

## Section 4: WASTEWATER MANAGEMENT ISSUES

One layer of the wastewater management planning process is determining where and when treatment capacity should be in place, and where and how treated water should be returned. The needed location and timing for future sewer services are determined by using population and employment growth forecasts. Resource constraints and public expectations form yet another layer of issues to be considered in the planning process. This Section of the report presents special Metro Water District-related issues.

### WATER RESOURCE CONSIDERATIONS

#### RELIANCE ON SURFACE WATERS FOR MULTIPLE USES

Water resource issues in the Metro Water District are driven by the geography of the region dominated by headwater streams and reservoirs. These surface waters are used for drinking water, recreation, fisheries, and are the discharge points for most wastewater treatment plants within the Metro Water District. Downstream of the Metro Water District, other jurisdictions rely upon these same streams to meet similar needs. The waters of the Chattahoochee, Flint, Tallapoosa and Coosa Basins are also shared by other states.

#### LIMITED ASSIMILATIVE CAPACITY VS. NEED FOR RETURN

Assimilative capacity determines how much treated wastewater can be discharged to a specific waterbody without exceeding water quality standards or impacting aquatic life. In certain areas of the Metro Water District, assimilative capacity is limited as a result of nonpoint source pollution resulting in TMDLs. In some instances, the lack of assimilative capacity has triggered the use of land application systems and growth on septic systems, which are more consumptive uses than surface water discharges. This approach is not sustainable across the Metro Water District, given the future wastewater quantities to be managed and the need to return flows to streams for other uses.

Given the limitation of assimilative capacity of local waterbodies and the potential impact of nonpoint source pollution, higher levels of wastewater treatment will be required in the future in addition to implementation of the Metro Water District's Watershed Management Plan. It is a goal of the Wastewater Management Plan to return highly treated wastewater to surface waterbodies.

#### CONSUMPTIVE USE

An important consideration for the Metro Water District is the effect of consumptive use. Consumptive use, as defined in the Georgia Comprehensive State-wide Water Management Plan, is the difference between the total amount of water withdrawn from a defined hydrologic system of surface water or groundwater and the total amount of the withdrawn water that is returned to that same hydrologic system over a specified period of time. Water use is consumptive when water is removed from a

## Section 4: WASTEWATER MANAGEMENT ISSUES

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specified hydrologic system of surface water or groundwater and is not returned to that same system within a time frame that allows contemporary users and uses to avail themselves of the benefits of that quantity of water. The Georgia Comprehensive State-wide Water Management Plan specifically identifies the following as water uses that contribute to consumptive use:

- **Water Reuse (non-potable)** – is the use of reclaimed water as a substitute for another generally higher quality water source. Reclaimed water can be reused for the beneficial irrigation of areas that may be accessible to the public (such as golf courses, residential and commercial landscaping, parks, athletic fields, roadway medians, and landscapes) and for other beneficial uses such as human uses, cooling towers, concrete mixing, and car washes.
- **On-Site Sewage Management Systems** – is a sewage management system other than a public or community sewage treatment system that serves one or more buildings, mobile homes, recreational vehicles, residences, or other facilities designed or used for human occupancy or congregation, and which is permitted by a local county board of health under rules promulgated by the Department of Human Resources. Such term shall include, without limitation, conventional and chamber systems, privies, and experimental and alternative on-site sewage management systems that are designed to be physically incapable of a surface discharge of effluent that may be approved by the Department of Human Resources.
- **Land Application Systems** – is a method of disposing of pollutants in which the pollutants are applied to the surface or beneath the surface of a parcel of land and which results in the pollutants percolating, infiltrating, or being absorbed into the soil and then into the waters of the state. (source for this definition is the Georgia Department of Natural Resources General Land Application System Permit for Large Communities)
- **Interbasin Transfers** – is a withdrawal or diversion of water from one river basin, followed by use and/or return of some or all of that water to a second river basin. The river basin from which the withdrawal or diversion occurs is termed the ‘donor’ basin, and the river basin to which all or a portion of the water is diverted and returned is termed the ‘receiving’ basin.

The Georgia Comprehensive State-wide Water Management Plan recognizes that each of the above water management practices can be appropriate, viable measures; however, managing the consumptive uses of water is necessary to meet water demands in a sustainable manner. This Plan states that managing consumptive use of a water source involves the integrated management of demands from that source, returns to that source, and actions taken to supplement the supply that source provides.

Consumptive use is an important consideration for the Metro Water District for maintaining local stream flows and water supplies. A goal of the Metro Water District’s plans is to minimize consumptive uses to the extent possible, while also balancing other goals and considerations. This Wastewater Management Plan focuses on the consumptive losses from onsite-sewage management systems and land application systems with a long-term goal of returning water where practicable, so that it is available for instream and offstream uses and users. The Water Supply and Water Conservation Management Plan, looks at the management of consumptive use as a demand management strategy.

The Metro Water District was provided planning guidance by Georgia EPD to return 58% (annual average) of the water withdrawn from the Chattahoochee River basin (basin wide goal). In the future, Georgia EPD may modify the existing planning guidance for the Chattahoochee basin and/or identify return targets for other basins through the Comprehensive State-wide Water Management Plan. In order to manage consumptive use, local governments should consider the implications of local land use

## Section 4: WASTEWATER MANAGEMENT ISSUES

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planning, specifically the role of septic systems in future growth. If a local government chooses to develop on septic systems they might have to consider other ways to reduce water demands and increase wastewater returns such as more intensive water supply system leak detection, conversion of LAS to treated direct discharges, or banning outdoor irrigation.

### TMDLS AND NONPOINT SOURCE POLLUTION

A total maximum daily load (TMDL) is the calculation of the maximum amount of a specific pollutant a waterbody can receive and still meet water quality standards. The TMDLs identify potential sources of the impairment and allocate the allowable wasteloads among the sources. The equation used to develop a TMDL adds together the wasteload from point sources plus the nonpoint sources and factors in a margin of safety.

Nonpoint source pollution is the major cause of water quality impairment in the Metro Water District, and addressing these impairments will rely most heavily on the measures recommended in the Metro Water District's Watershed Management Plan. Many of the management measures in the Watershed Management Plan support the protection and improvement of impaired waterbodies. Specifically, the TMDL management measure encourages local governments to develop a sampling program for waterbodies that do not meet State water quality standards and participate in regional development of TMDL implementation plans. The success of the nonpoint source control strategies may influence future wastewater treatment requirements.

### Nutrient Standards for Lakes

Nutrient levels are an ongoing concern, with Lakes Lanier and Allatoona exceeding the chlorophyll a standard on the 2008 Georgia EPD 303(d) list of impaired waters. Chlorophyll a is a green pigment found in plants and an indicator of excessive nutrient concentrations (phosphorus and nitrogen) in lakes. The TMDLs written for lakes in Georgia identify many different potential pollutant sources that impact the water quality including: urban runoff, animal waste, lawn fertilizer, and sewage spills. To protect lake water quality, Georgia EPD has established standards for phosphorus and nitrogen for the major lakes in Georgia. In the near future Georgia EPD may be adding phosphorous limits to wastewater discharge permits that currently do not have phosphorous limits.

**Lake Lanier** – The currently defined load for phosphorus into Lake Lanier from point sources is 36,900 pounds per year (lbs/yr). As the amount of reclaimed wastewater discharged to the Lake increases, the concentration of phosphorus in the flow must be decreased to maintain this mass limit.

**West Point Lake** – The standard defined load for the Chattahoochee River entering West Point Lake is 1,400,000 lbs/yr of phosphorus. This load is shared by point and nonpoint sources.

**Lake Allatoona** – Phosphorus loads for point sources of 16,200 lbs/yr have been allocated to each of four jurisdictions (Bartow and Cobb Counties, the City of Canton, and the Cherokee County Water and Sewerage Authority) within the headwaters of Lake Allatoona.

**Lake Jackson** – The phosphorus loadings established for the major tributaries into Lake Jackson are very restrictive. Georgia EPD has recently reduced the allowable total phosphorus effluent concentration from discharges in the Ocmulgee Basin above Lake Jackson from 0.3 to 0.15 mg/L to protect the health of the Lake.

## Section 4: WASTEWATER MANAGEMENT ISSUES

---

TMDLs are currently being developed by Georgia EPD for both Lake Lanier and Lake Allatoona. The Lake Allatoona TMDL will be released in 2009 and will address the entire Lake. The Lake Lanier TMDL is targeted for completion in 2009. The TMDL problems in Georgia are generally nonpoint source related, however limits on allowable phosphorus loads in pounds from wastewater discharges to both Lakes will require higher future treatment levels to allow for continued growth, as forecasted in this Plan. If nonpoint source controls are effective at reducing nutrient loads, the current restrictions on point sources may be modified in the future. The 2008 Watershed Management Plan in combination with higher levels of wastewater treatment is anticipated to meet water quality standards in local receiving streams.

### UPPER CHATTAHOOCHEE TROUT FISHERY AND RECREATION USE

The secondary trout fishery supported by the unnaturally cold waters released from Buford Dam is unique to the Chattahoochee River. The secondary trout waters designation extends from Buford Dam to the I-285 West Bridge. Data collected by the Georgia Department of Natural Resources (Georgia DNR) Wildlife Resources Division revealed that there have been instances of trout reproduction in the section immediately below Buford Dam. This section of the river also includes the Chattahoochee River National Recreation Area, which is heavily used for boating and recreation. The trout and recreation uses of this section of the river pose special considerations for wastewater returns.

### STREAM TEMPERATURES

Current regulations limit temperature increases in streams to 2°F in secondary trout waters and to 5°F in other streams. Several streams are designated as secondary trout waters in the Metro Water District. In addition to the Chattahoochee River downstream from Buford Dam to the I-285 West Bridge, they include small streams in Bartow, Cherokee, and Paulding Counties.

The temperature of the water in the Upper Chattahoochee River is unusually cold, because the releases from Buford Dam are taken from the cold water in the lower depths of Lake Lanier. Discharges from WWTPs into this reach of the river can cause the temperature standard to be exceeded under a certain combination of circumstances. This raises the question as to what standard will protect the trout, especially in unnatural settings, such as the unusually cold water in the Chattahoochee River. This question is being considered by the Georgia EPD at this time. One possible outcome is that the Georgia EPD could develop a different temperature standard in the Chattahoochee River that will protect the trout and be amenable to the discharges from wastewater treatment facilities. The reclassification study, currently in progress, is not expected to be released by Georgia EPD until 2010.

### PROXIMITY OF DISCHARGES TO WATER SUPPLY INTAKES

Greater quantities of flow will be discharged from wastewater treatment plants in the future to the same streams and lakes that supply our drinking water. Greater quantities of water will also be withdrawn in the future for drinking water, often in proximity to the discharge locations. This places greater need for highly reliable treatment facilities, real-time flow and water quality monitoring, and communications protocol. As indirect potable reuse becomes a more common practice to address water supply needs in the Metro Water District, the importance of high quality effluent becomes even more critical. For this reason, future planning may encourage indirect potable reuse within a local provider's own service area and upstream of the local provider's own water supply intake.

### EFFICIENT AND EFFECTIVE INFRASTRUCTURE

The biggest pressure on infrastructure management will be from the increased volume of wastewater associated with the growth projected for the region over the next 30 years. This growth provides an opportunity to modify the present infrastructure to make it more efficient and reliable. As the less urbanized counties develop their infrastructure, they can benefit from the lessons learned by the more urbanized counties in the Metro Water District.

### HIGHER LEVELS OF TREATMENT AND PLANT PERFORMANCE

The need to treat a growing volume of wastewater within the Metro Water District, placed against the background of highly constrained water resources conditions, will require high levels of treatment and treatment plant reliability. Advanced treatment technologies will be needed to produce reuse-quality effluent across the Metro Water District. Treatment plants and related infrastructure will need to be designed and operated at a high level of reliability, to assure the public that system failures are extremely unlikely. Some of the factors driving the need for improved treatment levels in the future will be the increase in:

- Non-potable reuse for irrigation and the potential for casual human contact
- Indirect potable reuse and the potential for contaminants of concern in water supplies

Technologies such as membrane filtration and advanced oxidation systems using a combination of ultraviolet radiation and hydrogen peroxide or ozone may be evaluated to meet these higher treatment demands. Additional and improved instrumentation and control systems at existing treatment facilities can increase the level of process reliability and accuracy.

### INCREASED BIOLOGICAL LOADING

A recent trend at a number of wastewater treatment facilities throughout the Metro Water District is the increase in influent concentrations of biological loading (i.e. biochemical oxygen demand, volatile suspended solids, ammonia, etc.) which has impacted treatment performance and limited treatment capacity at some facilities. This increased biological loading is a direct result of the following:

- Water conservation efforts and low flow fixtures required by the State Plumbing Code have reduced water consumption, effectively increasing the concentration of the waste stream
- Collection system improvements to reduce inflow and infiltration sources have reduced the dilution of wastewater streams
- Changing residential sewer use habits such as increased use of garbage disposals in newer homes
- Potential illicit discharges to the collection system from illegal septage disposal to system manholes
- Commercial/industrial discharges that exceed industrial pretreatment program requirements
- Septage pumped from local septic systems

The original design treatment characteristics for most existing treatment facilities was based on much lower historical values for biological loading than the recent trend. Some local wastewater providers in the Metro Water District have already upgraded and expanded their facilities to accommodate this

## Section 4: WASTEWATER MANAGEMENT ISSUES

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change in biological loading and many other local wastewater providers are reassessing their treatment capacities on both a biological and flow basis to determine if and when improvements are needed.

### NUMBER OF PRIVATE FACILITIES

There are 303 wastewater treatment facilities in operation today within the 15-county Metro Water District. Of these, approximately 211 are privately owned and 92 facilities are publicly owned. Of the 211 private 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. Although the privately-owned facilities individually treat a very small volume of wastewater, the growing number is a special concern for the Metro Water District. Two-thirds of the publicly owned facilities treat very small volumes of wastewater at various levels of performance and reliability. Most of these facilities treat less than 1 MGD. Although the total volume of wastewater treated at private wastewater systems is unknown, it is estimated that private systems treat less than 10% of the total volume of wastewater produced in the Metro Water District.

Issues that can arise with smaller private (vs. larger publicly owned) treatment facilities include:

- Higher unit costs to upgrade treatment levels
- Less reliable performance because operators are often less skilled and staffing is not typically around the clock
- Lower ability to process sudden changes in influent flow or loadings
- Greater manpower to monitor and regulate a larger number of facilities required by the Georgia EPD
- Absenteeism of private owners who are difficult to locate in case of problem performance

With proper planning, regulation and observation, however, these potential drawbacks can be overcome. It is desirable to eliminate and consolidate small facilities that are not effectively and efficiently operated. A limited number of properly designed, staffed and operated private facilities, however, provide an effective wastewater treatment alternative in many areas, especially as a phased approach to establishing or expanding sewer service.

Many of the small private systems are either land application or non-potable reuse connected to golf course irrigation. The recent release of the Georgia EPD General Land Application System (LAS) Permit streamlines the procedures for design and permitting of smaller LAS systems. These systems, as defined in the Comprehensive State-wide Water Management Plan, do not promote returns to local waterbodies for the contemporary user and are therefore considered more consumptive use than discharges.

### SEPTIC SYSTEMS

The majority of the Metro Water District's population is served by sewer but there are some areas that are not sewerred. The residents and businesses within the unsewerred areas meet their wastewater management needs by means of septic systems (also called on-site sewage management systems) or private decentralized wastewater systems. Septic systems that are properly sited, designed, and maintained can prove to be a long-term, cost-effective and environmentally sound method for wastewater management. Another issue associated with septic systems is that they do not return flow

## Section 4: WASTEWATER MANAGEMENT ISSUES

---

directly to a surface water body; and therefore, are considered more consumptive than centralized systems with surface water discharges.

Some jurisdictions in the Metro Water District installed a large number of septic systems to sustain growth, but have discovered that these areas need to be connected to the public wastewater collection system, because the septic systems are not functioning well as the permanent wastewater management solution. Connecting these homes to the public wastewater collection system is proving highly disruptive and extremely costly in these neighborhoods.

Some local governments are working together with their local County Board of Health to gather information on the septic systems in their area. Resolving issues with septic systems entails a more comprehensive and proactive management approach. Section 8 of this Plan contains recommendations for managing septic systems in critical areas.

### WASTEWATER COLLECTION SYSTEMS

The wastewater collection systems within the Metro Water District play a critical role in protecting human health and the environment. Sustaining this role requires proper planning, design, construction, operation, and maintenance. While some jurisdictions have progressive and proactive programs, some communities still struggle with funding and staffing routine inspection and maintenance of the sewer systems. Although sanitary sewer overflows (SSOs) occur even in very well-maintained systems, the goal is to minimize their occurrence through proactive inspections and maintenance.

Inflow and Infiltration (I/I), or the introduction of groundwater and stormwater into the collection system, stresses the capacity of pipes, pump stations, and treatment facilities. This I/I can reduce the available capacity of collection and treatment facilities. I/I is typically attributed to aging or poorly constructed collection systems. In an effort to reclaim some capacity in the collection and treatment systems many of the Metro Water District local wastewater providers implement collection system programs to replace and rehabilitate pipelines and manholes thereby reducing I/I in their system.

Vegetative root growth in wastewater collection systems is a common cause of I/I. Typical root growth into collection systems is at pipe joints and connections to pipes but is also seen in manholes where there are gaps along the risers or table. Roots are drawn to and thrive in the moist, nutrient rich environment inside of sanitary sewers. This root growth causes blockage of the sewers and can result in SSOs or reduced capacity. Several local wastewater providers in the Metro Water District have root control programs using chemical/herbicide application or through sewer cleaning and root cutting. Where root intrusion is severe or allows for significant infiltration the rehabilitation or replacement of the sewer is common.

Fats, oils, and grease (FOG) are typical by-products of food service establishments and can cause buildup and blockages in the wastewater collection system. FOG challenges can be addressed through public education and enforcement activities to prevent illicit disposal into collection systems. Grease traps at food service establishments, grocery stores, schools and other facilities limit the contribution of FOG into the system if they are properly designed, built, and maintained with regularly scheduled pump outs. Even with a strong education and enforcement program, the entrance of FOG into the collection system is to be expected and should be mitigated through regular sewer inspection and cleaning.

Infill development and re-development activities in the urban areas of the Metro Water District have strained collection system capacity as low-density land is replaced with higher density land uses.

## Section 4: WASTEWATER MANAGEMENT ISSUES

---

Additional flows from denser development combined with aging sewers susceptible to I/I can strain system capacity in many portions of the Metro Water District. Capacity certification programs for redevelopment or infill development projects can reduce strain on the collections system. Based on these evaluations sewer systems can then be rehabilitated, increased in size, or install additional collection facilities to provide for the future development needs. Often the cost of these capacity evaluations and subsequent system improvements are fully or partially borne by the development.

### RESIDUALS TREATMENT AND DISPOSAL

Transport and disposal of wastewater biosolids residuals (i.e. septic and sludge solids) is becoming more expensive for Metro Water District wastewater providers. The number of landfills that accept biosolids residuals is shrinking, resulting in concern that future regulatory or waste industry issues will result in the inability to dispose of residuals. High fuel costs make it cost prohibitive for local wastewater providers to transport biosolids residuals to other areas for disposal.

Enhanced treatment to achieve a minimum of EPA Class B biosolids is provided at the majority of wastewater treatment facilities within the Metro Water District. Several facilities can achieve Class A biosolids through advanced biological treatment or composting and other advanced solids treatment process. Wastewater facilities should consider residuals treatment as a component of comprehensive facilities planning. Disposal of biosolids residuals is expected to become a bigger issue in the future as more stringent nutrient limits require treatment processes that generate greater quantities of waste. This is especially true where phosphorus limits are lower than 0.5 mg/L.

### COMBINED SEWER SYSTEMS

The City of Atlanta has made significant progress towards addressing the combined sewer system, with progress still ongoing. The CSO facilities serving the eastern area of the City now receive advanced treatment in a single advanced combined sewage treatment facility. The City has constructed a second advanced combined sewage treatment plant that will serve the West Area combined sewers. Three major combined sewer areas of the City are undergoing full sewer separation to eliminate the combined sewers. Discharges to water bodies have been consolidated to two locations on larger water bodies and full sedimentation, filtration and disinfection will be provided before discharge. These improvements are expected to reduce total solids from these flows as much as 60 percent, with significant oxygen demand reductions. Future requirements from EPA may lead to turbidity limits and other constraints on combined sewage facilities, which will further control discharges from these points.

### WATER REUSE NEEDS

With limited future water supplies available within the Metro Water District, maximizing the region's water resources is a strong focus of this Plan. While the Comprehensive State-wide Water Management Plan encourages the return of flows to local waterways, reuse can sustain existing water supplies and is an appropriate tool in some communities.

### INDIRECT POTABLE REUSE TO MEET WATER SUPPLY NEEDS

Indirect potable reuse of highly treated wastewater is a critical component of the Metro Water District's water supply plans through 2035 and beyond. This is because the demand for water supply will exceed the region's available supplies sometime after this date. One of the few ways the Metro Water District can sustain its supply is to recycle water through indirect potable reuse. Indirect potable reuse is the use

## Section 4: WASTEWATER MANAGEMENT ISSUES

---

of advanced treatment technologies to reclaim water and return it to a surface waterbody, such as a lake, so that the reclaimed water is used for water supply. While the region has been using indirect potable reuse in an incidental way for many years, communities in the Metro Water District are beginning to use indirect potable reuse very intentionally as a supplemental water supply source. The practice of indirect potable reuse is expected to increase as a way to enhance and extend the use of water resources in the Metro Water District in the future.

### NON-POTABLE REUSE

The practice of non-potable reuse to offset potable water demand is encouraged by the Wastewater Management Plan. The Metro Water District's goal of minimizing consumptive uses includes minimizing outdoor irrigation. Regardless of the source of the water, outdoor irrigation is considered consumptive and should be minimized. The Metro Water District discourages non-potable reuse for outdoor irrigation unless it offsets a demand that is or would be met with potable water supply, surface water or ground water sources.

Non-potable reuse can be costly due to the distribution systems that are required to convey the reclaimed water to the end user. Non-potable reuse must meet existing return targets in the Chattahoochee basin and any return targets established through the Comprehensive State-wide Water Management Plan.

The option of sending reuse water to power plant cooling towers for use in lieu of stream water was investigated. This concept will not work at this time based on the following findings. This concept provides no net decrease in pollutant loading or consumption. Basically, a power plant cooling tower system provides no treatment benefit with respect to removal of pollutants, other than heat, with reuse or source water. Because the thermodynamic heat transfer mechanism for these systems is evaporation, any existing pollutants in cooling water are returned at a higher end-of-pipe concentration without any reduction in pollutant mass loading or evaporative consumption.

### OTHER PLANNING CONSIDERATIONS

Wastewater management is taking on a new role, as local wastewater providers across the Metro Water District place more emphasis on stewardship of water resources. Reclaiming water and returning it to its source basin has received heightened importance. Concerns are growing throughout the state regarding the depletion of water resources through interbasin transfers and consumptive losses, as highlighted in the Comprehensive State-wide Water Management Plan. The Metro Water District's Wastewater Management Plan provides the widest scale look that has ever been assembled of water stewardship in the metropolitan north Georgia region.

### BASIN CONSIDERATIONS

The Wastewater Management Plan is integrated with the Water Supply and Water Conservation Management Plan and the Watershed Management Plan to balance the water protection strategies in each of the major basins within the Metro Water District. Returning reclaimed water to its source is an important criterion for the Wastewater Management Plan because it supports and sustains water resources for human and ecological needs. The overall Metro Water District approach focuses on measures that local governments can apply to achieve basin-wide protection of water resources.

### CLIMATE CHANGE IMPACTS

Significant uncertainties are associated with future climate scenarios, and require that water management strategies in the Metro Water District be flexible and adaptive. Many programs are already in place to address future resource and system uncertainties. Various federal agencies are currently reviewing their programs for potential adjustments needed to respond to climate change. As more information is developed about climate change impacts, the Metro Water District Plans will be critically reviewed and updated to prepare for the future.

Due to the uncertainties associated with climate change the impacts and planning for such are fairly broad and difficult to define. With conflicting climate change scenarios, the potential exists to experience extended periods of both dry and wet weather. These periods of extreme weather conditions can result in lower assimilative stream capacities during dry periods and problems with I/I that limit collection and treatment facility capacities during wet weather periods. Economic and regulatory impacts of climate change may result in the limitation of gases released from treatment facilities and increased efficiencies of processes and equipment to reduce power consumption.

Planning for climate changes issues can be incorporated into many other efforts already underway throughout the Metro Water District. Planning activities already being pursued that may be used to respond to climate change impacts include:

- Emergency response planning
- Energy audits and conservation to reduce operating costs
- Improvements to collection systems to reduce I/I
- Improvements to treatment facilities to plan for future effluent quality limits
- Indirect potable reuse to augment water supplies with high quality effluent
- Alternative methods for reduction and disposal of residuals

### ENERGY EFFICIENCY AND CONSERVATION

The impact of rising energy costs on local wastewater providers is expected to play a larger role in future facility management. In the future, siting of new facilities, equipment upgrades, and maintenance decisions will need to consider both the cost and environmental impact of energy uses. Consolidation of wastewater facilities often leads to pumping of wastewater, and the additional pumping stations will require increased energy consumption. Future decisions regarding consolidation of treatment should also consider long-term energy demands in addition to treatment capabilities.

### GREY WATER

“Grey water” is defined as the waste discharged from lavatories, bathtubs, showers, clothes washers and laundry trays. It does not include wastewater from water closets, kitchen sinks, photo lab sinks, dishwashers, or any other water deemed not appropriate for grey water systems. Grey water or collected rain water may be appropriate to replace the portion of domestic water demands for industrial uses as well as residential uses, such as toilet flushing. Georgia DHR does not recommend using grey water for surface outdoor irrigation.

## Section 4: WASTEWATER MANAGEMENT ISSUES

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There are facilities that provide advanced wastewater treatment in order to create a non potable closed system for flushing of toilets or for industrial water use. It is anticipated that such devices will become more prevalent if the proposed change in the plumbing codes goes into effect. Local governments should consider developing a “model agreement” between the local wastewater provider and the department which enforces the plumbing codes to ensure proper coordination when (if) changes to the plumbing code go into effect.

### CHEMICALS OF CONCERN

Chemicals of concern is a term used to describe a wide array of chemicals and microorganisms that are suspected of posing a risk to public health through drinking water, that include pharmaceuticals and personal care products (PPCP's) and endocrine disrupting compounds (EDCs). Chemicals of concern are not presently regulated, partly because of difficulty with analytical techniques, detection limit levels and lack of baseline information on ambient concentrations.

Educating the public on proper disposal of pharmaceuticals and household chemicals will help reduce the contribution to the sanitary sewer waste stream.

In the future, if removal/reduction of these chemicals of concern becomes regulated, then it can be expected that the addition of more advanced treatment technologies will become more common in the Metro Water District.

### ENVIRONMENTAL JUSTICE

The forecasted increase in population and wastewater flows during the next 30 years will require expansion of existing treatment facilities and the construction of new wastewater treatment facilities in developing areas. All water users expect long-term plans will equitably address service needs and environmental protection across the Metro Water District. This Wastewater Management Plan recommends the placement of new wastewater facilities and discharges in proximity to the growth areas it will serve.

### STATE WATER PLAN

In 2004, the Georgia General Assembly passed the Comprehensive State-wide Water Management Planning Act to establish a set of policies to govern water management decisions. Following two years of development and public comment, the Comprehensive State-wide Water Management Plan (State Water Plan) was adopted by the Georgia General Assembly on January 18, 2008. The overall goal of the plan is to manage “water resources in a sustainable manner to support the state’s economy, to protect public health and natural systems, and to enhance the quality of life for all citizens”.

Key themes repeated throughout the State Water Plan include: management of consumptive use to ensure present and future opportunities for use of the resource; management of point and nonpoint sources on a watershed basis; and protection of waters that currently meet state standards and restoration of waters that are currently impaired. Several meetings were held with Georgia EPD throughout the planning process to provide consistency with the State Water Plan. Future action items that may affect the Wastewater Management Plan include calculations of assimilative capacity, recommendations for consumptive use and guidance for calculating return flows from septic systems and LAS.

## **Section 4: WASTEWATER MANAGEMENT ISSUES**

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Georgia EPD will establish guidelines and criteria for local plans to be implemented by the Metro Water District and the other planning councils statewide. As the state water planning process progresses, the Metro Water District will evaluate and update its water resources plans and programs as needed to stay in compliance with the State Water Plan guidelines and criteria.