelines as a result of legacy PCBs.
- The Chattahoochee River National Recreation Area serves as an important recreation destination for the region. Recreational activities are dramatically impacted by impaired water quality.
- Much of the development in this corridor occurred prior to improved stormwater management practices. Inadequate controls have led to increased runoff.
- Several areas in this sub-basin are prone to sanitary sewer overflows.

Lower Chattahoochee Sub-Basin

- The Chattahoochee River and several of its tributaries do not meet State water quality standards for fecal coliform bacteria, biota, and temperature.
- Much of the sub-basin is anticipated to experience high growth in the next two decades.
- Algae blooms have been identified in West Point Lake downstream of the Metro Water District, indicating high nutrient contributions.

Coosa River Basin

The Coosa River basin is a major water supply source for the Metro Water District, and includes Allatoona Lake which is the second largest reservoir in the Metro Water District. The basin is rapidly developing, but is also home to a number of protected species which are a major focus of habitat protection. The Coosa basin within the Metro Water District covers about 1,322 square miles, including all of Bartow County, most of Cherokee County, and portions of Forsyth, Fulton, Cobb, and Paulding Counties.

- Paulding, Forsyth, and Cherokee Counties are consistently noted as among the fastest growing counties in the United States.
- The Coosa basin is an important water source for Bartow, Cobb, Cherokee and Paulding Counties, therefore protection of source water supply watersheds is critical.
- Allatoona Lake currently exceeds State standards for chlorophyll-a. Nonpoint source runoff has been identified as the primary source of nutrient loadings associated with chlorophyll-a exceedences.
- The Coosa basin has great diversity of aquatic species, a number of which are on the Federal threatened and endangered species list.

Flint River Basin

The Metro Water District sits at the headwaters of the Flint River, which is a key water supply source for communities in the southern portions of the Metro Water District. The Flint basin is also known for abundant wetlands and is home to several endemic fish species. The Flint River originates near the Atlanta Hartsfield-Jackson International Airport and flows south through Clayton County. All of Fayette County is within the Flint basin as well as portions of Clayton, Coweta, Fulton, and Henry Counties. The Flint River eventually flows to the Gulf of Mexico after its confluence with the Chattahoochee River in south Georgia.

- The headwaters of the Flint basin are highly impervious due to the presence of the Hartsfield-Jackson Atlanta International Airport and associated land uses.
- Most of the Flint basin located within the Metro Water District consists of small drinking water supply watersheds.
- The Flint River and several tributaries currently exceed the State water quality standards for fecal coliform bacteria. Whitewater Creek does not meet State standard for biota and Flat Creek and White Oak Creek do not meet State standards for dissolved oxygen.
- Many of the new development areas in the Flint basin are slated for septic systems, therefore the proper maintenance and management of septic systems will be critically important for protecting watershed health.

Ocmulgee River Basin

Within the Metro Water District, several communities use the Ocmulgee basin for drinking water supplies, particularly in the south metro area, and wastewater discharge. Directly downstream of the Metro Water District is Jackson Lake, a Georgia Power lake that is used for recreation and power production. The Ocmulgee River basin covers most of the southeast Metro Water District and includes portions Clayton, DeKalb, Fulton, Gwinnett and Henry Counties and all of Rockdale County. A small portion of the City of Atlanta is also located in the basin.

- Of the 457 miles of streams monitored in the Metro Water District portion of the Ocmulgee basin, 385 miles did not meet State water quality standards based on the 2008 303(d) list.
- Several small drinking water supply watersheds are located in the Ocmulgee basin.
- Downstream of the Metro Water District, the Ocmulgee basin drains to Lake Jackson, which is showing signs of eutrophication due to nutrient loads.
- Sanitary sewer overflows in older portions of the sanitary sewer collection system in Fulton, DeKalb, and Rockdale Counties contribute to fecal coliform bacteria levels in the basin.

Oconee River Basin

The Oconee basin is comprised entirely of headwater streams within the Metro Water District. While traditionally rural, many communities within the basin are currently experiencing growth and new development. The Oconee River headwaters originate in Gwinnett and Hall Counties and encompass about 208 square miles along the eastern edge of the Metro Water District. In

the last decade, the Oconee basin has experienced a steady change in land use with undeveloped land transitioning predominantly to residential. However, the Oconee basin overall currently has the least intensive land use in the Metro Water District with 62 percent of land in forested and agricultural land uses.

- Land use is shifting from forested and agricultural land use to residential and supporting commercial land use.
- Much of the growth in the Oconee basin is anticipated for septic systems, potentially creating long-term management challenges.

Tallapoosa River Basin

A small piece of the Metro Water District includes the headwaters of the Tallapoosa River, which is part of the larger Alabama-Coosa-Tallapoosa (ACT) system. The southwestern corner of Paulding County in the Metro Water District lies within the Tallapoosa River basin, which encompasses about 40 square miles of the Metro Water District. Portions of the City of Villa Rica, which extends outside of the 15-county region, are also located in the Tallapoosa basin. The Tallapoosa basin is also home to several endemic fish species, including the Tallapoosa Shiner.

- Most of the growth in the Tallapoosa basin within the District is anticipated to be on septic systems.
- There are two small drinking water supply watersheds in the District portion of the basin and a planned reservoir downstream that require protection.
- There are threatened and endangered aquatic species of concern in the Tallapoosa basin that require protection.