

ENVIRONMENTAL ASSESSMENT
LAKE MARION REGIONAL WATER SUPPLY SYSTEM – Phase II Project
CALHOUN, CLARENDON, DORCHESTER, ORANGEBURG AND SUMTER
COUNTIES, SOUTH CAROLINA
EPA Grant No.: XP-984717-990

Introduction

This Environmental Assessment (EA) has been developed jointly by the U.S. Army Corps of Engineers (USACE), Charleston District and the U.S. Environmental Protection Agency, Region IV, in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA) (42 USC 4321-4347), 40 CFR Parts 1500-1508, 40 CFR Part 6, and 33 CFR Parts 230 and 325. The purpose of this EA is to assess and disclose potential environmental consequences associated with implementation of a proposed project or action that is utilizing Federal funds. The proposed project is the construction of the Lake Marion Regional Water Supply System.

The Lake Marion Regional Water Agency (LMRWA) was formed in 1995 with the goal of developing a regional water supply system that centralizes the public drinking water supplies of eleven municipalities located in Clarendon, Dorchester, and Orangeburg Counties in South Carolina. The eleven municipalities are: Santee, Elloree, Holly Hill, Eutawville, Bowman, Branchville, St. George, Harleyville, Ridgeville, Summerton, and Manning.

The Lake Marion Regional Water Supply System has been broken into three separate phases. Phase I consists of the construction of water transmission lines along the U.S. Highway 301 corridor between the Town of Santee and the City of Orangeburg and the installation of two elevated storage tanks. Phase II consists of construction of an 8 million gallon per day (MGD) drinking water treatment plant and approximately 65 miles of water transmission lines serving the municipalities of Manning, Summerton, Santee, Elloree, Holly Hill, and St. George. Phase III consists of the future expansion of the system to the remaining five municipalities not included in Phase II. This EA focuses on Phase II of the proposed project. A separate EA has been prepared for Phase I and separate NEPA action will occur for Phase III, as necessary, when Phase III is initiated.

A. Proposed Project and Funding Status

The major components of the Phase II project are (see Appendix A for figures depicting the Phase II project):

1. **Raw Water Intake and Pump Station:** The raw water intake structure will be located in Lake Marion within the old Santee River channel approximately 1500 feet from the lake shore and approximately 18 feet below the normal water level of the lake. The intake structure will consist of two stainless steel wedge wire screens capable of passing 25 MGD of raw water at an intake velocity of less than 0.5 feet per second. The intake structure will be connected to the raw water pump station by approximately 2600 feet of 42-inch diameter gravity pipe. The raw water pump station will consist of an

approximately 45-foot deep wet well with capacity for four pumps. Three 125 HP, 4200-gallon per minute (GPM) vertical turbine pumps; a 1.0 mm, 18,000 GPM self-cleaning strainer; and other miscellaneous equipment will be initially installed.

2. Water Treatment Plant: The water treatment plant will be located on a 26-acre site adjacent to the Bluffs subdivision near the Town of Santee. The plant will have a rated capacity of 8 MGD with capability for expansion up to 12 MGD. The plant will rely on ultrafiltration membranes as the main purification technology with additional treatment provided by chemical flocculation and granular activated carbon contactor processes. The plant will also contain a sludge collection system and various chemical feed systems for aiding process treatment, maintenances and disinfection. A Supervisory Control And Data Acquisition (SCADA) system will provide monitoring the facilities operation.
3. Finished Water Storage and Pump Station: The treated water (i.e., finished water) will be temporarily stored on-site at the treatment plant in two, 2-million gallon clearwells. The finished water pump station will consist of three 450 HP, 4200 GPM vertical turbine pumps and other miscellaneous equipment. Space will be provided for one additional pump to allow for future expansion of the pump station.
4. Water Distribution System: Approximately 65 miles of various sized pipelines (sizes vary from 12 inches to 36 inches) will radiate outward from the water treatment plant. This system of transmission pipelines will be divided into five separate reaches and will parallel power line, highway, and railroad rights-of-way. The reach north of Lake Marion will serve the Town of Summerton and the City of Manning with potential for future expansion into Sumter County and other parts of Clarendon County. The four reaches south of Lake Marion will serve the Towns of St. George, Elloree, Santee, and Holly Hill with potential for future expansion into Calhoun County and other parts of Orangeburg and Dorchester counties.

Construction of the treatment plant is expected to begin in late 2004 with funding provided by Federal and non-Federal entities. Construction of the various pipeline reaches is expected to begin in 2005 starting with the Santee reach. Upon completion of the Phase II project, water will be pumped to each municipality's existing water distribution system. The current water systems of each municipality will continue to exist and serve their customers. Their existing waterlines and tanks will remain in service. Customers will continue to receive their bills from their present water provider, which will continue to set water rates, approve extensions and manage their own distribution systems. The current municipal water systems will purchase their water wholesale from the LMRWA. As each municipal system expands, the citizens can choose to connect to the systems or stay on private wells. It is expected that there will be an initial group that connects immediately to the system to get away from their present

ground water supply. Then there will be a gradual connection to the system as wells or pumping equipment fails.

Initially, the Phase II project will serve approximately 10,000 residential customers and various industrial/commercial customers in the six municipalities (i.e., Manning Summerton, Santee, Elloree, Holly Hill, and St. George). By 2025, the system is expected to serve approximately 125,000 residential customers and various industrial/commercial customers. This expansion of the customer base is expected to occur by connection of the five remaining municipalities (Eutawville, Bowman, Branchville, Harleyville, and Ridgeville) to the system, expansion of each municipality's existing water system to include customers outside their present service areas, expansion of the system into Calhoun and Sumter counties, and expansion of the system into other parts of Dorchester, Clarendon, and Orangeburg counties. This expansion of the system is considered as Phase III of the project and is expected to occur over a 20 year period with an average of approximately 100 miles of pipeline being constructed each year within the 5 county area at a total cost of approximately \$182 million. Appendix B shows the final expected build out of the system by 2025.

Authorization and Funding

The Water Resources Development Act (WRDA) of 1992 (Public Law 102-580), as amended, specifically authorized the U.S. Army Corps of Engineers (USACE) to provide assistance to non-Federal interests for carrying out water-related environmental infrastructure and resources protection and development projects. Congress has subsequently appropriated funds for USACE to participate in the planning, design and construction of the proposed Lake Marion Regional Water System Project, which requires a non-Federal Sponsor to provide 25 percent of the total project cost. LMRWA is serving as the non-Federal Sponsor and has partnered with Santee-Cooper (a.k.a., South Carolina Public Service Authority) to serve as the agency's technical representative for the project.

This project is partially funded by a grant actions authorized in the EPA's Fiscal Year 1999 Appropriation Act (Public Law 105-276) in the amount of \$3,000,000 and in Fiscal Year 2000 Appropriation Act (Public Law 106-74) in the amount of \$3,801,000. The total amount of \$6,801,000 was authorized to assist in the construction of the water infrastructure for the Lake Marion Regional Water Supply System project. As authorized, an EPA grant was awarded in the amount of \$1,200,000 on September 29, 1999, and \$5,601,000 on April 14, 2003, to the Lake Marion Regional Water Agency (LMRWA). The grant is conditional and subject to the compliance with the NEPA requirements. These funds are divided between Phases I and II with \$3,510,000 being used for Phase I and \$3,290,000 being used for Phase II.

Funding Status

The total cost for the Phase II project is estimated to be \$62.3 million. The current funding sources (to date) and amounts are shown below. Additional funding, sufficient to fully fund construction of Phase II, is expected to be received.

US Army Corps of Engineers	\$15,000,000
South Carolina Bond Bill	\$6,080,000
EPA Appropriations	\$3,290,000
Orangeburg County Contributions	\$7,875,000
SC Office of Local Government	\$1,000,000
Total	\$33,245,000

B. Existing Environment

The project area is located in the southern part of the Atlantic coastal plain and is characterized by meandering rivers, streams, wetlands, and ellipsoidal topographic depressions. The topography throughout the proposed project is generally level, the highest elevation being about 400 feet above mean sea level, which is an area just north of Woodford in Orangeburg County. The proposed project encompasses a five county area of gently rolling urban, industrial, rural, and farmland areas. Calhoun County is located in the upper and middle coastal plain and occupies approximately 380 square miles (about 241,000 acres) with a population of 15,185 people (2000 U.S. Census). Clarendon County is located in the middle coastal plain and occupies approximately 600 square miles (about 383,000 acres) with a population of 32,502 people (2000 U.S. Census). Dorchester County is in the Atlantic coast flatwoods area. The county occupies approximately 570 square miles (364,000 acres) with a population of 96,413 people (2000 U.S. Census). Orangeburg County is located in three coastal plain provinces. The county occupies approximately 1,100 square miles (704,000 acres) with a population of 91,582 people (2000 U.S. Census). Sumter County is in the eastern part of South Carolina in the coastal plain. The total area for Sumter County is approximately 690 square miles (about 442, acres) with a population of 104,646 people (2000 U.S. Census). The average annual maximum temperature is 76° F and the average annual minimum temperature is 52°F and rainfall averages 48 inches annually, with the heaviest occurring in the late summer and early fall months. The prevailing winds are predominantly from the southeast however the prevailing winds in autumn are northeast. The surface waters in the project area include freshwaters located in the southern portion of the Peedee, the central portion of the Catawba-Santee, and central/southern portion of Edisto watersheds.

Some of the more common mammals frequenting the area include the white-tailed deer, fox, mink, muskrat, opossum, and the otter. Other possible mammals included the rabbit, raccoon, skunk, gray squirrel and American beaver.

The common fish species in Lake Marion and/or creek areas include channel catfish, largemouth bass, striped bass, American shad, blueback herring, pumpkinseed sunfish,

water supply is from 4 active groundwater wells, which provide a total supply capacity of 2,225 GPM (3.2 MGD). The town resides at ground elevation of approximately 130 feet. The supplied water is pumped into four separate storage tanks from its corresponding well and then flows by gravity into the existing system. The transmission lines consist of 6", 8", 10", 12", and 16" water mains. The town currently has 4 elevated storage tanks, which hold 500,000, 300,000, 300,000, and 100,000 gallons. The water system is generally well maintained and serves over 4000 customers. The wells generally have good quality water.

Santee Water System - The town of Santee is located on Orangeburg County and is on the west side of I-95. The population of Santee is 740 (U.S. Census 2000). The town's water supply is from 2 active groundwater wells, which provide a total supply capacity of 708 GPM (1.02 MGD). The town resides at ground elevation of approximately 125 to 140 feet. The associated storage tank is pumped from each well and then flows by gravity into the existing system. The existing elevated storage tanks capacities are 300,000 and 500,000 gallons. The transmission lines consist of 6", 8", 10", and 12" water mains and consist mostly of PVC pipe. The water system is generally well maintained and serves over 700 customers; however, Santee's wells exceed the iron limit. The town has frequent red water complaints.

St. George Water System - The town of St. George is located in the western part of Dorchester County. The population of St. George is 2,092 (U.S. Census 2000). The town's water supply is from 3 groundwater wells, which provide a total supply capacity of 605 GPM (0.87 MGD) and the town resides at ground elevation of approximately 125 to 140 feet. The three-groundwater wells are associated with three individual storage tanks, which hold 300,000, 250,000, and 100,000 gallons. The existing system consists of 6", 8" and 12" water mains and the newer portion consists of PVC pipe and the older pipelines consist of asbestos cement and iron pipe. The water system is generally well operated and maintained and serves over 2,000 customers. The only water treatment process is chlorination.

Other Systems - The other municipalities expected to be served by the LMRWA system all use groundwater as their source for drinking water. The number of wells, the storage capability, and the type and size of distribution lines vary with each system.

D. Need for Proposed Project

The Lake Marion Regional Water Supply System will provide a uniform and secure supply of water, fully protective of public health, to its five counties and 11 municipalities. Many of the presently utilized water sources will be proven insufficient based on projected growth. The Lake Marion Regional Water System would enhance public health by providing a reliable, high-quality water supply in compliance with drinking water regulations. The proposed Lake Marion Regional Water System would satisfy the immediate and future water supply, treatment, and transmission needs for a large portion of the five county area and would serve as a potential catalyst for economic

development. Specifically, needs related to health and safety, system operations and maintenance (O&M) and growth are key benefits for the future of the five county area. The Congaree and Wateree Rivers feed the Santee River. The Santee River and its adjacent tributaries is pooled within its banks by Wilson Dam and Pinopolis Dam to form Lake Marion (100,000 acres) and Lake Moultrie (65,000 acres), the largest fresh water reservoirs in the southeast and the most dependable source of water. The anticipated withdrawal from Lake Marion for the Regional Water Agency at a plant capacity of 12 MGD will be approximately 18 cubic feet per second (cfs) compared to a normal lake inflow of 15,000 cfs. For Lake Marion, one inch equates to an annual flow rate of 7.5 MGD or a total volume of 2,737,000,000 gallons; therefore, the lakes can easily handle the 12 MGD plant.

E. Alternatives Analysis

A number of conceptual plans were initially evaluated based on established criteria that considered engineering feasibility, cost effectiveness, environmental impacts, and socio-economic benefits. Alternative plans included, drilling additional wells, upgrading and optimizing existing systems, providing additional service from nearby water systems, and a “No-Action” alternative, which assessed both the immediate and long-term impacts to the region. However, these plans did not adequately satisfy the regions water supply needs and were no longer considered. The selected alternative is a regionalized system that consists of a central water treatment plant, a raw water intake and pumping station, and approximately 65 miles of interconnecting trunklines in various sizes. The alternatives analysis listed below considers four alternatives, and the selected alternative with the final centralized treatment plant scheme.

No action alternative

Without a centralized project, the area water authorities will not be interconnected. The primary advantage of this alternative would be monetary savings associated with their systems. Several of the municipalities would find their systems becoming less and less dependable without expensive upgrades and renovations. This alternative provides only short-term advantages derived from the lack of construction activity and disturbances to the environment in the project area. Growth in the area would be restricted. Rural residents in the project area would have to continue to rely on their own sources in spite of the water complaints. Short-term water quality impacts from construction activity would not be experienced nor would there be any temporary disturbances to air quality or noise impacts associated with construction activities. This alternative would not adversely impact any wetlands, forested habitat, or fish and wildlife resources.

The major disadvantage of the alternative is substantial and long-term. This alternative would not accomplish the overall water resource needs in the counties; therefore through time, it would result in a serious water supply deficit and further jeopardize the long-term water resource needs of the five county area. In addition, the available groundwater water supply would not be adequately distributed resulting in a continued dependence upon individual groundwater wells for many industrial and municipal uses. Without the

completed water supply system severe shortages of potable water would result in the future. For the above reasons, the no action alternative was eliminated.

The Construction of Additional Wells

In order to satisfy the projected water demand in the study area additional wells are required. This alternative would involve additional water transmission lines to the towns, the construction of additional storage tanks, and other facilities in the treatment of well water. All of the existing water systems within the project area, with the exception of Orangeburg DPU, currently rely on groundwater as a water supply source. The existing wells located in the study area have sufficient capacity to meet current demands; however, the ability to meet future water demands is dependent on the available quantity, quality, and the impact of proposed drinking water regulations on current treatment methods. The primary advantage to this alternative is the water treatment plant and the transmission lines would not be constructed and the wetland and forested areas would not be impacted. The primary disadvantages of installing additional wells are the monetary costs of maintaining the additional wells and the continued dependency on groundwater that would result.

Upgrade and Optimize Existing Systems

Upgrading and optimizing the existing systems was determined by the needs and capabilities of each of the systems from a supply, storage and distribution stand point in the LMRWA planning area. The primary disadvantages for upgrading the existing systems are: (1) the cost of upgrading these systems is approximately \$50 million, (2) the system would not provide a long term, reliable source of water, and (3) the inability to provide service to the areas outside the municipal systems. Finally, for efficiency of operations, it is typically the best option to regionalize water supply treatment whenever possible. For the above reasons, this alternative was eliminated.

Provide Service From Nearby Systems:

Three existing water systems in the region were reviewed that could potentially supply the needs of the LMRWA. They include: Orangeburg DPU, City of Sumter, and the Lake Moultrie Water System. In reviewing these systems in relation to their ability to provide service to LMRWA, there were three common themes that were consistent for each facility: (1) each facility is located on the perimeter of the LMRWA service area (2) each system would have to be expanded to meet the future needs of the LMRWA and (3) the distance that the treatment facility is located from the service area increases transmission cost, as well as raises water quality issues related to detention time in the pipe systems. For the above reasons, this alternative was eliminated.

Selected Alternative

The project will be an 8 MGD drinking water treatment plant (expandable to 12 MGD), and the installation of approximately 65 miles of water transmission pipeline (includes five separate reaches). The pipeline will follow existing power line, railroad, and highway rights-of-way. The reach north of Lake Marion will serve the Town of Summerton and the City of Manning with potential for future expansion into Sumter County and other parts of Clarendon County. The four reaches south of Lake Marion

will serve the Towns of St. George, Elloree, Santee, and Holly Hill with potential for future expansion into Calhoun County and other parts of Orangeburg and Dorchester counties. The water treatment plant will be located on a 26-acre site adjacent to the Bluffs Subdivision near the town of Santee (see Appendix A). The total project cost is estimated to be \$62.3 million (2003 baseline cost).

The water treatment plant will be based on the utilization of a Zenon Zeeweed Ultrafiltration membrane system. The configuration of the building and systems will likewise be based on the requirements of the Zenon system. The raw water will be treated with alum or a combination of alum and hydrochloric acid prior entering the treatment system. The first stage of the Zenon unit includes a mixing chamber with adequate detention time for the formation of floc particles. The treated water enters the Zenon Zeeweed Ultrafiltration membrane system, which consists of ultra filtration membranes. The membranes will be cleaned through periodic backwashing via back pulse flow and air scouring. The sludge is removed from the system through a valve in the bottom of the tank that drains in to the sludge accumulation tank. Next the treated water goes through carbon contactors, which consist of 30 inches of Granulated Activated Carbon (GAC) installed in a filter cell arrangement. The GAC will remove and/or adsorb Total Organic carbon compounds (TOC) to control taste and odor. The water proceeds to the Finished Water Storage unit where it enters a chemical feed system, which acts as a secondary disinfectant. The advantage of this treatment scheme is its ability to remove pathogens.

F. Environmental Consequences and Mitigative Measures

Stream Crossings and Floodplains

The placement of the proposed waterline along the power line easement and adjacent roadways will not affect the floodplains or topography. There are approximately 16 stream crossings involved in this project, which are covered by the U.S. Army Corps of Engineers Nationwide Permit Number 12. Best management practices will be required for construction including siltation fencing, directional boring under streams, or bridge suspension of waterlines where appropriate. If conventional stream crossings are necessary, the work will be accomplished during low flow periods as much as possible. Construction methods such as trench and cover and directional drilling will temporarily change topography; however, once the construction is complete, the topography will be restored to its original elevation.

Executive Order 11988 deters development in the 100-year floodplain for federally funded projects unless no other practical alternative is available. If development is planned within the 100-year floodplain and it is federally funded, there is an eight-step process that must be completed prior to release of funds; however, no development within the 100-year floodplain is planned as part of this project.

Climate

No changes in climate will occur as a result of this project.

Soils

Temporary impacts to soils and erosion would most likely occur during construction and during the placement of the waterline. Erosion would increase in areas that require the clearing of vegetation along the highly disturbed power line easement and along roadways. Best management practices would be implemented for construction including siltation fencing, hay bales, directional boring under streams or bridge suspension of waterlines where appropriate. In addition the disturbed areas would be seeded and/or grassed to prevent future erosion.

Wetlands

The proposed construction and placement of the pipeline will temporarily impact wetlands in some areas along the route. However, the proposed pipeline reaches follow existing highway, utility line, and railroad rights-of-way. Several portions of the pipeline route included in the preferred alternative would temporarily impact wetland areas. There are 107 jurisdictional wetlands and stream crossings involved with this project. Construction of these wetland and stream crossings will either be by directional drilling or “cut and cover” following the guidelines in U.S. Army Corps of Engineers Nationwide Permit Number 12. Best management practices will be implemented for construction including siltation fencing, hay bales, directional boring under streams, or bridge suspension of waterlines where appropriate.

Flora

The proposed action would have minimal impacts on some forms of natural vegetative communities. Best management practices will be implemented to ensure the clearing process will have no impact outside the construction easement.

Fauna

The proposed action would have a temporary and/or permanent adverse impact on some forms of fauna. Reptiles, amphibians, and other animals may be displaced to outlying areas during the pipeline placement and construction activities due to human presence and increased noise level. However, most of the construction is adjacent to the highway or on existing power line easements. These animals are accustomed to the highway traffic noise and routine maintenance on existing power lines and should return after the construction activities are complete.

Endangered and Threatened Species

U.S. Fish and Wildlife Service have determined that there are three potential endangered species of concern in the project area. These are the American Chaffseed, Canby’s Dropwort, and Pondberry. The USACE and USFWS performed preliminary field surveys for these species in late spring of 2003. Results of the field surveys indicated that no American Chaffseed, Canby’s Dropwort, and Pondberry were found within or adjacent to the proposed pipeline routes; however, a final field survey will be performed during the summer growing season prior to construction of the water treatment plant and each transmission line reach. Best management practices will be performed to protect

these plant species during construction. (This FNSI is issued subject to the completion of final field surveys and concurrence from the USFWS)

Historical and Archeological Features

The project involves construction in the existing power line, railroad, and roadway rights-of-way and previously disturbed areas; therefore, project concurrence has been obtained from the South Carolina Department of Archives and History. A determination has been made that this project will not have an effect upon any cultural resources or resources eligible for the National Register of Historical Places. However, should cultural resources be encountered during project activities, work shall cease and their office shall be consulted immediately. This stipulation shall be placed on constructions plans and specifications to insure that contactors are aware of it.

Noise and Other Pollution from Construction Activities

Implementation of the proposed action may cause temporary reduction of aesthetic appeal and interference with recreational activities in the areas of project construction. However, since project construction will be conducted in relatively small areas at a particular point in time, recreational and esthetic impacts will be localized and noise levels will be limited to daylight hours. Upon completion of work activities in any area, esthetic values and recreational opportunities will be restored as construction equipment is moved away.

The South Carolina Department of Health and Environmental Control (SCDHEC) has air quality jurisdiction for the project area. The ambient air quality for Dorchester, Calhoun, Clarendon, Orangeburg, and Sumter counties has been determined to be in compliance with National Ambient Air Quality Standards and these counties are designated as attainment areas. Implementation of the proposed action may cause temporary reduction of the air quality in the immediate areas of project construction. Construction activities would cause temporary increases in exhaust and dust emissions from equipment operations. However, since project construction will be conducted in relatively small areas at a particular point in time, air quality impacts will be localized and temporary. Upon completion of work activities in any area, air quality will be restored as construction equipment is moved away.

Miscellaneous Considerations

There are no parks located in the immediate area of the project. This project should have no effect on these facilities or other recreation or open spaces. No part of this project is located on any listed wild or scenic river.

Water Quality

Temporary changes to water quality and surface waters related to turbidity and sedimentation are anticipated during construction. These impacts will be localized and proper erosion control and filtration control measures will be implemented during construction activities. Remediation procedures will prevent any potential long-term impacts and degradation of water quality resulting from the proposed work. The water treatment plant is not expected to produce additional plant growth affecting the water

clarity and water temperature during the construction and operation of the water treatment plant. The operation of the raw water intake is not expected to significantly impact Lake Marion. The project is consistent with applicable South Carolina water quality regulations and will not impair any such standard or fail to meet anti-degradation requirements for point or non point sources. The project will not create any shortages for or otherwise adversely affect the withdrawal capabilities of other present users of the raw water supply. USACE requested water quality certification from the South Carolina Department of Health and Environmental Control in Public Notice #2003-1R-213, dated July 25,2003. (This FNSI is issued subject to all certifications/permits being acquired from the State of South Carolina.)

The indirect and cumulative impact to water quality that might occur would be the potential expansion of the existing wastewater collection and treatment services within the existing sewer service areas. All five counties in the area of the project (i.e., Sumter, Clarendon, Orangeburg, Calhoun, and Dorchester Counties) are evaluating the possible expansion and/or regionalization of wastewater treatment facilities. In the near future, Orangeburg County expects to construct a wastewater collection system along the Highway 176 corridor between I-95 and I-26. This system will have the potential to serve the wastewater needs of the Towns of Santee and Elloree. If a wastewater treatment plant expansion occurs, the proper permits would have to be obtained from South Carolina Department of Health and Environmental Control (SCDHEC), which would ensure protection of water quality.

Hazardous and Toxic Materials

There are no known hazardous or toxic waste sites within the immediate vicinity of the treatment plant or any of the transmission lines. A site of regional concern is the Pinewood hazardous waste landfill located near Pinewood, South Carolina. The Pinewood landfill is located approximately 1200 feet from the north shore of Lake Marion approximately 13 miles north-northwest of the water treatment plant's intake. There have been no known releases of hazardous or toxic wastes from the landfill's containment system, and, although the potential for a release exists, there are safeguards that significantly reduce the risk to the Lake Marion Regional Water System's water supply. The landfill is surrounded by groundwater monitoring wells that are periodically monitored and would detect releases from the landfill before contaminants reached the waters of Lake Marion. If contaminants did enter Lake Marion, the release rate of the contaminants into the lake would be slow, and significant diffusion, with a resulting significant reduction in contaminant concentration, would occur before the contaminants reached the treatment plant's intake. If contaminants did reach the treatment plant's intake, the concentrations would be very low and the activated carbon unit in the treatment plant would remove the contaminants from the water. Therefore, based on the above, the threat posed by the Pinewood landfill to the system's water supply is very small.

Cumulative Impacts

The cumulative impacts of the total Lake Marion Regional Water Supply System (i.e., Phase I, Phase II, and Phase III) are small because the system is designed to mostly

replace existing water supply systems and the expected population growth in the service area.

Environmental Justice Issues

The Lake Marion Regional Water project is not designed to create a benefit for any group or individual, but rather provides a region-wide benefit. There are no indications that the proposed water supply project would be contrary to the goals of Executive Order 12898, or would create disproportionate, adverse human health or environmental impacts on minority or low-income populations of the surrounding community. The public water supply project will provide safe drinking water to all residents on an equal basis and will reduce the dependence on groundwater in the future.

Farmland Protection Policy Act

The project involves the construction of approximately 65 miles of pipelines in counties with a large agricultural and rural base. The proposed pipeline reaches will follow existing power line and highway rights-of-way where possible to avoid impacts on any prime farmland in accordance with the Farmland Protection Policy Act.

Wild and Scenic River Act

A review of the Wild and Scenic River inventory list reveals that the proposed project will not affect a stream or portion of a stream that is included in the National Wild and Scenic Rivers system.

G. Public Participation

The LMRWA has held regular meetings each month for approximately eight years where each of the potential participants, funding agencies, and organizations associated with the design and implementation of the project have been invited and encouraged to attend. In addition, monthly meetings with the design coordination team, which is primarily Santee Cooper, the consulting engineers, the Construction Management Team (U.S. Army Corps of Engineers), and any individuals wishing to attend from each of the participating towns including the Administrators and Councils, have been held for two years. Group meetings have also been conducted with all of the potential participants where information regarding funding, design, and permitting has been presented.

Three public meetings were held at locations throughout area covered by the system. The three meetings were held at the Santee Town Hall on September 30, 2003, from 5:00 PM until 7:00 PM, at the F.E. Dubose Campus of Central Carolina Technical College in Manning on October 1, 2003, from 5:00 PM until 7:00 PM, and at the St. George Town Hall on October 2, 2003, from 5:00 PM until 7:00 PM. Notification of the meetings was published in the Manning, St. George, and Orangeburg newspapers. Copies of the EID were also made available for review and comment at many public locations (e.g., County office buildings, public libraries, and town halls) prior to the meetings. Additionally, the EID was posted on the internet. No adverse comments were received during the public meetings or from public review of the EID.

The wholesale water costs (\$/1,000 gallons to the member utilities are projected to be:

- at 2.14 million gallons/day \$0.75
- at 4.50 million gallons/day \$0.56
- at 6.90 million gallons/day \$0.42
- at 11.5 million gallons/day \$0.37

H. Agencies Consulted

The following State and Federal agencies were consulted during the environmental review of this project:

- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- South Carolina Department of Natural Resources
- South Carolina Department of Health and Environmental Control – Water Quality Section
- South Carolina Department of Health and Environmental Control – Office of Ocean and Coastal Resource Management
- South Carolina State Historic Preservation Office

APPENDIX A

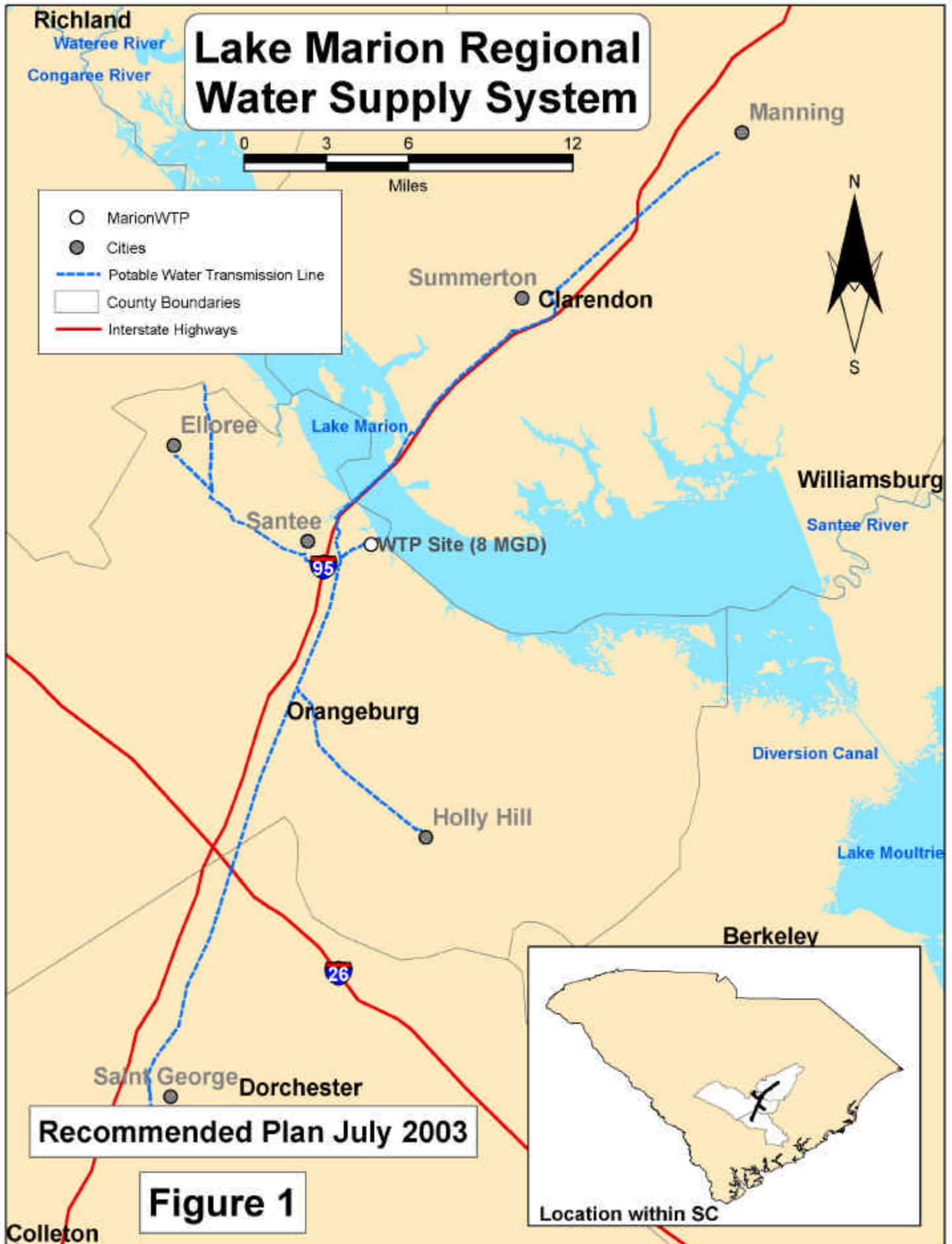




Figure 2: Water Intake & Plant Sites

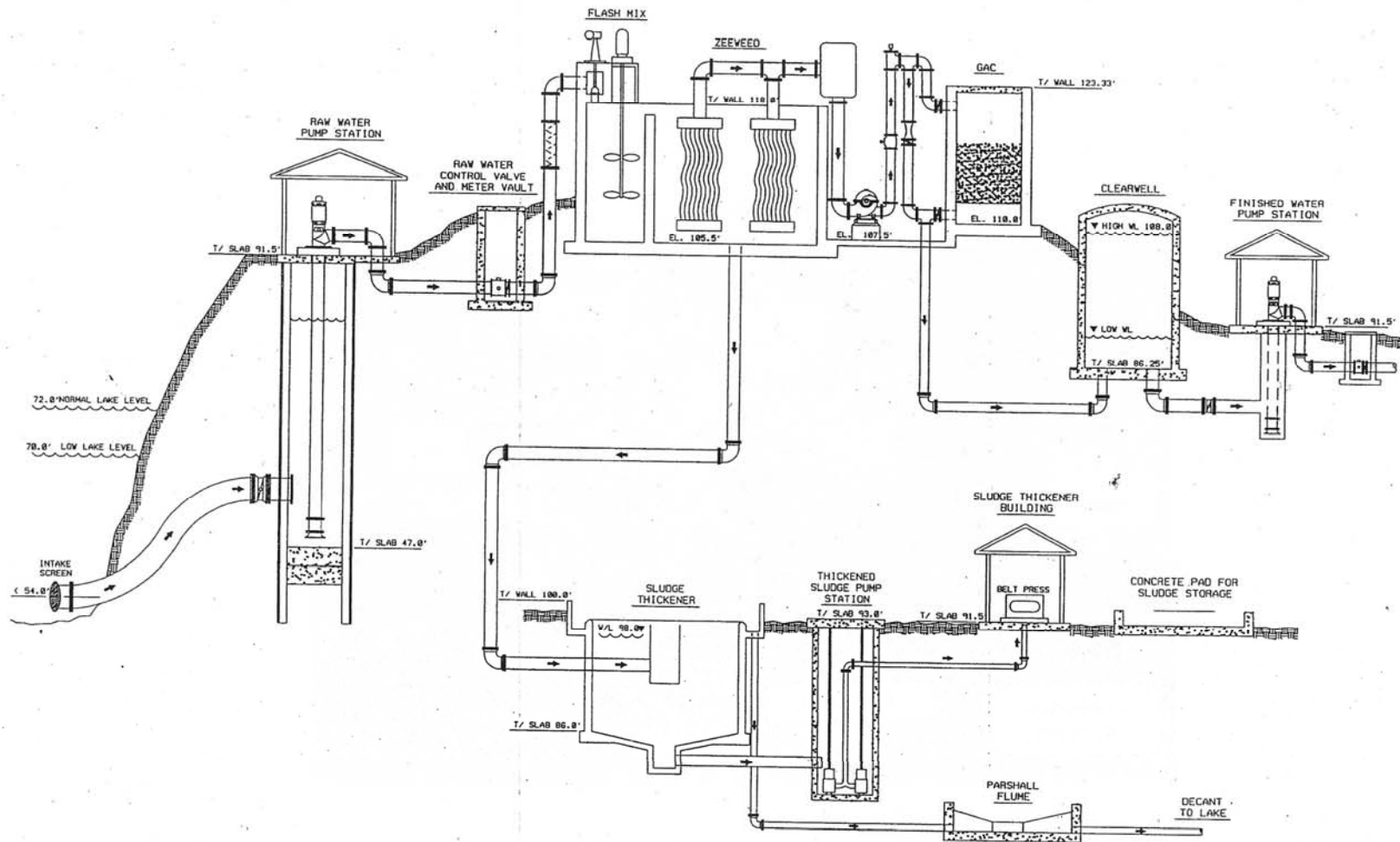


Figure 3: Schematic of Treatment Plant

APPENDIX B



**Sumter
County**

Turbeville

I-95

Pinewood

Paxville

Alcolu

Manning

**Calhoun
County**

**Clarendon
County**

Creston

Summerton

Elloree

Santee

Lake Marion

**Orangeburg
County**

Vance

I-26

Eutawville

Bowman

Holly Hill

Lake Moultrie

Branchville

I-95

Harleyville

St. George

**Dorchester
County**

I-26

Ridgeville

**Berkeley
County**

LEGEND

Phase 1		2004-2005
Phase 2		2005-2008
Phase 3		2008-2010

**Lake Marion Regional
Water Agency
Distribution System
Master Plan**