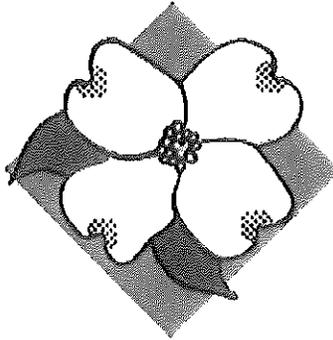


FLOWERY BRANCH
WATER RECLAMATION FACILITY
EXPANSION



ENVIRONMENTAL INFORMATION DOCUMENT

May 2020

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**CHAPTER 1
INTRODUCTION**

Background

The Flowery Branch WRF is a 1.00 mgd system located in South Hall County, approximately 3.5 miles north of the Gwinnett County line and is close to Georgia Highway 985. It is surrounded by Atlanta Highway on the east, Corps of Engineers property on the south, the Norfolk Southern Railroad on the west and a commercial-industrial area to the north. Location maps for the project are provided in Appendix 1-1.

The plant has a permit to discharge 400,000 gpd to Lake Lanier and to land apply up to 600,000 gallons on spray fields. Three of the planned four spray fields have been completed. These three fields have a combined capacity of 0.51 mgd. This capacity, combined with the 0.400 mgd discharge to Lake Lanier, totals 0.91 mgd.

In 2005, the construction of an addition to the plant was completed, consisting of a Pall membrane system and two storage tanks. For the full 1.00 mgd of capacity to be utilized, the plant would require some modifications and the additional spray field area would have to be constructed.

The Flowery Branch WRF service area is experiencing a high rate of commercial, industrial and residential growth. To accommodate this growth, it has become necessary for the City to expand its wastewater treatment capacity and the City has decided to expand its wastewater treatment capacity. Projected wastewater flows are shown in Table 1-1. These flows were derived from a land use analysis of the City and surrounding service areas, primarily considering the various proposed development projects in the area.

**Table 1-1
Projected Maximum Month Wastewater Flows**

Year	2020	2022	2024	2026	2028
Wastewater Flow (MGD)	0.85	1.13	1.27	1.46	1.61

The Flowery Branch wastewater treatment service includes not only a major part of the City, but also areas of unincorporated Hall County and the City of Oakwood. Rapid growth is occurring in all three jurisdictions. Although there are no officially recognized population projections for Flowery Branch, projections do exist for Hall County and are shown in Appendix 1-2. The projections shown in this Appendix were prepared in conjunction with the proposed Glades Reservoir project. Flowery Branch has been the most rapidly growing area of Hall County,

but the pace of development over the next few years is unknown due to the impact of the current pandemic on the economy.

On November 29, 2018, the Georgia Environmental Protection Division (EPD) issued a wasteload allocation for planning (WLA) to the City for a discharge quantity ranging from 1.00 to 2.20 million gallons per day of reclaimed water to Lake Lanier. This wasteload allocation was subsequently amended by a letters of May 31, 2019 and July 23, 2019. Copies of these letters are provided in Appendix 7.

The amendment related to the timing of the availability of the phosphorus loading to the lake. Discussions regarding the timing of the allowable discharges are still ongoing. It is our understanding that EPD intends to reissue the Flowery Branch NPDES permit to resolve the issue.

The amount of flow that can be discharged depends upon the level of phosphorous in the effluent. See Table 1-2 for the various flows and phosphorous limits. The City has chosen the option of discharging 1.80 mgd to Lake Lanier and continuing to operate the spray field for an indefinite time. The plant will ultimately be expanded to 2.2 mgd. The plant phasing approach will be discussed later in this document.

**Table 1-2
Flow and Phosphorous Limits**

Constituent/Parameter	Limit		
Monthly Average Permitted Flow (MGD)	1.0	1.5	2.2
	0.14	0.10	0.08

Environmental Inventory

The Environmental Information Document (EID) presented herein is intended to be in accordance with Chapter 391-3-6-.02, Section (3)(g) of the Georgia Rules and Regulations for Water Quality Control. It contains information for use in evaluating the effects of the proposed project. It is not intended to be a detailed environmental impact study but is to adequately cover the environmental impact of the project. The following environmental checklist summarizes the various impacts.

The checklist, shown in Table 1-3, serves as a guide in listing the environmental subjects discussed in the following sections. After comprehensive review of this document along with the relevant facts presented during the process for public input, the need for further environmental studies will be determined.

**Table 1-3
Environmental Checklist**

GEORGIA AREA/CATEGORY	IS AREA AFFECTED?			IF AFFECTED, HOW SEVERE?			
	NO	YES	UNKNOWN	MINOR	MEDIAN	MAJOR	UNKNOWN
1. Wetlands	X						
2. Flood Plain/River Corridor	X						
3. Water Resources/Water Supply/Water Quality		X		X			
4. Water Conservation		X		X			
5. Groundwater Recharge Area	X						
6. Storm Water	X						
7. Wastewater		X		X			
8. Protected Species	X						
9. Critical Habitats	X						
10. Aquatic Life/Trout Streams	X						
11. Air Quality		X		X			
12. Solid Wastes		X		X			
13. Soil Stability/Erodibility		X		X			
14. Protected Mountains	X						
15. Historical	X						
16. Archeological	X						
17. Beaches, Dunes, Shorelines and Coastal Areas	X						
18. Forest Land	X						
19. Parks/Recreation	X						
20. Farm Land	X						
21. Site Safety		X		X			
22. Noise		X		X			
23. Energy Use/ Energy Supplies		X		X			
28. Impacts		X		X			

No Action Alternative Analysis

The only alternative to plant expansion is "No Action". The proposed WRF expansion by the city is critical to the economic growth of the surrounding region. As wastewater collection system infrastructure expands with the increasing residential, commercial and industrial growth, it is necessary that the wastewater treatment needs are met.

Without the plant expansion, most of the new development in the area in and near the city would be on septic tanks. Much of the wastewater treated by septic tanks would then be lost to the Chattahoochee River system by evapotranspiration and would not be available for downstream uses. In addition, many septic tanks eventually fail and create environmental problems.

CHAPTER 2 ENVIRONMENTAL INVENTORY

This chapter will discuss the environmental impact of this project. The responses to Georgia's Department of Natural Resources Environmental Check List are provided below:

SECTION 2-1 WETLANDS

Will the action occur in a "wetlands" area? The definition of wetlands is included in the Federal Regulations, 33 CFR 32.93. The Department of Natural Resources (DNR) Rules for Environmental Planning, Chapter 391-3-16-.03, incorporate the federal definition as well as both acceptable and unacceptable uses of wetlands. Under current federal law and state policy, alterations or degradations of wetlands should be avoided unless it can be demonstrated that there will be no long-term impacts of net loss of wetlands. A Federal Permit is required for most wetland activities.

Additional Supporting Information: *Indicate who concluded whether or not wetlands are located on the project site and what qualifies them to make this conclusion. Provide a qualifications sheet for the evaluator. Provide a United States Geological Survey (USGS) map of the project site indicating the hydrologic features and surrounding area. Access the USGS National Wetlands Inventory website to determine whether jurisdictional wetlands are present on the site. If applicable, obtain a jurisdictional determination from the Army Corps of Engineers in writing, or discuss the need to obtain a determination.*

Under current Federal Regulation, all wetland areas shall be excluded from use unless it can be demonstrated that there will be no long-term adverse impacts or net loss of wetlands. A wetlands map from the National Wetlands Inventory is shown in Appendix 2-1. Per the map, there are wetlands on two sides of the project site, but they will not be impacted in any way.

The project site is very limited and is on an upland area primarily surrounded by the existing WRF. The area where the primary construction will be done was formerly occupied by portions of a wastewater treatment facility. This facility, an anaerobic digester, was abandoned more than twenty years ago.

The photographs in the Appendix 2-15b dealing with historic preservation clearly show the upland site and the abandoned former treatment plant components. These plant units have been demolished since the photographs were taken.

SECTION 2-2 FLOOD PLAIN and RIVER CORRIDOR

Will the action occur in a floodplain or a river corridor? Floodplains are designated areas of land that are flooded with water during periods of rainfall that increase the primary stream flow. Many floodplain areas are shown on Federal Floodplain Maps prepared in support of the National Flood Insurance Program.

Additional maps and information on floodplains are available from the DNR's Environmental Protection Division (EPD). Most proposed government actions that occur directly in floodplain area or which may alter the size or character of the floodplain area are considered significant. OCGA 12-2-1 indicates that lands adjacent to major rivers are protected from certain types of development.

Additional Supporting Documentation: *Provide a copy of a Federal Emergency Management Act (FEMA/FIRM) map showing the project site and area. Indicate the 100- year flood elevation of any adjacent streams and the high pool elevation of any lake or reservoir on or adjacent to the project area. Indicate the location of the project on the map. Will the project fall under the statutes of the River Protection Program Act?*

The Flowery Branch WRF is not located in areas of floodplain or river corridor, thus the proposed upgrade will not alter the site or character of these areas. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the project area is displayed in Appendix 2-2a.

The flood elevations on the plant site are primarily controlled by Buford Dam and Lake Lanier. Full pool lake elevation is 1071 MSL. Maximum storage for the standard project flood extends up to elevation 1085. The observed record high elevation for the lake is 1077.2 ft MSL. This information is shown in Appendix 2-2b and is from the Glades Reservoir Draft Environmental Impact Statement prepared by the Corps of Engineers.

Additional information regarding the water surface elevation of Lake Lanier is provided in Appendix 2-2c and is from the latest revision of the ACF Master Water Control Manual, also prepared by the Corps of Engineers. This document notes that the conservation pool elevation was increased in 1953 from 1065 to 1070. At the same time the elevation of the flood risk management pool was increased from 1080 to 1085. In February, 1976 the top of the conservation pool was raised to 1071 from May through September. There have been no further changes to the top elevations of either the conservation pool or the flood risk management pool since then.

The tops of all of the plant process facilities through secondary treatment are and will be at or above the 1085 MSL. The project will not fall under the statutes of the River Protection Program Act.

SECTION 2-3 WATER RESOURCES/WATER SUPPLY/WATER QUALITY

Will the proposed action have the potential for decreasing either the quality or quantity of water available for water supply? A water supply is a source of water that is used for drinking water in addition to other consumptive purposes. The DNR Rules, Chapter 391-3-16, contain criteria for water supply watersheds. These criteria establish a basis to allow development in a water supply

watershed without contaminating the water source to a point where it cannot be treated to meet drinking water standards.

The waters of the state include surface and groundwater that is not wholly confined to a single privately owned property. Water resources management is one of the most important issues facing Georgia now and in the future. The Georgia EPD's Rules for Surface Water Withdrawal, Chapter 391-3-6 provide the regulatory framework for withdrawal, diversion or impoundment of the surface waters of the State. The EPD's Rules for Groundwater Use, Chapter 391-3-2, establishes the regulatory procedures for withdrawing, obtaining or utilization of ground waters of the State.

Additional Supporting Documentation: Indicate the approximate location of all water supply intakes on water bodies adjacent to the project. The United States Environmental Protection Agency (EPA) in conjunction with the States has developed a method of tracking the environmental benefit of Clean Water State Revolving Loan Fund (CWSRF) projects. To maintain this information, the name of the impacted water body, its 14-digit waterbody National Hydrography Dataset (NHD) reach code or 10-digit Hydrologic Unit Code (HUC), and designated use are needed. Also needed is a description of the current state of the water body. Is the water body listed or proposed to be listed on Georgia's 305(b)/303(d) lists, does it have an existing or is it proposed to have a Total Maximum Daily Load (TMDL), or has an evaluation been completed documenting whether the proposed project improves or maintains water quality or allows the stream to be de-listed?

The additional discharge generated from the plant expansion will eventually increase the quantity of water going into Lake Lanier by an average of 1.8 mgd when the plant reaches design capacity from the currently permitted 0.40 mgd . Lake Lanier is a part of the Chattahoochee River system. The Flowery Branch water supply is obtained from wells in the Chattahoochee River basin. The discharge will generally keep the water in its basin of origin, although the groundwater basin boundaries may not correspond exactly with the surface water basin boundaries.

The NPDES Permit will require that the effluent be maintained within the limits established by Georgia Department of Natural Resources, Environmental Protection Division. There are no downstream water intakes within one mile of the proposed discharge. Significant water intakes on Lake Lanier downstream of the discharge site are owned by Gwinnett County, the City of Buford and the Lake Lanier Islands Authority. All of these are several miles downstream and are listed in Appendix 2-3a. A list of other significant downstream water intakes between Buford Dam and Peachtree Creek is also provided in Appendix 2-3a. Maps are not provided since Federal policy since 9/11/2001 has been to not make utility location information readily available to the public.

The extremely high quality of the plant effluent will not cause any adverse impact upon the quality of any of these water supplies. Therefore, the proposed action is not expected to have any adverse affect upon either quality or quantity of water available for water supply.

Expansion in the WRF will conserve waters of the State by keeping these waters within the basin of origin. Flowery Branch is growing rapidly, with some of the previous growth being served by septic tanks. Much of the water discharged into septic tanks is lost through evapotranspiration and becomes unavailable for downstream use. Future developments served by sewers and wastewater treatment plants are preferable from a water resources standpoint.

There will be temporary minor impacts on water quality from construction due to surface runoff, erosion, and sedimentation. These impacts will be minimized through installation and maintenance of erosion and sedimentation control devices. Details of these required devices will be shown in the project plans and specifications.

This segment of Lake Lanier is not listed on Georgia's 305(b)/303(d) list. Selected portions of the recently completed TMDL for phosphorus for Lake Lanier are presented in Appendix 2-3b. This information shows that the portion of Lake Lanier into which Flowery Branch discharges is currently meeting its designated use. This TMDL has recently been approved by EPA.

Hydrologic Unit Codes for the discharge are as follows; the HUC8 is 03130001, the HUC10 is 0313000108 and the HUC12 is 031300010804. There are no Wild and Scenic Rivers within five miles of the site. The nearest one is the Chattooga River on the border between Georgia and South Carolina.

SECTION 2-4 WATER CONSERVATION

Is the proposed action the most acceptable option that will enhance water conservation efforts? Senate Bill 370 (Water Stewardship Act of 2010) in conjunction with the Statewide Water Management Plan and DNR rules require that nonagricultural water users prepare and implement water conservation plans.

Additional Supporting Documentation: Describe how the project will utilize water conservation devices and fixtures within bathrooms (sink faucets and toilets), laboratory sink faucets, and utilize reclaimed or recycled wastewater within the facility grounds.

The proposed project will enhance water conservation efforts. It will return very high quality water to Lake Lanier and the Chattahoochee Basin. The water that will be used and will be returned is water that has been extracted as groundwater within the basin.

The City has adopted the required State codes regarding water conserving fixtures and has adopted a water conservation plan. The adopted water conservation ordinance is shown in Appendix 2-4.

Water conservation within the existing laboratory and control building will be addressed by replacing, where practical, existing fixtures with water conserving fixtures. Plant water for wash down and other in-plant uses will be taken from the reclaimed water process stream.

SECTION 2-5 GROUNDWATER RECHARGE AREA

Will the action result in the disturbance or altering of a groundwater recharge area? Groundwater recharge areas are those portions of the earth's surface where water infiltrates into the ground to replenish an aquifer. The Significant Recharge Areas of the state are those areas mapped by the DNR in Hydrologic Atlas 18 (1989 Edition). The DNR Rules for Environmental Planning Criteria, Chapter 391-3-16, contain specific criteria for protection of groundwater recharge areas.

Additional Supporting Documentation: *Provide a copy of the Ground Water Pollution Susceptibility Map showing the location of the proposed facility on the map.*

The most significant groundwater recharge areas in the State have been identified by the Georgia Department of Natural Resources and are shown in Appendix 2-5a. The groundwater recharge areas near Flowery Branch are shown in Appendix 2-5b. Although there are some parts of Hall County that have been identified as areas with thick soils that may be significant recharge areas, this project is not located in those areas.

The average groundwater withdrawal by Flowery Branch since the year 2000 is shown in Appendix 2-5c. Monthly withdrawal by well for the period 2013 through 2018 is shown in Appendix 2-5d. The City currently pumps approximately 230,000 gallons of groundwater daily from three wells. This amount is expected to at least double over the next ten years, but is not expected to have a significant impact on the amount of groundwater available in the area. At least one additional well is expected to be installed in the next five years.

SECTION 2-6 STORM WATER

Will the project result in increasing the amount of storm water runoff for downstream property owners? The primary concern related to storm water is the creation of impervious surfaces that contribute to an increase of the amount of storm water runoff to the point where there is damage or a threat to downstream property owners. Another very important issue is the potential contamination of Stormwater through increased contact with contaminants

Additional Supporting Documentation: Provide documentation indicating whether a Watershed Assessment and Watershed Protection Plan encompassing the project area has been approved by EPD.

The new construction will involve a small amount of excavation at the existing site and some additional paving of the roads within the site. The quantity of new impervious surfaces that will be created will be very small, since most of the soils on the existing plant site have been compacted over the many years that the existing plant has been in service. In addition, a substantial quantity of the rain that falls on the new plant units will enter open tanks where it will be treated through the plant and discharged. Therefore, the proposed project will not appreciably increase the quantity of the storm runoff that might affect downstream property owners. A stormwater Notice of Intent, if required, will be provided prior to the initiation of construction.

A Watershed Protection Plan was prepared for Flowery Branch in 2005 and was approved by EPD. The most recent annual progress report was completed in 2018. Portions of these two documents are shown in Appendix 2-6.

SECTION 2-7 WASTEWATER

Will the proposed action have a significant impact on the treatment capability of the existing wastewater treatment facilities? Does the existing wastewater treatment facility have the excess capacity to accommodate the potential increase in load as a result of this project?

Additional Supporting Documentation: Briefly discuss the type of wastewater treatment system used by the City/County and list the different type of treatment units and their purpose. Identify any new treatment units or piping modifications to the facility. Indicate the type of wastewater that will be treated at the facility (percentage municipal, industrial and commercial). Attach a copy of the permit parameter page from the County/City's National Pollutant Discharge Elimination System (NPDES), Land Application Systems (LAS) or Reuse permit. Indicate the average monthly discharge monitoring report parameter concentrations in mg/l. Provide a map showing the location of the wastewater treatment facility discharge. Indicate whether or not the facility is currently in compliance with its NPDES permit and whether or not the facility has been issued a Notice of Violation and or a Consent Order regarding compliance. Acquire Discharge Monitoring Data (DMR) data for the existing facility and determine the amount of reserve wastewater treatment capacity available at the facility.

The existing plant provides very high quality effluent for both discharge to Lake Lanier and for land application. Plant performance data is provided in Appendix 2-7. The effluent flow values have been adjusted to delete the internal recycle streams which are currently being reported as a part of the total effluent flow.

There is also a graph in Appendix 2-7c showing a slight correlation of monthly average flow versus rainfall. Months with very little rainfall have generally lower flows, while the opposite is true with wet months. There are a number of factors other than rainfall that influence monthly flows, such as seasonal evapotranspiration and lake levels.

The proposed expansion will discharge highly treated reclaimed water to Lake Lanier. The discharge alternative is shown in the Antidegradation Analysis to be significantly less expensive than an urban reuse system. The direct discharge will also minimize consumptive loss of reclaimed water. The effluent will comply with the draft effluent limits listed in Table 2-1.

Note from Table 2-1 that there are several possible sets of effluent limits, with the primary difference being that the phosphorous concentrations decrease as the flows increase. The total pounds of P remains essentially constant over the range of flows. Flowery Branch has chosen an ultimate discharge flow of 2.2 mgd with a P limit of 0.08 mg/L. The quality of the discharge will be substantially better than the permit limits most of the time, due to the type of treatment process being used.

Influent wastewater will pass through rotary drum screens, grit removal units, biological reactors and clarifiers, cloth media filters, membranes, ultraviolet disinfection and post aeration prior to discharge. Waste biological solids will be treated by aerobic digestion/sludge holding prior to being dewatered by a belt press system.

Major plant improvements will consist of:

- New head works
- Two new oxidation ditch type reactors
- Two new secondary clarifiers
- Expanded cloth media filter system
- Expanded membrane filter system
- New aerobic digester
- New sludge pumping station
- Upgraded electrical system
- Improved SCADA system

The reclaimed water will be very close to background lake quality for those parameters regulated by the permit and should cause no degradation of lake quality or interfere with existing lake uses. The dewatered solids will be trucked to an approved sanitary landfill by a contract hauler or by city staff.

The current wastewater flows into the plant are more than 80 percent residential, with the balance being commercial and light industrial. The plant will be designed to treat typical strength municipal wastewater. New residences served by this

plant will use modern water conserving plumbing fixtures, which reduce per capita water consumption. Therefore the same quantity of pollutants are contained in a smaller volume of water, resulting in a higher strength wastewater. However, the wastewater entering the plant passes through the equalization basin, resulting in a decrease in the organic load to downstream process units.

The facility is currently in compliance with its NPDES permit and has not been issued either a Notice of Violation or a Consent Order regarding compliance. Additional information regarding current plant permit conditions and plant performance is shown in Appendix 2-7.

**Table 2-1
Draft Permit Limits**

Constituent/Parameter ¹	Limits		
Effluent Flow Rate (MGD)	1.0	1.5	2.2
Five-Day Carbonaceous Biochemical Oxygen Demand (mg/L)	2.5	2.5	2.5
Total Suspended Solids (mg/L)	5.0	5.0	5.0
Ammonia, as N (mg/L)	0.4	0.5	0.5
Escherichia coli (cfu/100 mL) ²	126	126	126
Total Phosphorous, as P (mg/L)	0.14	0.10	0.08
Dissolved Oxygen, Daily Minimum (mg/L)	6.0	6.0	6.0
pH, Minimum-Maximum (Standard Units)	6.0-9.0	6.0-9.0	6.0-9.0

¹Values are maximum monthly averages except as noted.

²Chlorine-based disinfectants cannot be used to treat bacteria.

SECTION 2-8 PROTECTED SPECIES

Will the proposed action harm or reduce the population of any protected species? With respect to the Georgia Environmental Policy Act (GEPA), the term "protected species" includes those plant and animal species protected by the State in accordance with the Georgia Wildflower Protection Act of 1973 and the Georgia Endangered Wildlife Act of 1973. DNR Rules, Chapter 391-4-10, provide more detailed criteria for the State's endangered species. Georgia protected species include those listed federally as endangered or threatened.

Additional Supporting Documentation: *Provide a narrative discussion of this topic. Submit a copy of the EID to the DNR-Non-Game Species office and request them to determine whether any protected species are present on the site or in the receiving stream reach downstream of the discharge. If DNR determines that protected species are present, then a formal study of the site and project impact will need to be conducted by a qualified person. Indicate who conducted the protected species survey and what qualifies them to conduct this study.*

In accordance with the Endangered Species Act of 1973 (P.L.93-205), the U.S. Department of the Interior and the State of Georgia periodically publish listings of plant and animal species designated as endangered or threatened. In addition, Georgia maintains a Special Concerns List which includes federally protected, state protected and other rare or imperiled plants, animals and natural communities. This list is available by County, and is based on the known locations of rare species. There are separate lists for plants and animals. The list of animals for Hall County is shown in Table 2-2.

**Table 2-2
Hall County Animals of Special Concern**

Scientific Name	Common Name	Federally Listed	Georgia Listed	Georgia Status
<i>Cambarus howardi</i>	Chattahoochee Crayfish		X	Threatened
<i>Cyprinella callitaenia</i>	Bluestripe Shiner		X	Rare

The expanded Flowery Branch WRF will return extremely high quality water to Lake Lanier in the Chattahoochee River basin. No chlorine will be added to the plant effluent; ultraviolet light will be used for disinfection. Suspended solids levels in the plant effluent will approximate those in the lake. The concentration of organic materials going into Lake Lanier will be very low. None of the species listed in Table 2-2 or Table 2-3 will be adversely affected by this discharge.

The Special Concerns List of plants for Hall County is shown in Table 2-3. No habit for any of these plants is found on the site, since the site has been used as a wastewater treatment plant for many years. Therefore the project will have no impact on any of these species.

**Table 2-3
Hall County Plants of Special Concern**

Scientific Name	Common Name	Federally Listed	Georgia Listed	Georgia Status
<i>Hydrastis Canadensis</i>	Goldenseal		X	Endangered
<i>Monotropsis odorata</i>	Sweet Pinesap		X	Threatened
<i>Nestronia umbellula</i>	Indian Olive		X	Rare
<i>Symphyotrichum georgianum</i>	Georgia Aster	X	X	Threatened
<i>Veratrum woodii</i>	Ozark Bunchflower		X	Rare

The federal endangered species list is somewhat different from the Georgia list in that it shows areas where protected species might be present, due to potentially suitable habitat. Correspondence with the DNR Wildlife Resources Division is included in Appendices 2-8a through 2-8d.

This project was originally planned for construction in 2008. However, the recession intervened, so it was delayed until this time. That is the reason for the inclusion of correspondence from 2007 and 2008. Very little has changed regarding endangered species.

SECTION 2-9 CRITICAL HABITATS

Is the proposed action expected to involve any critical habitats? Critical habitats are those sites on which the State has protected species are dependent for their survival. They also include U. S. Forestlands, U. S. Wildlife Refuges, Wilderness Areas, and Wild or Scenic Rivers.

Additional Supporting Documentation: *Provide a narrative discussion of this topic. Submit a copy of the EID to the DNR-Non-Game Species office and request them to determine whether critical habitat is present on the site. If DNR determines that critical habitat is present on the site, then a formal study of the site will need to be conducted by a qualified person. Indicate who conducted the critical habitat survey and what qualifies them to conduct this study.*

The State's Department of Natural Resources has not identified any areas in the project area as critical habitats and it is not expected that the project involves any area which could be classified as a critical habitat. There are no U.S. Forest lands, U.S. Wildlife Refuges, Wilderness Areas, or Wild or Scenic Rivers located in or near the project area. Therefore, it is not expected that the project will affect any critical habitat. Please refer to the correspondence with the DNR Wildlife Resources Division in Appendices 2-8a through 2-8d.

SECTION 2-10 AQUATIC LIFE/TROUT STREAMS

Will the proposed action significantly impact freshwater aquatic life, trout populations and/or trout habitat? Georgia has an abundance of freshwater lakes, streams, and bodies of water that support trout. The freshwater fisheries are important for the total food chain. Primary and secondary trout streams should be protected.

Additional Supporting Documentation: *Indicate that you reviewed the "Trout Streams of Georgia" map produced by DNR and determined whether the project-related streams are classified as trout streams. Provide a narrative that discusses the stream classification of any adjacent streams as indicated in Georgia's Integrated 305(b)/303(d) Report and whether the proposed project will impact trout populations and/or habitat.*

Lake Lanier in the vicinity of Flowery Branch is classified for recreation and drinking water. There are also different chlorophyll a limits for various portions of the lake. According to the latest 305b Report, Lake Lanier is meeting the chlorophyll a limits at the point where the Flowery Branch discharge enters the lake. It has been well documented that most of the phosphorous entering the lake is the result of non-point source pollution. The recently developed TMDL for chlorophyll a has determined that the proposed increased discharge from Flowery Branch will not have an adverse impact on the water quality in the lake.

The proposed water reclamation facility will produce a very high quality effluent, as shown in Table 2-1. Because of the high quality of the proposed discharge, the effluent will have insignificant effects on the lake water quality and the existing fresh water aquatic communities. There will be no impact on trout streams, as the only trout stream below the discharge is the Chattahoochee River below Buford Dam. This part of the river is classified as a secondary trout stream. The cold water discharged from the dam allows trout survival but not reproduction. A list and maps of all Georgia trout streams are shown in Appendix 2-10. There are no trout streams shown in for Hall County.

The reclaimed water to be discharged will primarily be water that has previously been removed from the groundwater of the Chattahoochee River basin for water supply by pumping from water supply wells. It will be discharged to Lake Lanier via the plant outfall line and will be available for downstream use by the various aquatic communities and owners of the downstream water intakes. It will also help to maintain the base flow of the Chattahoochee River at historic levels, since basin urbanization will tend to decrease the natural base flow.

SECTION 2-11 AIR QUALITY

Will the action result in a release or discharge of contaminants into the ambient air? Any action that results in the release or discharge of contaminants into the air such that existing ambient air quality may be diminished is a significant action. All discharges or releases may be subject to regulation under the Georgia Air Quality Control Act and/or the U. S. Clean Air Act.

Additional Supporting Documentation: *Indicate the buffer distances that will be maintained around the facility. Indicate the distance from treatment units to property lines and to habitable structures. Provide a map of the facility indicating the existing and proposed treatment units and the associated buffers adjacent to them. Add a statement that aerosols may be generated from the wastewater treatment facility components and that there will be adequate buffer zones around the facility to control the transmission of aerosols. Indicate that dust control will be implemented during construction.*

The plant is not located in a residential area. The site is bounded by a state highway and Corps of Engineers property on the east, Corps of Engineers property on the south, the Norfolk Southern railroad on the west and a

commercial property on the north. Distances from the plant property line to residential structures exceeds 300 feet in all directions. These buffer zones will minimize the transmission of aerosols. A drawing showing the buffers between residences and process units is in Appendix 2-11. The scale is shown by the 200 ft right-of-way of the Norfolk Southern Railroad.

There will not be a significant release or discharge of a significant amount of gases or particulate matter into the air. Construction of the proposed expansion will result in minor increases in dust and particulate matter at the existing site during construction. Dusty conditions will be controlled by using water trucks and/or applying reclaimed water to the appropriate locations. Therefore, the proposed project should not affect the ambient air quality in the area.

SECTION 2-12 SOLID WASTES

Will the project result in the generation of solid wastes for disposal, or will the proposed actions occur near or in an active or closed landfill? Solid waste is defined in the Georgia Comprehensive Solid Wastes Management Act. It includes different categories of wastes that exist in a solid form (household garbage, demolition material, land clearing debris, commercial non-hazardous waste material, etc.). Whereas the amount of solid waste generated that requires disposal is of concern, another primary issue relates to a land disturbance in the vicinity of an active or closed landfill.

Additional Supporting Documentation: *Indicate how screenings from the pump station and wastewater treatment facility will be removed and properly disposed. Indicate the name and location of the landfill that will receive the screenings and sludge from the facility.*

No significant impact on solid waste quantities generated in Flowery Branch or Hall County is expected from the proposed improvements. Anticipated future quantities of waste biological sludge are shown in Table 2-2. These quantities of waste sludge are when the plant is operating at 1.5 mgd. They were calculated based on an influent BOD5 of 250 mg/l and a net yield of 0.8 pounds of dry solids per pound of influent BOD5.

There will also be additional quantities of material removed at the headworks by the influent screens and the grit chambers. These materials will be transported to a landfill by the same trucks and/or containers that transport the waste sludge.

**Table 2-4
Waste Sludge Quantities**

Flow Condition	Waste Sludge, dry lbs/day
Maximum month	2,502
Annual Average	2,126

Flowery Branch currently uses city staff and city-owned trucks to haul grit, screenings and waste biological sludge to an approved sanitary landfill. Commercial waste disposal services may be used in the future if the private sector prices become more competitive than the current approach. The choice of which landfill to use is one of economics, considering tipping fees and transportation costs.

SECTION 2-13 SOIL STABILITY/ERODIBILITY

Will the action displace soils that will be carried off site and pose a threat to surface waters or property? Under the Georgia Soil, Erosion, and Sedimentation Act, local governments that have authorized management programs under the Act establish control procedures and issue a permit for the project. If the action takes place in a county or municipality that does not have such authorization, EPD is the regulating agency. In either case, a technical guidance book is available from either the local government or EPD.

Additional Supporting Documentation: *Provide a narrative indicating that all construction will comply with the State of Georgia Erosion and Sedimentation Control Act of 1975 and the Manual for Erosion and Sedimentation Control in Georgia, latest editions.*

Construction of process units and plant roads will result in temporary displacement of soil, which will temporarily impact the water quality of the storm water leaving the property. All construction will comply with the State of Georgia Erosion Control and Sedimentation Control Act of 1975 as amended in 2000 and the *Manual for Erosion and Sedimentation Control in Georgia, latest edition.*

A copy of the current Soil Erosion and Sedimentation Control Ordinance is contained in Appendix 2-13. This ordinance was amended in December, 2017.

SECTION 2-14 PROTECTED MOUNTAINS

Will the project involve the alteration of lands with high elevations and steep slopes? Under House Bill 643, which was passed by the 1991 Session of the General Assembly, lands which lie above 2,200 feet in elevation and have slopes of twenty-five (25%) or more are identified as Protected Mountains. In accordance with the ACT, the Department of Natural Resources is charged with promulgating Rules for implementation of a "Mountain Protection" program.

Additional Supporting Documentation: *Indicate the elevation of the project. Provide a copy of a USGS quad map showing the ground contours.*

The project is not located in areas of protected mountains as prescribed by the Department of Natural Resources and under House Bill 643 (1991). The maximum elevation on the project site is approximately 1085.

Protected mountains in Georgia are located in the Blue Ridge and Valley and Ridge geologic provinces. The locations of these two provinces are shown in Appendices 2-14a and 2-14b, respectively. As can be seen, none of Hall County lies within either of these geologic provinces.

There is only one location in Hall County with an elevation of 2,200 ft. It is on the County's northern border at the county line separating Hall County and White County, on the south-facing slope of Walker Mountain. The majority of Walker Mountain is in White County. This location is miles from the project site and is shown in Appendix 2-14c.

An enlarged portion of a USGS map, showing ground contours at the plant site, is provided in Appendix 2-14d. The only USGS contour map available shows 20 foot contours. A map with 1.0 foot contours developed for the plant expansion project is shown in Appendix 2-14e.

SECTION 2-15 HISTORICAL

Will the proposed action involve disturbance of any historic property? Georgia Environmental Policy Act (GEPA) requires consideration of any structure on or eligible for the Georgia Register of Historic Places. In addition, the regulations of the President's Advisory Council on Historic Preservation (36 CFR 800) which implements Section 106 of the National Historic Preservation Act of 1966 contains definitions and criteria of adverse effect for the protection of historic properties. Below is a list of documentation required for the review of projects under Section 106 of the National Historic Preservation Act of 1966.

Additional Supporting Documentation: *Provide a narrative discussion of this topic. Submit a copy of the EID to the DNR-Historic Preservation Division and request them to determine whether any historic sites will be impacted by this project. If the DNR-Historic Preservation Division indicates that a historic site exists on the site, then a formal study of the site will need to be conducted by a qualified person.*

Contact the Historic Preservation Division (HPD) for the actual requirements of a submittal on the specific project. However, they may require the following information:

- a. A letter describing the proposed undertaking, the federal agency involved (i.e. CWSRF, Economic Development Administration (EDA), etc.) and language requesting Historical Preservation Division's review of the undertaking.*
- b. A USGS topographic map indicating the location and Area of Potential Effect (APE) of the proposed undertaking. Please indicate the "footprint" of the proposed project (i.e. the ground disturbing area).*

- c. *Original 35mm or high quality digital color photographs of all buildings that appear to be fifty years old or older, which are located on, immediately adjacent to and/or within view of the project area, as well as photographs of the surrounding area to document the "setting" of the proposed undertaking. All photographs must be keyed to a floor plan indicating the location and direction of view. (For projects involving rehabilitation, alteration, or demolition of buildings, please provide interior and exterior photographs whenever possible, including all facades and significant details).*
- d. *For projects involving alteration or rehabilitation, include a detailed work write up, existing floor plans and proposed floor plans.*
- e. *For projects involving the demolition of buildings that appear to be fifty years old or older, include alternatives to demolition that were considered and a discussion of why such alternatives were determined not to be feasible.*
- f. *For projects involving archaeological resources, include any cultural resources surveys or reports conducted on the site.*

A record search was conducted at the online database of the Historic Preservation Division of the Georgia Department of Natural Resources. A listing of the National Register of Historic Places for Hall County is displayed in Table 2-5.

**Table 2-5
Hall County Historic Places**

Hall County Sites on National Register of Historic Places	
Site	Flowery Branch Commercial Historic District
Location	Main St. & Railroad Ave., Flowery Branch
Historic Significance	Architecture/ Engineering, Event
Architectural Style	Late Victorian
Area of Significance	Architecture, Community Planning and Development, Commerce
Period of Significance	1850-1874, 1875-1899, 1900-1924, 1925-1949
Owner	Private, Local Gov't
Historic Function	Commerce/Trade, Domestic
Historic-subfunction	Hotel, Specialty Store
Current Function	Commerce/ Trade

No listings are identified on the proposed expansion site. The project is to be built on an existing wastewater plant site that has had at least three major construction projects over the past 40 years. Most artifacts present would have

been destroyed during the previous construction Correspondence with the DNR Historic Preservation Division is included as Appendices 2-15a and 2-15b.

SECTION 2-16 ARCHEOLOGICAL

Will the proposed action involve disturbance of any archeological property? Archeological properties are the physical remains of the past that can be studied by archaeologist and other scholars to answer questions about prehistory and history. In addition, the regulations of the President's Advisory Council on Historic Preservation (36 CFR 800), which implement Section 106 of the National Historic Preservation Act, contain definitions and criteria of adverse effect for the protection of archeological properties.

Additional Supporting Documentation: *Provide a narrative discussion of this topic. Submit a copy of the EID to the DNR-Historic Preservation Division and request them to determine whether any archaeological sites will be impacted by this project. We recommend that the DNR-Historic Preservation Division be given an opportunity to review the EID and provide comments. If the DNR-Historic Preservation Division indicates that an archeological site exists, then a formal study of the site will need to be conducted by a qualified person.*

The Georgia Historic Preservation Division believes that no historic properties and/or archaeological resources that are listed in or eligible for listing in the Georgia/National Register of Historic Places will be affected by this project. Please refer to the correspondence with the DNR Historic Preservation Division which is included in Appendices 2-15a and 2-15b.

SECTION 2-17 BEACHES, DUNES, SHORELINES AND COASTAL AREAS

Section 2-17a Beaches - *Will the proposed action involve the disturbance of any ocean beach area? The Georgia General Assembly has found that ocean beaches provide an unparalleled recreation resource vitally linked to the economy of Georgia's Coastal Zone and to that of the entire state. They are also part of the sand-sharing system that provides habitats and acts as a protective buffer for other areas. This natural resource system is costly, if not impossible to reconstruct or rehabilitate once adversely affected by man-related activities. Therefore, any action in these areas should be considered highly significant.*

Flowery Branch is not located near any ocean coastline or ocean beach. The project will have no effect on any ocean beach area. It is approximately 230 miles to the nearest ocean.

Section 2-17b Dunes - *Will the proposed activity alter coastal sand dunes? Coastal sand dunes, beaches, sandbars, and shoals, comprise a vital natural resource system, known as the sand-sharing system, which acts as a buffer to protect real and personal property and natural resources from the damaging effects of floods, winds, tides, and erosion. The coastal sand dunes are the most inland portion of the sand-sharing system and because they are a fragile product*

of shoreline evaluation, they are easily disturbed by action harming their vegetation or inhibiting their natural development. They are protected under the Georgia Shoreline Assistance Act of 1979.

The project will not alter coastal sand dunes. See Section 2-17a immediately above.

Section 2-17c Shoreline – Will the project involve activities in the Georgia Coastal Shoreline area or in areas covered under the river corridor protection requirements of Georgia House Bill 643? In accordance with DNR Rules, Chapter 391-2-2, protective measures, and procedures are provided for the implementation of the Georgia Shoreline Assistance Act. Construction, erection, or engaging in any shoreline engineering activity or land alteration that alters the natural topography or vegetation of any area is highly regulated under the Act. In addition, the 1991 General Assembly passed House Bill 643 that also provides for the protection of coastal river corridors. DNR is authorized to promulgate Rules for the implementation of House Bill 643

This project will have no impact on any existing coastal shoreline. See the Beaches Section above.

Section 2-17d Coastal Marshlands (Estuary) – Will the proposed action alter the Georgia coastal marshland environment? Georgia's coast contains the saltwater marshes. These marshes have been identified as one of the most extensive and productive marshlands systems in the United States. Georgia's marshes, sands, and near-shore ocean water produce more food and energy than any other estuarine zone on the eastern seaboard. They are also an essential life support system for Georgia's multimillion-dollar seafood industry. Any activities that affect this area are closely regulated under the Georgia Coastal Marshlands Protection Act.

The project will not affect any estuarine areas or coastal marshland. It is approximately 230 miles to the nearest estuary and coastal marshland.

Section 2-17e Coastal Zone Management Area – If the proposed project is located in the Coastal Zone Management Area, will it comply with the EPD established strategy for managing salt-water intrusion in the Upper Floridan Aquifer of Coastal Georgia? The Upper Floridan Aquifer of Coastal Georgia is susceptible to salt-water intrusion. The aquifer is a primary source of drinking water and industrial process water throughout twenty-four counties of the region. In order to protect the Upper Floridan Aquifer from salt-water intrusion, EPD developed a strategy to address this problem. Projects in the coastal area must conform to this established ground water management strategy.

The project is not located in the Coastal Zone Management Area.

Section 2-17f Barrier Island - Will the proposed action involve activities on or near a barrier Island? Along the Georgia Coast an extensive system of salt marshes, tidal estuaries, and sounds separate a chain of eight major and several smaller barrier islands from the mainland. Two-thirds of Georgia Barrier Islands are parks, refuges, or preserves. Sand beaches and dunes protect the islands from erosion and flooding. The islands shelter the marshes from the force of storms. Any proposed action that involves the barrier islands should be considered highly significant.

Additional Supporting Documentation: If the project is located within the 11-county coastal zone that comprises the jurisdiction of the DNR Coastal Resources Division (CRD), submit a copy of the EID to the CRD for review. Indicate the distance from the project to the Atlantic Ocean.

The project is not located in the coastal zone.

SECTION 2-18 FOREST LAND

Will the proposed action involve changes in forested areas? GEPA specifically provides that a proposed government action includes the harvesting of five acres or more of trees over two inches in diameter at breast height. The secondary effects of tree removal as well as other land disturbing activities that may affect a forested area are of concern. Depending on the type of harvesting methods, tract locations and other variable criteria, there may exist a potential for erosion and sedimentation, habitat alteration, and other changes for concern. Manuals on Best Management Practices (common sense forestry associated practices that minimize the impact on the environment) are available from the Georgia Forestry Commission. These practices were developed by a statewide task force, appointed by the Governor, with input from all aspects of forestry in Georgia.

Additional Supporting Documentation: Provide a map showing the location of adjacent national and state forest areas in relation to the project area.

Construction of the WRF improvements will not involve significant changes in forested areas. The expansion of the wastewater treatment plant will be on the existing plant site, with the area used for new construction being made available by recent demolition of some obsolete structures. Almost no clearing of trees will be necessary, as can be seen from the photographs in Appendix 2-15b. If any clearing is required, Best Management Practices (BMP) and common sense associated forestry practices from the Georgia Forestry Commission will be used to minimize the impact on the environment during all phases of construction and operation.

Table 2-6 shows the approximate distances to the Nantahala, Chattahoochee and Oconee and Cherokee National Forests. A map of these national forests in relation to the project site is provided as Appendix 2-18.

**Table 2-6
National Forests**

National Forest	Distance to Project (miles)
Nantahala	55
Chattahoochee	25
Oconee	45
Cherokee	55

SECTION 2-19 PARKS/RECREATION

Will the proposed action involve disturbance or otherwise have a significant impact on the State's cultural resources? GEPA includes cultural resources within the consideration focus of a proposed government action. In addition to the archeological or historic value, cultural resources may also include parklands, preserves, and other public lands or area of recognized scenic and/or recreational value.

No public parks or recreational areas are currently located within the proposed project site. The nearest federal, state and local parks and recreation areas are shown in Table 2-7.

Additional Supporting Documentation: Provide a map showing the location of adjacent national, state and local parks in relation to the project area.

**Table 2-7
Parks and Recreation Areas**

Facility Owner	Facility Name	Distance from Plant (air miles)
United States	Chattahoochee National Recreation Area	8
United States	Flowery Branch Park	1
United States	Old Federal Compound and Park	4
United States	Mountain View Park	5
United States	Balus Creek Park	5
State of Georgia	Lake Lanier Islands	6
United States	Chestnut Ridge	3
Hall County	Alberta Banks Park	2
Hall County	Hog Mountain Sports Complex	3

SECTION 2-20 FARM LAND AND AGRICULTURE

Will the proposed action have a significant impact on land used for farm operation or will it be constructed on farmland?

Additional Supporting Documentation: *Provide a site map showing the location of farmland in the vicinity of the project. Identify the project in relation to farmland.*

The area of the proposed site is not classified as prime agricultural land. The expansion will occur on the existing cleared plant site. Some of the new facilities will be constructed on the area once occupied by an old anaerobic digester. There is almost no agricultural activity in the vicinity of the site. This area of Hall County is rapidly being urbanized.

Agricultural activity is important to the Hall County economy, however. Statistics on Hall County agriculture are shown in Appendix 2-20. The production of broilers in Georgia is a business worth in excess of \$4.4 billion annually, based on farm gate value in 2017. Hall County's share of this is approximately \$175 million, or approximately 4% of the total. The County contains some 490 poultry houses, ranking 9th in Georgia in the number of houses.

The next three agricultural commodities in Georgia in farm gate value are cotton, eggs and peanuts, with values of \$902 million, \$851 million and \$825 million respectively. Hall County does not rank in the top ten Georgia counties in any of these commodities. Additional information on agriculture in Hall County is provided in Appendix 2-20.

SECTION 2-21 SITE SAFETY

Will the characteristics of the proposed site have any effect on the safety of the work force or the surrounding residents?

Additional Supporting Documentation: *Provide a narrative description of potential manmade hazards (thermal/explosive/chemical, etc.) at any pump station or wastewater treatment facility. Provide a reference that all construction will comply with OCGA Chapter 9, Title 25 and the US Department of Labor, Occupational Safety and Health Administration, 29 CFR Part 1926, Subpart P, latest edition. Indicate that a perimeter fence will be installed around the entire facility, that all gates will be provided with locks and that no trespassing signs will be placed around the facility perimeter fence every 50.*

Following State guidelines, the site will include setbacks from all residential property boundaries. A perimeter fence is currently installed around the existing facility and will be expanded as necessary. The reclaimed water produced by the facility is approved for unrestricted use in public areas, such as golf courses and green space areas. As demonstrated by years of operations at this and similar facilities, the safety of local residents will not be affected by the proposed project.

By its nature, construction work is a dangerous occupation. Safety of the construction work force will be the responsibility of the general contractor. Contractor compliance with state regulations and the federal Occupational Safety and Health Act (OSHA) regulations during construction will minimize the potential for injuries. Under federal law and regulations, contractors must comply with OCGA Chapter 9 Title 25 and OSHA Regulations 29 CFR Part 1926, Subpart B, latest edition.

The public will be protected by being excluded from active construction areas of the site. Fences and warning signs will be used to signify that certain areas of the plant have ongoing construction. The two plant entrance and exit locations are provided with gates, which are locked after working hours.

For any pipe lines that are constructed off-site, open trench lengths will be kept to a minimum, signs and barricades will be used and relevant OSHA requirements will be followed. The general contractor will be responsible for implementing these safety measures.

SECTION 2-22 NOISE

Will the proposed action have significant impact on the existing noise levels in the area? The potential effect of the noise associated with the machinery involved with the project such as pumps, aerators, blowers, etc. must be considered.

Additional Supporting Documentation: *Indicate that all equipment associated with the wastewater treatment facility will have noise levels below 90 decibels at a distance of 3 feet. Indicate the buffer distance between the wastewater treatment facility and adjacent residences.*

Noise levels at the Flowery Branch WRF site are minimal and will not adversely change due to the new construction. All new plant equipment emitting more than 90 db will be enclosed, thus greatly diminishing the noise emitted to the surrounding area. During construction, there will be a temporary increase in noise from the operation of construction equipment, but this should be indistinguishable from the noise from the many other building projects in the general area.

Project construction time will be approximately 18 months. Most of the construction will take place between the hours of 7:00 AM and 5:00 PM. There will be occasional weekend or night time work when critical tie-ins are made during low flow periods. The dates of these cannot be predicted until detailed construction documents are prepared.

Typical sound levels from construction equipment are shown in Table 2-8. Since the plant site is adjacent to a heavily used rail line that connects the Atlanta area

to the northeastern section of the United States and the closest homes to the plant are on the other side of this railway, these noise levels should not be objectionable. Buffer distances between wastewater treatment facility and surrounding residences are shown in Appendix 2-11.

**Table 2-8¹
Sound Levels from Construction Equipment**

Source	Sound Level, dBA at Indicated Distance from Source			
	50 ft	100 ft	200 ft	500 ft
Trucks, Bulldozers, etc. (Diesel Powered)	70-95	64-89	58-83	50-75
Cranes	75-95	69-79	63-73	
Air Compressors and Other Stationary Sources (Diesel Powered)	76-85	70-80	64-74	56-66
Jack Hammers and Rock Drills	82-97	76-91	70-85	62-77
Pile Driver	105	99	93	85
Front End Loaders	73-86	67-80	61-74	53-66

¹ Source: EPA; Report to the Administrator of the Environmental Protection Agency to the President and Congress on Noise; Senate Document No. 92-93; 1972.

SECTION 2-23 ENERGY USE/ENERGY SUPPLIES

Is the proposed action the most energy efficient option? What will be done to optimize the energy efficiency of the equipment to be utilized? Energy efficient systems, as well as low energy systems, must be considered. Consideration should also be given to use of waste products to generate power, such as biogas-to-electrical power conversion. Will the proposed action have significant impact on the reduction in the available energy supplies? This primarily refers to the source of energy (electrical, gas/oil, solar, etc.) that will be consumed by the project in relation to the total available in the area. Is the energy that will be consumed by these facilities a significant portion of the available energy in the vicinity of the site?

Additional Supporting Documentation: *Peak power shaving should be discussed with local power utilities if applicable.*

The construction will involve the construction of new plant components as well as the continued use of many existing plant components. Aeration is the process that consumes the largest quantity of energy on a daily basis. The new aeration system in the two new aeration basins will be much more efficient than the existing system.

The system aerobic digesters will be expanded and its oxygen supply will no longer be supplied by the existing diffused air system. Use of diffused air in the digesters from the single plant air header system is very inefficient because of

the varying water levels in the digesters. Future oxygen supply and mixing will be supplied by dedicated positive displacement blowers. This will be more efficient than current practice.

It may be possible to replace the existing air-lift pumps that pump return and waste sludge with conventional centrifugal pumps. Control of these air lifts is very difficult. All new electrically-driven equipment will be supplied with high efficiency motors where feasible.

Power generation from biogas is not feasible for a plant of this size, due to the capital and maintenance cost of the required equipment. Peak power shaving will be discussed with Georgia Power Company and any other electrical utility that may have an opportunity to serve portions of or all of the expanded plant.

Operation of the proposed expansion will require additional electrical energy for pumping and treatment of the wastewater. The total additional electrical loads are minor in comparison to the entire City's energy demand. In addition, the plant's electrical energy is purchased from the Georgia Power Company, which is the largest power retailer in the State and which has the ability to supply any power demands that are needed by the City for many years into the future.

Under the terms of the Georgia Territorial Act, Georgia Power Company is expected to retain the right to continue to supply power to the plant. Information regarding this law and implementing regulations are shown in Appendix 2-23.

SECTION 2-24 IMPACTS

Section 2-24a Direct and Indirect Impacts - *Direct impacts are caused by the action and occur at the same time and place. Indirect impacts are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.*

Direct impacts from the project include the utilization of energy, labor and construction materials to build the facility, some increased noise levels during construction, and minor quantities of suspended material in the runoff from the construction site.

The major indirect impact of the project is continued economic growth in Flowery Branch and the surrounding area.

Section 2-24b Primary and Secondary Impacts - *The primary impact is the main impact of the action. Secondary impacts occur from the action but are less in importance and/or magnitude than the primary impact.*

The primary impact from the project is the conversion of wastewater from a liability to a resource. The reclaimed water will become available for drinking water, recreational uses and wild life habitat.

Important secondary impacts of the project are minor increases in Lake Lanier water levels and a small increase on the total quantity of materials going into local landfills.

Section 2-24c Cumulative Impacts - *A cumulative impact is the effect on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*

Cumulative impacts of the project include:

- Increased economic development in the area
- Maintenance of high quality water in Lake Lanier
- Need for additional utility infrastructure, such as pipe lines and electric transmission lines
- Need for additional and/or expanded transportation infrastructure
- Additional energy consumption due to new community residents

Almost every aspect of community life is impacted by the provision of additional utility services. New residents drive the demand for school system expansion, additional law enforcement resources, expanded sanitation services and many other items integral to the health of the local community.

CHAPTER 3 SUMMARY AND CONCLUSION

Construction of the proposed expansion of the Water Reclamation Facility in Flowery Branch will not have significant impacts on the environment. There will be minor impacts in the environmental categories of water resources, waste water, air quality, solid wastes, soil stability, energy supplies, aquatic life, noise and energy use.

Water resource impacts will primarily be associated with some erosion and storm water runoff during the construction and will be minimized by installing and maintaining sedimentation and erosion control devices. These erosion and sedimentation issues will be temporary during the construction period. The discharge of very high quality treated wastewater should have minimal impact on freshwater aquatic life. Air quality in the project vicinity will be temporarily impacted during construction due to dust from construction activities.

There will be a small increase in quantities of solid waste going to local landfills due to the disposal of waste sludge from the plant. There will be minor losses of soil from the site during construction even though best management practices for erosion control will be followed. An energy efficient process has been chosen to meet the stringent effluent limits. The amount of energy used will not affect the community energy supply.

Aquatic life in the Lake Lanier will be protected by the use of proper erosion and sediment control techniques during construction and by good plant operation during and after construction. The effect will probably be positive, as the base flow into Lake Lanier will be maintained as the area becomes more urbanized. There will be a temporary increase in noise during construction. Noise levels will return to near background levels after construction is completed.

No median, major, and unknown environmental effects to the surrounding environment are identified as being created by this project.

Flowery Branch Wastewater Treatment Facility Expansion

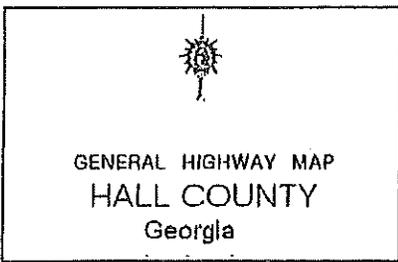
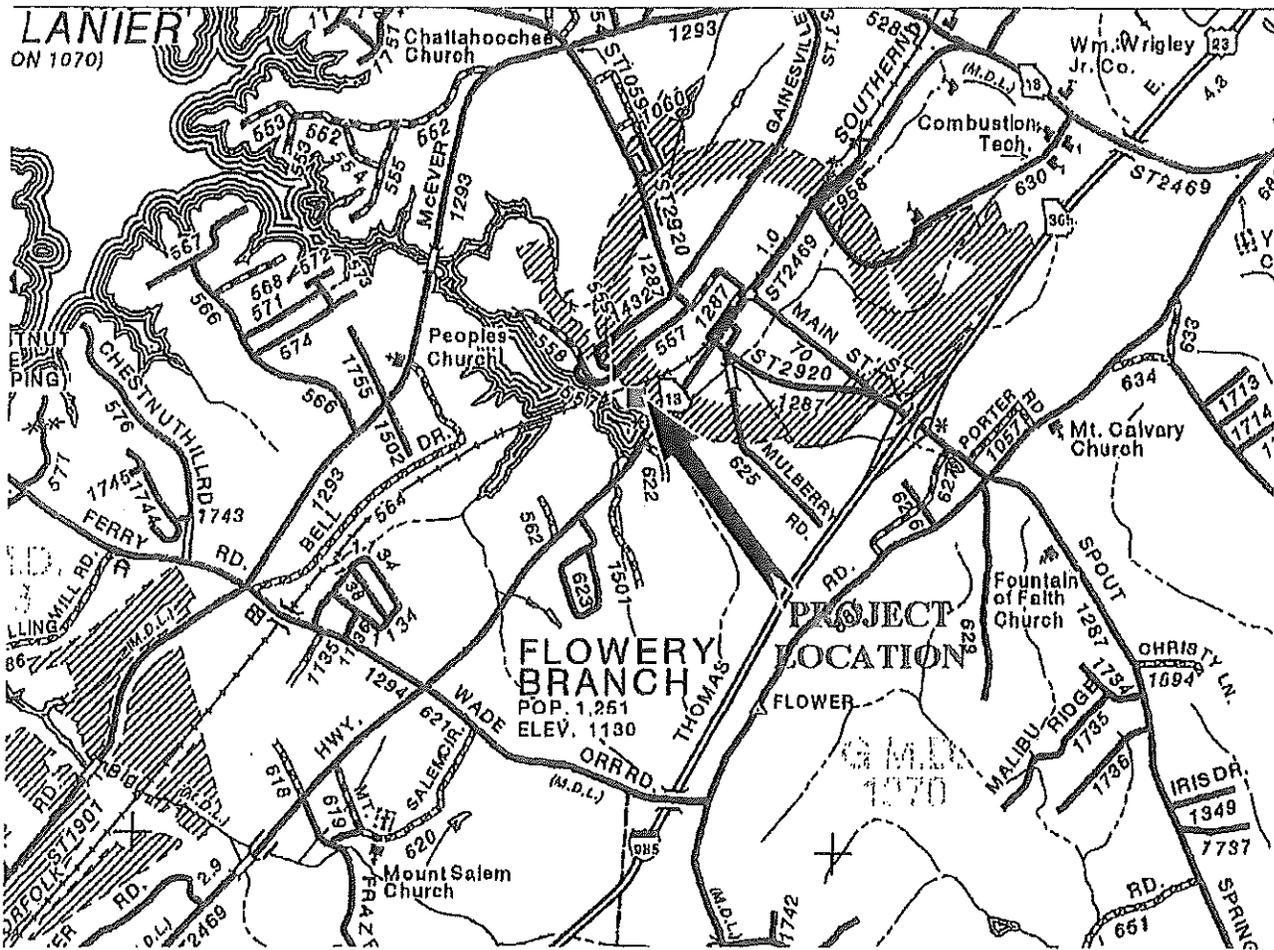
APPENDICES

Environmental Information Document

Flowery Branch Wastewater Treatment Facility Expansion

APPENDIX 1-1 Location Maps

Sources: Georgia Department of Transportation
Glades Reservoir Draft EIS, US Army COE
USGS Topographic Maps



**APPENDIX 1-1
LOCATION MAP 1**

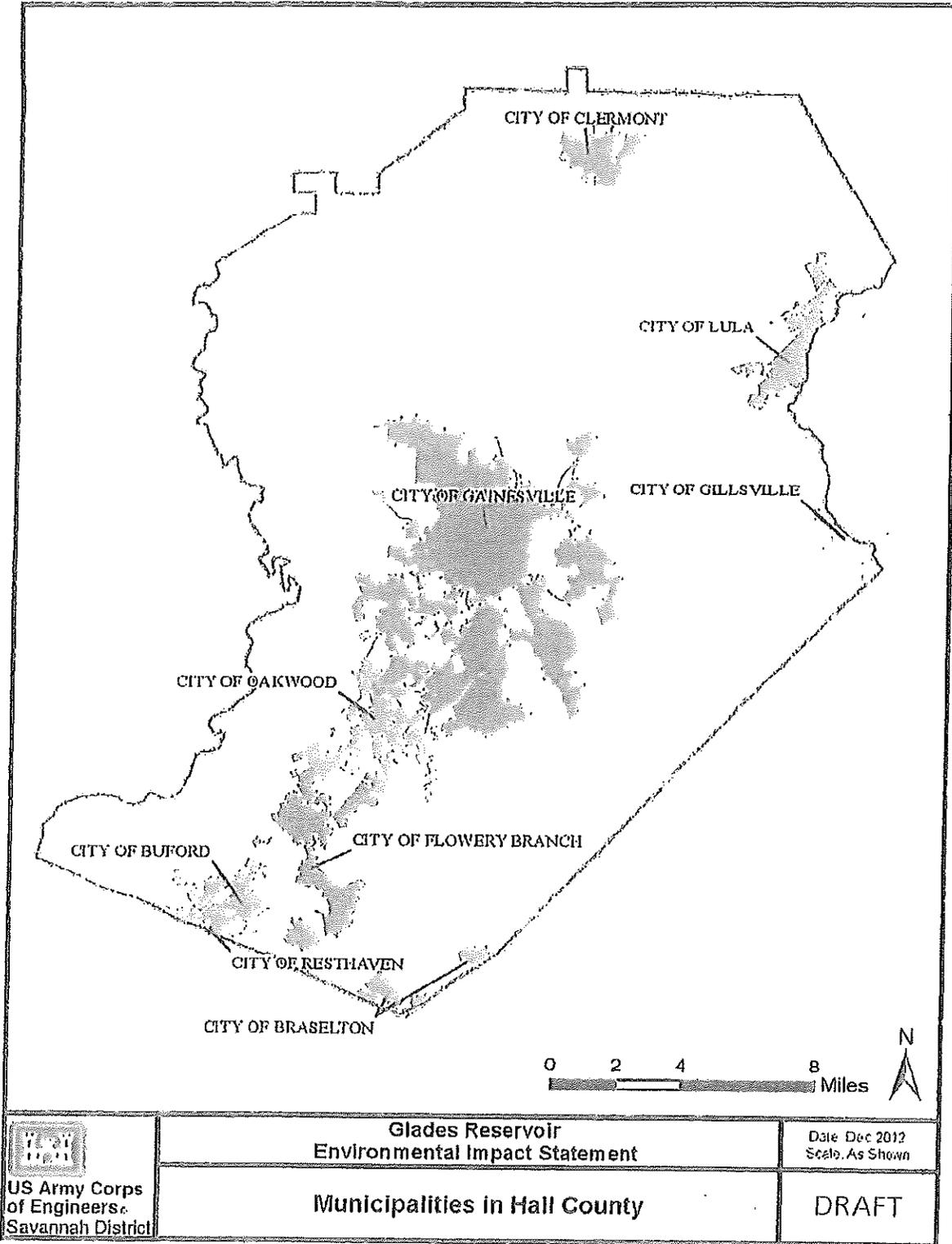
DEPARTMENT OF TRANSPORTATION
DIVISION OF PLANNING AND PROGRAMMING
OFFICE OF INFORMATION SERVICES

IN COOPERATION WITH

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

SCALE IN MILES

LOCATION MAP 2



APPENDIX 1-1

FLOWERY BRANCH WASTEWATER TREATMENT FACILITY EXPANSION

