Section 6: PLANNED WASTEWATER TREATMENT FACILITIES

One aspect of the Wastewater Management Plan is a vision of wastewater treatment infrastructure that will be in place in 2035. The infrastructure plan presents a long-term overview of where treatment facilities will be located and an estimate of their capacity. Because the treatment facilities are owned and operated by local wastewater providers, they will refine this Plan as time unfolds, optimizing it, and adding innovation. A list of action items needed to implement the infrastructure plan is included in this Section and is consistent with Appendix B, County-level Summaries.

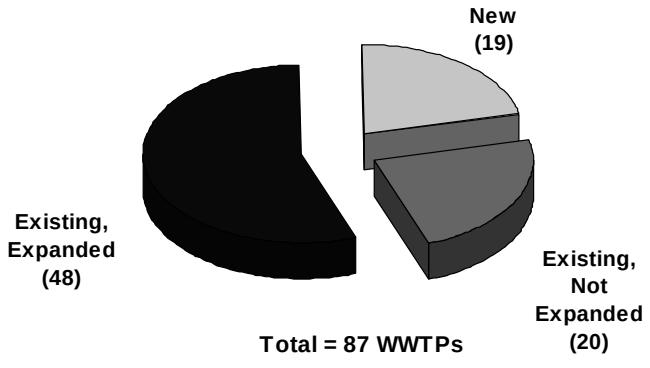
INFRASTRUCTURE PLAN

The Plan envisions that over the next 30 years the infrastructure for wastewater collection and treatment will change the most in the outlying counties of the Metro Water District. Within the urbanized counties, infrastructure efforts will primarily focus on collections system maintenance and rehabilitation.

The changes in facilities over the planning horizon have been subdivided into new, existing and expanded, existing and not expanded, and decommissioned. Figure 6-1 shows the percentages for each category. It is important to note that these percentages are by facility and not by treatment capacity. Specific projects are listed by county in Appendix B of this report.

Expansion of existing facilities will be the primary source of additional treatment capacity in the Metro Water District. Expansion is considered a cost-effective approach but may prove problematic in watersheds with assimilative capacity limitations. The facilities scheduled to be decommissioned are mostly smaller with less efficient treatment technologies or decentralized systems that were deeded to the local wastewater provider. The new facilities are primarily located in the growing counties on the perimeter of the Metro Water District. The number of proposed wastewater treatment facilities is shown in Figure 6-1.

FIGURE 6-1
2035 Wastewater Infrastructure



The wastewater treatment facilities shown in Table 6-1 are a summary of the facilities outlined in Appendix B of this Plan. The future facilities were determined based on the wastewater flow forecasts outlined in Section 3 and the planning considerations outlined in Section 5 of this Plan.

TABLE 6-1
Wastewater Treatment Plants Planned to be in 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
	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)			Flint
	Senoia Southeast WPCP (Note 1)	7.5	Line Creek	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**		

Location by County	Wastewater Treatment Plant	Planned Permitting Capacity (MMF-MGD)	Receiving Water Body	Basin
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
	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**		

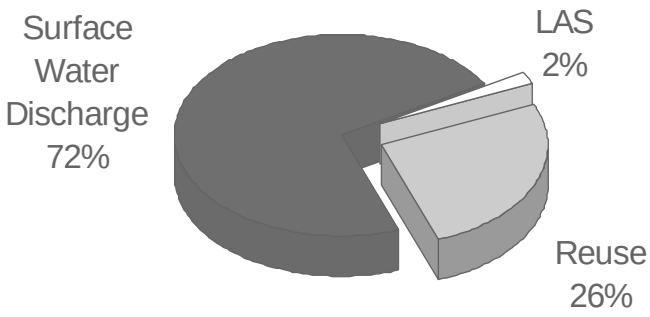
Location by County	Wastewater Treatment Plant	Planned Permitting Capacity (MMF-MGD)	Receiving Water Body	Basin
Hall	Gainesville Flat Creek WRF (Note 2)	18	Flat Creek	Chattahoochee
	Gainesville Linwood WRF (Note 2)	14	Lake Lanier	Chattahoochee
	Flowery Branch WPCP (Note 2)	9	Lake Lanier	Chattahoochee
	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.

WASTEWATER TREATMENT

Figure 6-2 shows the breakout for different discharge locations for publicly-owned wastewater facilities in 2035 as a percentage of total treatment volume. Surface water discharges are preferable in the Metro Water District as they provide high quality effluent to local waterbodies so that it is available for downstream uses and users. As shown in Figure 6-2, surface water discharges are the primary discharge location for 2035. Indirect potable reuse (planned and incidental) is a form of surface water discharge that is growing in popularity as a method of providing reliable drinking water supplies.

FIGURE 6-2
2035 Wastewater Discharge Locations



Land application systems (LAS) use treated wastewater to irrigate grassed or forested areas. Additional treatment benefits are provided through nutrient uptake by vegetation, however, water is not efficiently returned to local waterbodies for contemporary uses and users.

The reuse percentage includes both non-potable reuse and indirect potable reuse planned by 2035. Non-potable reuse systems treat wastewater and then reuse this water to replace a potable demand. Typically, non-potable reuse water is used for irrigation or industrial water uses. Indirect potable reuse (planned and incidental) return flows upstream of drinking water supplies. While 26% of the wastewater treated, or 208 AAD-MGD, will be reuse water (planned or incidental), reuse water represents 21% of the forecasted total water withdrawn of 1,011 AAD-MGD in the 2035 timeframe. Georgia EPD provided the Metro Water District with planning guidance to reuse 10% of the water withdrawn for either potable or non-potable purposes. The Metro Water District plan meets this District-wide planning guidance. Based on projected demands, projected flows and planned wastewater treatment facility capacities, the Metro Water District anticipates exceeding the 10% reuse goal.

Facilities that will reuse water to account for this percentage include:

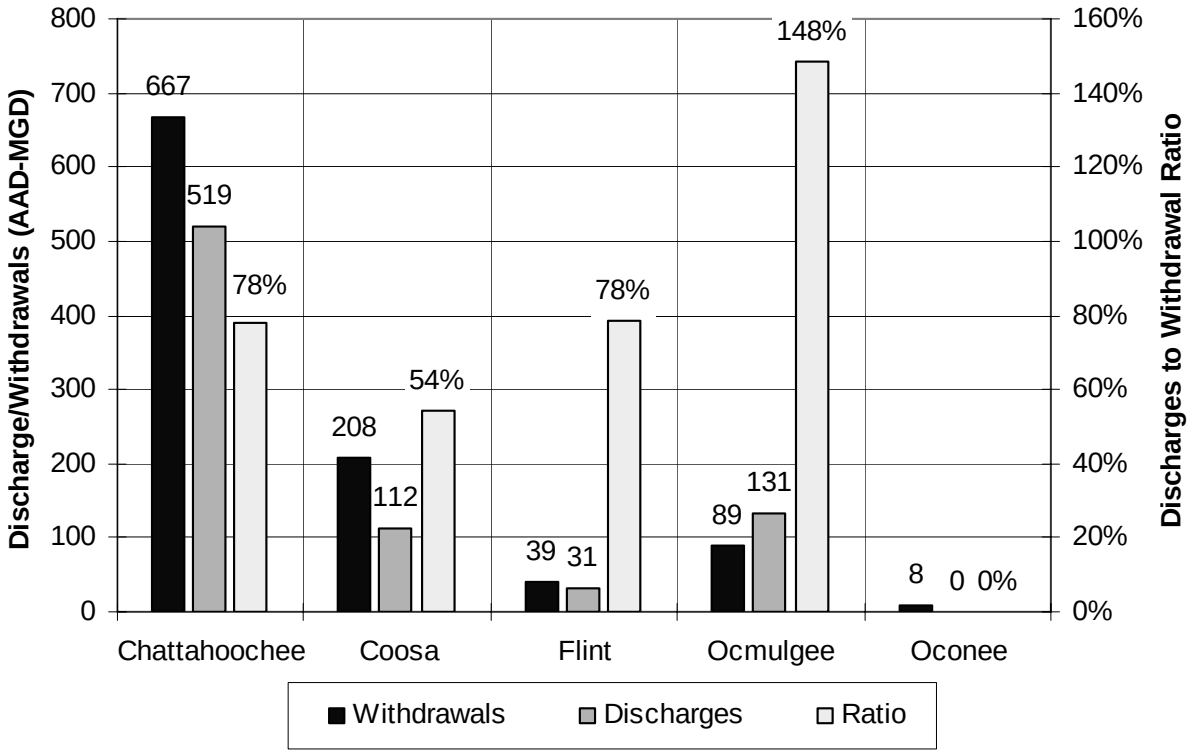
- Canton WPCP
- Cherokee County Water and Sewer Authority Rose Creek Reuse Facility
- Cherokee County Water and Sewer Authority Fitzgerald WPCP
- Cherokee County Water and Sewer Authority Northeast WPCP
- Cherokee County Water and Sewer Authority Northwest WPCP
- Clayton County Water Authority W.B. Casey WRF
- Clayton County Water Authority Shoal Creek WRF
- Cobb Noonday Creek WRF
- Cobb Northwest Cobb WRF
- Cumming Lake Lanier WRF
- Flowery Branch WRC
- Forsyth Lake Lanier WRF
- Forsyth Shakerag/Fowler WRF
- Forsyth Windemere Urban Reuse LAS
- Forsyth Manor Water Reuse Facility
- Fulton Cauley Creek Reuse
- Fulton Settingdown Creek Golf Course Reuse
- Fulton Technology Park/Johns Creek WRF
- Gainesville Flat Creek WRF
- Gainesville Linwood WRF
- Gwinnett F. Wayne Hill WRC

- Hall County WRF
- Spout Springs Facility
- Woodstock WPCP

The Water Supply and Water Conservation Management Plan considers the return of flows to existing sources outlined in this Wastewater Management Plan as a critical component of meeting future water supply demands as well as the needs of downstream communities.

Planning guidance provided by Georgia EPD included a District-wide target of 58% returns to the Chattahoochee River. The Chattahoochee basin extends downstream of the Metro Water District and returning flows to the basin will provide them the benefit of this resource. Analysis of return flows were computed for year 2035 by normalizing water and wastewater treatment facility capacities to an average day basis and then comparing water withdrawn in each basin to that discharged. Note that the sum of the water withdrawn is 1,011 AAD-MGD, or the total forecasted water demand in 2035. The sum of the discharges is the forecasted annual average 2035 flow projection, 794 AAD-MGD. Figure 6-3 shows that the Metro Water District will meet the return target for the Chattahoochee basin in 2035. It is important to note that this guidance is for the Chattahoochee basin within the Metro Water District and not a target for each individual local water and wastewater provider.

FIGURE 6-3
Withdrawals and Discharges for 2035



WASTEWATER TREATMENT STANDARDS

The Wastewater Management Plan proposes that watershed-based standards be used for discharges from WWTPs. Protective standards would be determined by the Georgia EPD for each river, as is the current policy. WWTPs on heavily used rivers, such as the Chattahoochee River, would be faced with more restrictive discharge standards than WWTPs on rivers that receive less discharge. This approach is considered reasonable, because it protects water quality without requiring a higher level of treatment than is necessary.

Higher levels of treatment at the WWTPs will undoubtedly be required during the next 30 years. Some of the reasons include:

- **TMDLs** – As the causes of impairments to surface water uses are resolved, more restrictive discharge limits may be imposed on some WWTPs. These will be specific to the cause of the impairment, such as excessive nutrients or inadequate dissolved oxygen. Most of the TMDL challenges in the Metro Water District are related to nonpoint source pollution that will be mitigated by the management measures in the Watershed Management Plan.
- **In-stream nutrient standards** – The Georgia EPD is developing standards, as required by EPA, to establish allowable concentrations of nutrients, nitrogen and phosphorus, in streams. When these standards are determined, nutrients in the flow discharged by WWTPs may need to be reduced below today's values. Both Lakes Lanier and Allatoona have limits on the discharge of phosphorus from WWTPs; therefore, higher levels of treatment are anticipated in the future to support planned facilities.
- **Indirect potable reuse standards** – During the latter half of the planning period, indirect potable reuse will be relied upon to a greater degree. It is anticipated that it will eventually become appropriate for the Georgia EPD to develop standards for this practice. One part of these standards will define treatment levels for producing reclaimed water.
- **Managing increasing volumes of wastewater** – Growth in the Metro Water District will lead to increasing volumes of wastewater for treatment and discharge. As the volume of discharges increases, the level of treatment must increase correspondingly, to provide the same level of protection for surface water quality.

Recognizing that treatment standards will become increasingly more stringent, it was determined that treatment technologies available today (those that achieve the Metro Chattahoochee WWTP Limits) have the capability to likely keep WWTP discharge loads at or below today's levels, for all but a few watersheds. In these watersheds, additional nonpoint source protection from the Watershed Management Plan optional local management measures or removal of other point source loads may be required to meet water quality standards. While this Plan was designed to protect water quality, determining specific treatment limits that will protect water quality for each discharge is a responsibility of Georgia EPD.

ACTION ITEM 6.1 – CONSTRUCT 19 NEW WASTEWATER TREATMENT PLANTS

Ten new wastewater treatment plants will be needed prior to the next Plan update in Cherokee, Coweta, Fulton, Hall and Henry Counties. The local wastewater providers need to undertake pre-planning and land acquisition on an expedited basis if these activities have not already been completed. Planning for an additional nine new wastewater plants needs to be undertaken in Bartow, Coweta, Forsyth, Fulton, Hall, Paulding and Rockdale Counties to meet needs after 2010. Planned new wastewater treatment plants are listed in Table 6-2.

TABLE 6-2
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 plan update
1. New facilities slated to be constructed and decommissioned by 2035 are not included.

ACTION ITEM 6.2 – EXPAND 48 EXISTING WASTEWATER TREATMENT PLANTS TO MEET CAPACITY NEEDS

Forty-eight existing wastewater treatment facilities will require capacity expansions before 2035. Some of these projects are already underway by the local wastewater providers, and these efforts need to continue. Programmed capital improvements are presented in Appendix B. Appendix B will be supported by additional level of detail in local wastewater master plans. Treatment processes will be upgraded with the expansions, as required by regulations to protect surface water quality. The non-capital tasks associated with this action include financing, inter-jurisdictional agreements (where necessary), and state permitting.

ACTION ITEM 6.3 – UPGRADE WASTEWATER TREATMENT PLANTS TO PROTECT WATER QUALITY

Over the next 30 years, most wastewater treatment plants in the Metro Water District will need to upgrade levels of treatment. Reasons for upgrading facilities include:

- Maintaining wasteloads while handling more wastewater flow
- Meeting potential new treatment standards for indirect potable reuse
- Increasing the removal of compounds to allow facility expansions while meeting forthcoming wasteload allocations from Total Maximum Daily Load (TMDL) assessments
- Increasing the removal of nutrients to comply with forthcoming regulations on nutrients in surface streams

As the need for wastewater treatment upgrades will be based on the individual treatment plants, upgrade projects cannot be assigned a specific schedule in this Wastewater Management Plan, but will be outlined in the local wastewater master plan (Action Item 9.1).

The water resources in the Metro Water District vary widely in quantity and quality; therefore, using a single set of treatment limits for all plants is not recommended. Treatment limits will be developed individually for each watershed based on assimilative capacity, to protect the local water resources.

ACTION ITEM 6.4 – RETIRE 24 EXISTING WASTEWATER TREATMENT FACILITIES

As treatment requirements become more stringent, several of the smaller facilities will be decommissioned with flows being sent to new or existing facilities. Several of the facilities that will be decommissioned in the 2035 planning horizon are decentralized systems that were deeded to the local wastewater provider and cannot be cost effectively upgraded or expanded. This includes one new facility that is planned to be decommissioned in the 2035 timeframe.

ACTION ITEM 6.5 – ENHANCE RELIABILITY OF WASTEWATER TREATMENT PLANTS AND PUMPING STATIONS

Reliable wastewater treatment and pumping systems are important in the Metro Water District for a number of reasons. First, many areas of the Metro Water District are in the headwaters of basins, where there is limited assimilative capacity and where system failures could affect many downstream users. Second, some wastewater systems in the Metro Water District are located upstream from drinking water intakes, where failures must be avoided. Third, more return flows are expected in the future to support the water resources needs of the Metro Water District and downstream, for indirect potable reuse.

The reliability of wastewater treatment plants and pumping stations will be addressed in local wastewater master plans to maintain compliance with regulatory requirements. Treatment and pumping facilities should have a firm capacity such that the expected peak flow can be treated or pumped to its desired destination. Firm pumping capacity is defined as total maximum treatment or pumping capacity with the largest equipment or process unit out of service. Additionally, a dedicated emergency or secondary power supply should be provided that is suitable for meeting total maximum treatment or pumping capacity needs with the primary power supply out of service. For those facilities upstream from drinking water intakes or recreational waters, even more demanding requirements are anticipated. These reliability measures for facilities upstream of drinking water intakes could include mechanical redundancy, multiple-barrier treatment processes, and off-line storage.

ACTION ITEM 6.6 – RECLAIM WATER FOR LAKE LANIER AND LAKE ALLATOONA

Water withdrawals from Lake Lanier and Lake Allatoona account for 34% of the total water supply for the Metro Water District in 2035. Given the significance of these water resources, it is in the best interest of the Metro Water District to sustain these Lakes with the return of reclaimed water. The returns to Lakes Lanier and Allatoona must balance water quality issues and protect all of the uses of these waterbodies. The majority of the planned reuse in the Metro Water District is planned indirect potable reuse to Lakes Lanier and Allatoona.

The cities and counties that withdraw water from Lake Lanier or Allatoona for drinking water supply should, where practicable, return reclaimed water to these Lakes, ensuring the long-term sustainability of the resource.