DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
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CHARLESTON, SOUTH CAROLINA 29403-5107

# FINDING OF NO SIGNIFICANT IMPACT

## Dorchester Reach
## Water Transmission Main

### Dorchester County, South Carolina

### November 2016

The National Environmental Policy Act (NEPA) requires the U.S. Army Corps of Engineers, Charleston District (Corps), to evaluate the effect of proposed projects on both the environment and human health and welfare. This Finding of No Significant Impact (FONSI) summarizes the results of the Corps' evaluation and documents the Corps' conclusions.

The Corps, working in cooperation with the Lake Marion Regional Water Agency, Santee-Cooper, and Dorchester County, is proposing to construct an extension to an existing potable water transmission main in the Town of Harleyville. This project would extend the water transmission main from Harleyville approximately 56,000 feet (10.6 miles) southward to near the Town of Ridgeville (see Figure 1). An Environmental Assessment (EA) of the anticipated environmental effects of the proposed project was prepared by the Corps. The Corps' work on this project is being conducted under authority of the Water Resources Development Act (WRDA) of 1992 (Public Law 102-580), which authorized the Corps to provide assistance to non-Federal interests for water and wastewater related environmental infrastructure projects.

The Lake Marion Regional Water Supply System, of which the proposed project is a part, will provide a uniform and secure supply of water, fully protective of public health, to its five counties and 11 municipalities. Many of the existing water supplies will be overwhelmed in the foreseeable future by 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 expansion of the 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.

The Corps evaluated several alternatives before development of the proposed project. These alternatives included the following:

Alternative 1 (proposed project) would connect a new 16 to 20-inch potable water transmission main to an existing 16-inch water transmission main near the Town of Harleyville and extend the water transmission main to the southeast approximately 56,000 feet (10.6 miles) to a point near the Town of Ridgeville (Figure 1). The new line would terminate at the junction of US Highway 78 and SC Highway 27. From its junction with US Highway 178 the water transmission main is located within Department of Transportation right of way. Parts of the directional drill temporary platforms extend beyond the Department of Transportation right of way.

Alternative 2 would provide water the corridor between Ridgeville and Harleyville by extending the Lake Moultrie System to this area. Currently Dorchester County is not member of the Lake Moultrie Water Agency.

Alternative 3 would provide water to the Ridgeville area and the surrounding areas by installing more water wells in the area. There are concerns about the increasing demand on groundwater and its effect on the capability of the aquifer to continue to produce high quality water in the area of the proposed project. These concerns have resulted in the State of South Carolina implementing a program that monitors all new groundwater wells that withdraw more than 3 million gallons per month (i.e., approximately 70 gallons/minute if operated continuously). Because of this increased demand on groundwater and the concerns about the effect on the aquifer as an additional source of potable water, groundwater is not recommended as a source of potable water for the Ridgeville area.

The No Action Alternative is the same as the most probable future without constructing the proposed project. A basic alternative to any proposed plan of improvement is the "No Action" alternative. Adoption of this alternative implies acceptance of the existing conditions in the proposed project area.

The Corps' criteria for evaluating the effect of the proposed project included the following:

- Important Farmland – This project will not result in the unnecessary and irreversible conversion of farmland to nonagricultural uses.
- Formally Classified Lands – no significant impacts to formally classified lands are expected as a result of implementing the proposed project.
- Wetlands– No practical non-wetland alternative exists. The considered actions do not conflict with applicable state and local standards concerning wetland protection and permitting and are covered under USACE nationwide permit number 12. The proposed project has avoided and minimized wetland impacts where possible. The proposed project will not significantly affect the natural and beneficial values of the impacted wetlands as approximately 1.47 acres of the disturbed acreage will be allowed to return to a natural state after installation of the water transmission main. Approximately 2.37 acres will be mitigated for through the purchase of 23.7 wetland mitigation credits. No permanent fill material will be placed in wetlands. All permanent impacts are associated with clearing and will be mitigated to ensure no net loss of wetlands.

- Floodplains - No practical non-floodplain alternative exists. The considered actions do not conflict with applicable state and local standards concerning floodplain protection. The considered action will not significantly affect the natural and beneficial values of the floodplain.
- Water Quality – no significant effects on water quality are expected as result of construction or operation of the proposed project. Directional drilling or jack and boring would be used at all stream crossings and would result in no impacts to streams from construction of the proposed project.
- Cultural Resources – no effects on cultural resources are expected as a result of implementing the proposed project.
- Threatened and Endangered Species – no effects on threatened and endangered species are expected as a result of implementing the proposed project.
- Noise – a short term increase in noise is expected during construction; however, these impacts will be temporary. No additional effects are anticipated a result of implementing the proposed project.
- Air Quality – A short term decrease in air quality in the immediate vicinity of construction is expected as a result of implementing the proposed project; however, these impacts will be temporary and localized. No additional effects are anticipated a result of implementing the proposed project.
- Environmental Justice – no adverse effects on minority and low-income populations are expected as a result of implementing the proposed project.
- Cumulative Impacts – no significant adverse cumulative impacts are expected as a result of implementing the proposed project.

The draft EA and FONSI were distributed on September 22, 2016 for a 30-day comment and review period. The Final EA addresses the comments received during this review period. Since the Corps' findings demonstrate that the project will not significantly adversely affect environmental resources or human health, the preparation of an Environmental Impact Statement is not warranted. The full Environmental Assessment can be downloaded from the internet at *http://www.sac.usace.army.mil/Missions/CivilWorks/NEPADocuments.aspx.*

28 Nov 16
Date

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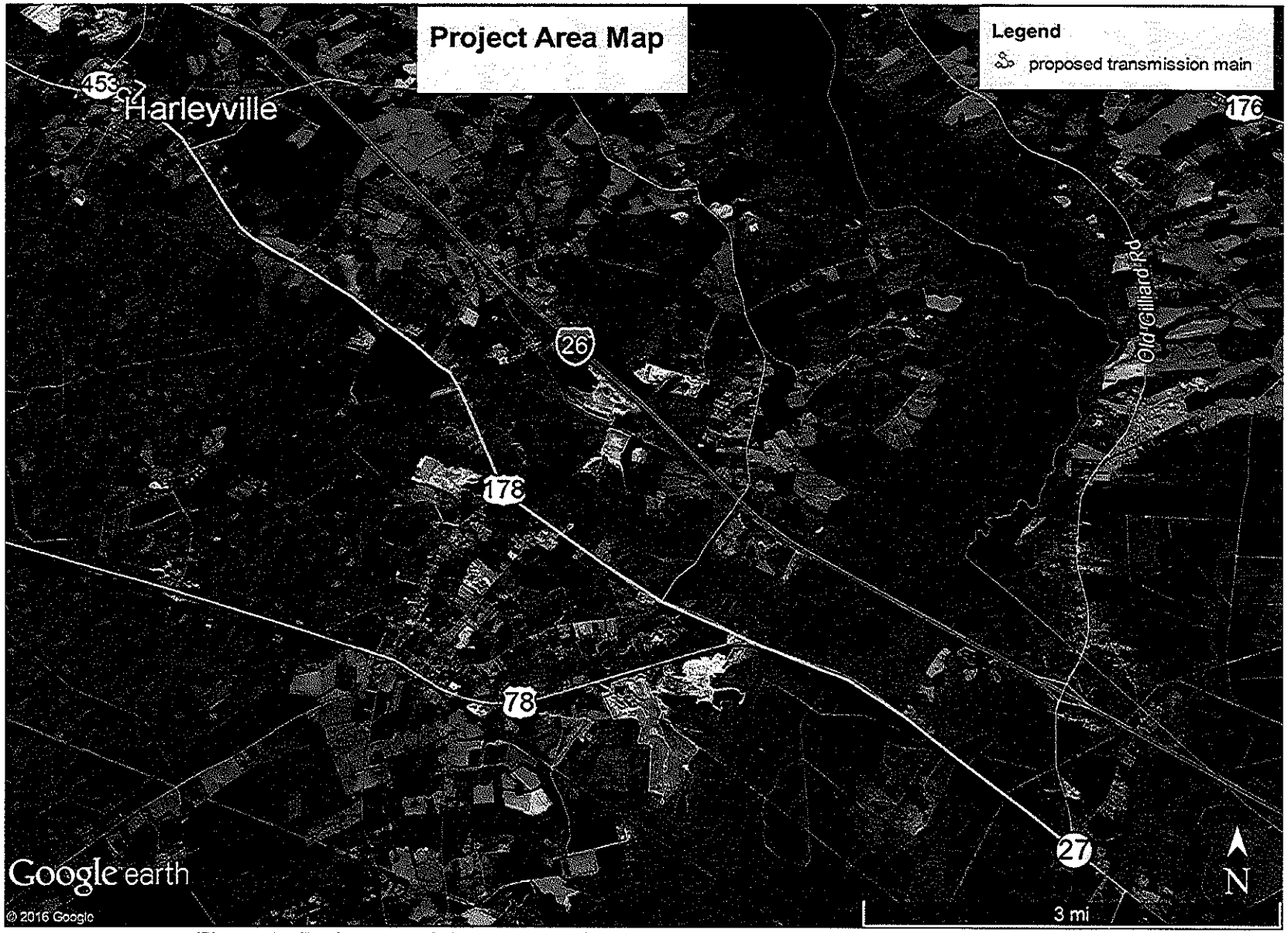


Figure 1 - Project Area Map. Proposed water transmission main placement shown in blue

# ENVIRONMENTAL ASSESSMENT

## Dorchester Reach Water Transmission Main

## Dorchester County, South Carolina

Prepared by:
United States Army Corps of Engineers
Charleston District
November, 2016

# Table of Contents

# CHAPTER 1 INTRODUCTION

This Environmental Assessment (EA) has been prepared by the U.S. Army Corps of Engineers, Charleston District (Corps) in compliance with the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321- 4370f, and its implementing regulations, 40 C.F.R. §§ 1500-1508, and 33 C.F.R. Part 230, to evaluate the proposed installation and operation of a potable water transmission main from Harleysville, SC to near Ridgeville, SC.

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. The Lake Marion Regional Water Agency (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.

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

The Lake Marion Regional Water Supply System was originally broken into three separate phases. Phase I consisted of the construction of a water transmission line 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 consisted 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 consisted of the future expansion of the system to other municipalities not included in Phase II. A separate EA was prepared in 2003 for Phase I and Phase II and these documents are incorporated by reference in this EA. This current EA focuses on part of Phase III of the proposed project and addresses impacts from installation and use of a water transmission main from Harleyville, SC to just outside of Ridgeville, SC.

Harleyville is located in Dorchester County near the intersection SC Highway 453 and Interstate 26 (i.e., Exit 177 on I-26). It is approximately 78 miles south-east of Columbia SC and approximately 47 miles north-west of Charleston SC.

Ridgeville is located in Dorchester County and is approximately 11 miles southeast of Harleyville. The proposed project generally follows Highway 178 (East Main Street) to US-78 to US – 27 from Harleyville to near Ridgeville (Figure 1).

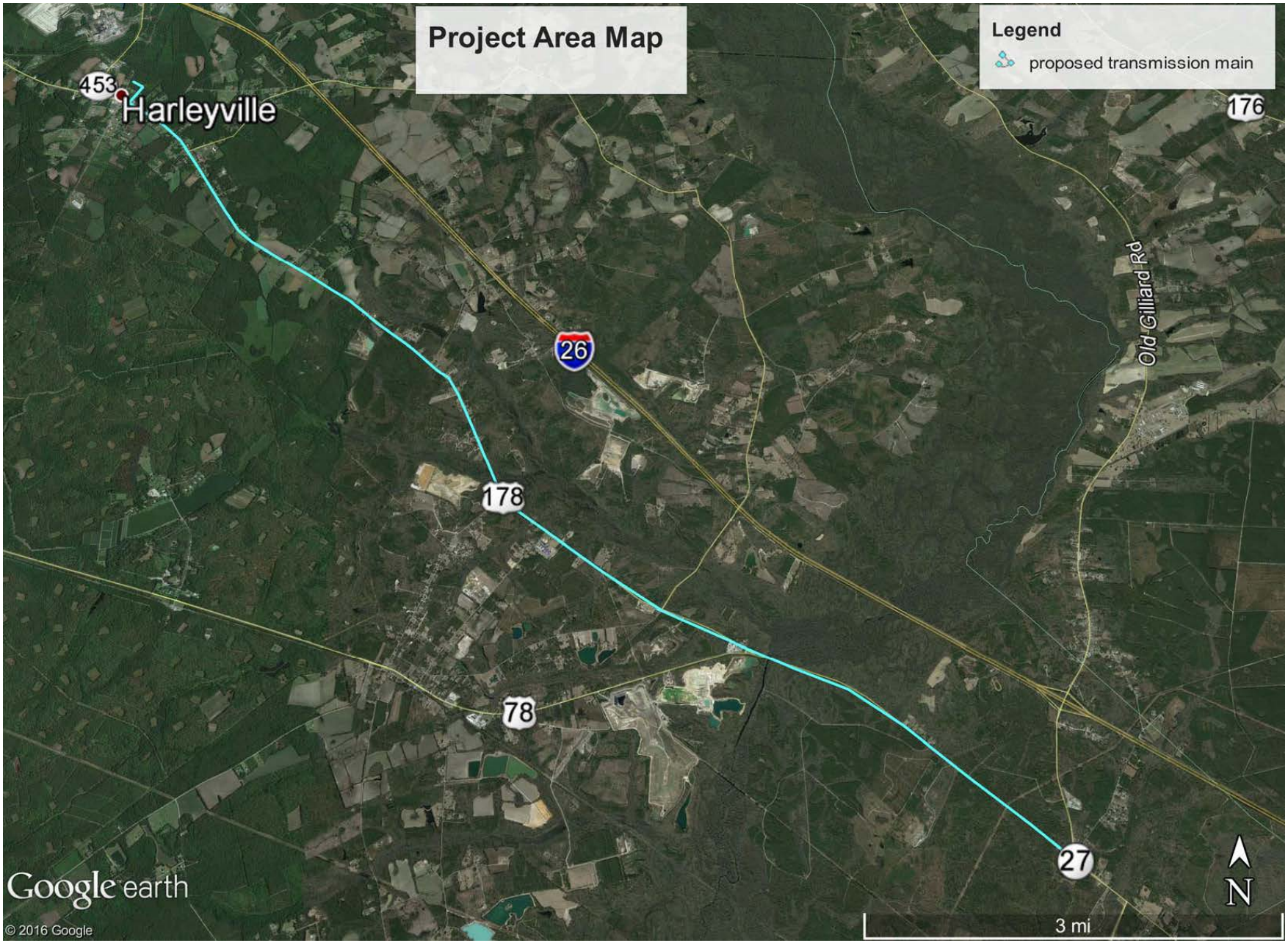


**Figure 1 - Project Area Map. Proposed water transmission main placement shown in blue**

# CHAPTER 2 PURPOSE AND NEED

The water transmission main from Harleysville to just outside Ridgeville would be a continuation of the Lake Marion System into Dorchester County. Once the line is constructed to Ridgeville, the system is expected to be expanded to several other smaller communities in Dorchester County. The system is also expected to serve schools in the Harleysville/Ridgeville area (Dorchester County Career and Technology Center technical school and Harleyville-Ridgeville Middle School), the Ridgeville Commerce Park, the proposed Timothy Lakes subdivision and several local businesses. The line will also serve as either a backup water source or future primary water source for the Camp Hall Industrial Campus and provide water to a residential subdivision being developed along the route of the proposed water transmission main. The new water transmission main will provide the area with a dependable, quality water source.

Ridgeville currently gets its potable water from groundwater wells. These wells are currently struggling to meet growing demands in the area. The only treatment performed on their water is chlorination. Construction of the water transmission main would help alleviate the dependence on and depletion of the aquafer in the area and provide residence and businesses in the area with a dependable environmentally sound surface water source. Construction of the proposed project would satisfy the current and future water supply needs for a portion of Dorchester County in the Harleyville/Ridgeville corridor. Specifically, needs related to health and safety, system operations and maintenance are key benefits for the future of the area.

# CHAPTER 3 BASELINE ENVIRONMENTAL SETTING

## Climate

The climate in the Ridgeville/Harleyville area of South Carolina consists of long hot summers and cool winters. Summers are warm and humid (average July high and low temperatures are 92°F and 71°F, respectively), and winters are relatively mild (average January high and low temperatures are 58°F and 35°F, respectively). In general the state has warmed by one-half to one degree (F) over the last century. However, this is increase less than that of most of the nation (USEPA 2016). Precipitation occurs chiefly as rainfall and averages about 49.5 inches per year with approximately one-third of that total occurring during the months of June, July, and August. It is expected that in the coming decades changing climate in South Carolina will lead to an increase in the number or unpleasantly hot days, an increase in heat related illness, an increase in inland flooding, a decrease in crop yields, and harm to livestock (USEPA 2016)

## Land Use

Land use within the project area is varied. The proposed route water transmission main generally follows the shoulder of Highway 178 (East Main Street) to US-78 to US 27 where it ends (Figure 1). Land Use adjacent to the project area includes a mix of residential areas, industrial areas, forested areas, and farm lands. Several named soil types exist in the project

area. The majority of soils within the project area are characterized as nearly level, well drained to very poorly drained and strongly acidic.

## Water Resources and Aquatic Habitat

The water source for this project is Lake Marion (Figure 2). Lake Marion was created through the construction of a dam on the Santee River. The Santee River is fed by the Congaree River and the Wateree Rivers. The Congaree River is fed by the Saluda/Broad Rivers with headwaters in the mountains of North Carolina. The Wateree River is fed by the Catawba River, which also has headwaters in the mountains of North Carolina. Lake Marion was completed in the 1940's as a part of a two-lake system. The largest lake, Lake Marion, is approximately 100,000 acres and the smaller lake, Lake Moultrie, is approximately 65,000 acres. The two lakes comprise one of the largest fresh water reservoirs in the southeast and have an average annual inflow of approximately 15,000 cubic feet per second.

The Santee Cooper Lake project, which began in 1933, provides more than an adequate water supply for this region of South Carolina. The first utilization of the lake for this purpose was the construction of a surface water treatment plant on Lake Moultrie in the early 1990's. A new water treatment plant was recently constructed on the Santee Cooper System during Phase II of The Lake Marion Regional Water Supply System project. There are also existing water

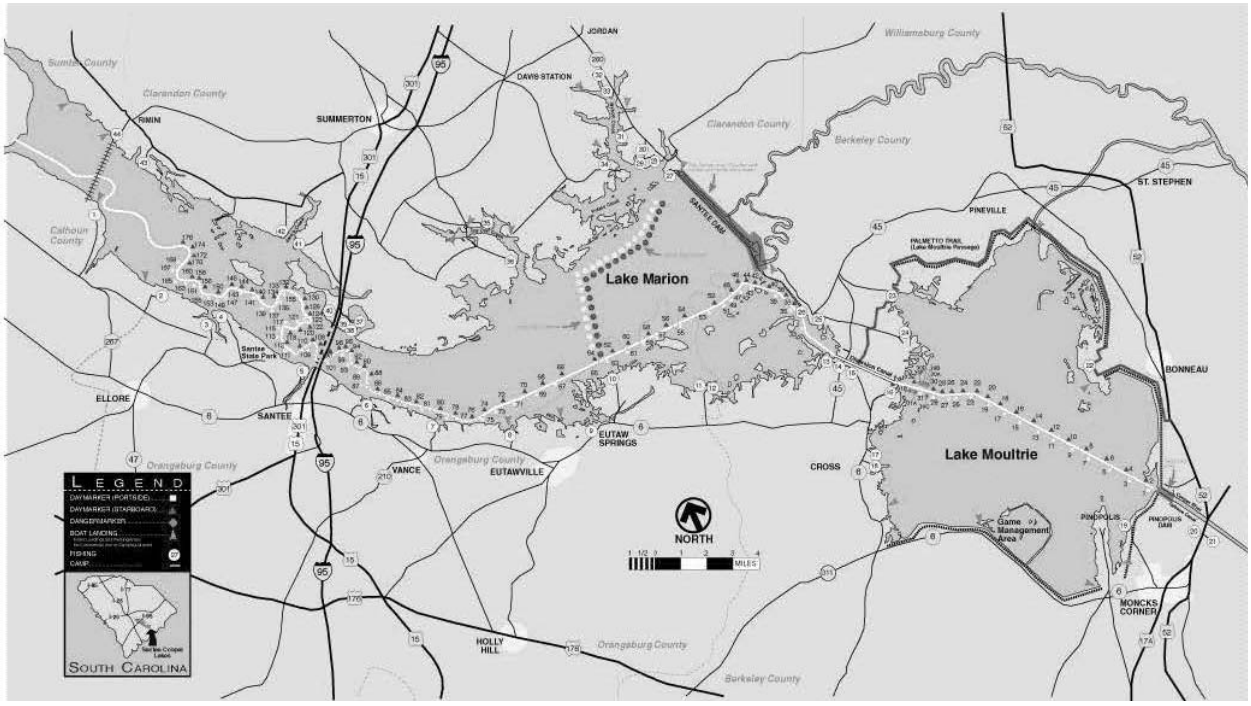


**Figure 2. Map of Santee Cooper Lakes**

treatment plants on the Wateree/Catawba River system and the Congaree/Saluda/Broad River system, upstream of the lakes. The raw water quality is excellent which results in minimal treatment costs.

The proposed project is entirely within Dorchester County. The water transmission main would cross small streams (i.e., Walnut Branch, Lang Branch), Four Hole Swamp, and other small unnamed wetlands. All small stream crossing would be carried out using the jack and boring process or directional drilling. This process involves drilling down and then across so the pipe can be placed under the stream without impacting the stream.

The project area encompasses part of Four Hole Swamp, which is a part of the Edisto River watershed. Four Hole Swamp is classified as "***FW***" (i.e., freshwater that is suitable for primary and secondary contact recreation and as a source of drinking water with a site specific classification that requires a dissolved oxygen (DO) level not less than 4.0 mg/L and pH between 5.0 and 8.5). Four Hole Swamp is monitored as part of South Carolina DHEC statewide water quality monitoring program. Water quality monitoring sites on Four Hole Swamp in the vicinity of the project area are listed as "impaired" on the State of South Carolina 303(d) list due to either high fecal coliform levels or low DO levels. Additionally, both the Edisto River and Four Hole Swamp are listed on the Nationwide River Inventory.

## Terrestrial Resources and Wildlife

There is a considerable diversity of habitat near the project area including, swamps, early to mid-successional forested areas, and open areas. Due to the diversity of habitat in and adjacent to the project area, a variety of wildlife species are expected to occur near or within the project area. Species present may include deer and small mammals (e.g., various squirrels and mice, opossum, raccoon, rabbit, fox, skunk), birds (e.g., various songbirds, ducks, and wading birds, quail, turkey doves, hawks, owls), and reptiles/amphibians (e.g., frogs, toads , lizards, snakes, turtles, alligator).

PRIME AND UNIQUE FARMLAND

Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and which is available for these uses. Prime farmland can be cropland, pastureland, range land, forest land, or other open vegetated lands, but cannot be urban built-up land or water.

Prime farmland usually has an adequate and dependable supply of moisture from precipitation. It also has favorable temperature and growing season, acceptable acidity or alkalinity. It has few or rocks and is permeable to water and air. Prime farmland is not excessively erodible or saturated with water for long periods and is not frequently flooded during the growing season. The slope ranges mainly from 0 to 6 percent.

Unique farmland is land other than prime farmland used for the production of specific high value food and other fiber crops. Unique farmlands can economically produce sustained high quality and/or high yields of a specific crop when treated and managed according to acceptable farming methods.

The U.S. Department of Agriculture, Soil Conservation Service has not classified any prime or unique farmland within the project area.

## Air Quality and Noise

The Clean Air Act (CAA), which was last significantly amended in 1990, requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The CAA established two types of national ambient air quality standards- primary and secondary. Primary standards are levels established by the EPA to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards are levels established to protect the public welfare, including protection from decreased visibility and damage to animals, crops, vegetation, and buildings.

The EPA Office of Air Quality Planning and Standards has set NAAQS for six principal pollutants which are called "criteria" pollutants. Those pollutants are Carbon Monoxide, Lead, Nitrogen Oxides, Particulate Matter ($PM_{10}$), Particulate Matter ($PM_{2.5}$), Ozone and Sulfur Dioxide. All air pollutants are listed as in attainment for Dorchester County (EPA 2012).

The project area includes a mixture of residential, industrial and commercial areas. Generally the area is not densely populated or heavily industrialized, though surface mines and other industry exist near the project area. Traffic is the predominant source of noise in the project area. Naturally occurring noises (buzzing of insects, bird calls, etc.) are also common within the project area.

## Cultural Resources

From September 28 to October 19, 2015 archaeologists with Brockington and Associates, Inc., conducted a survey of the proposed Dorchester Reach water transmission main (cover page and abstract of report are shown in Appendix A). The survey was conducted at the request of the USACE Charleston District to comply with Section 106 of the National Historic Preservation Act for the construction of the water transmission main. Archaeological survey through surface inspection and systematic shovel testing at 100-foot intervals identified five new sites and revisited one.

Brockington and Associates, Inc. also conducted an architectural reconnaissance of the proposed route of the Dorchester Reach water transmission main. Since the pipeline will be underground when complete, it presents no opportunity to affect any aboveground resources that might be eligible for the NRHP unless they have associated landscapes. An architectural historian from Brockington and Associates, Inc. conducted a reconnaissance survey along the roads adjacent to the pipeline corridor to see if such landscapes are present. A section of the project is located with the Harleysville Historic Area.

## Endangered Species

Table 1 contains a list of species that have been listed by the USFWS as occurring or possibly occurring in Dorchester County (lists last updated February 10, 2015) (USFWS 2016).

**Table 1. South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species – Dorchester County**

| CATEGORY | COMMON NAME/STATUS | SCIENTIFIC NAME | SURVEY WINDOW/ TIME PERIOD | COMMENTS |
|---|---|---|---|---|
| Amphibian | Gopher frog (ARS) | *Lithobates capito* | Breeding: October-March | Call survey: February-April |
| Bird | American wood stork (T) | *Mycteria americana* | February 15-September 1 | Nesting season |
| | Bald eagle (BGEPA) | *Haliaeetus leucocephalus* | October 1-May 15 | Nesting season |
| | Red-cockaded woodpecker (E) | *Picoides borealis* | April 1-July 31 | Nesting season |
| Crustacean | None Found | | | |
| Fish | American eel (ARS) | *Anguilla rostrata* | March 1-May 30; October 1-December 15 | Temperature dependent: normally (17-20°C); can be found between 13-25°C |
| | Atlantic sturgeon* (E) | *Acipenser oxyrinchus** | February 1-April 30 | Spawning migration |
| | Blueback herring (ARS) | *Alosa aestivalis* | Mid-January-mid May | Peak: March-April |
| | Shortnose sturgeon* (E) | *Acipenser brevirostrum** | February 1-April 30 | Spawning migration |
| Insect | None Found | | | |
| Mammal | Rafinesque's big-eared bat (ARS) | *Corynorthinus rafinesquii* | Year round | Found in mines, caves, large hollow trees, buildings, and bat towers |
| | Tri-colored bat (ARS*) | *Perimyotis subflavus* | Year round | Found in mines and caves in the winter |
| Mollusk | None Found | | | |
| Plant | American chaffseed (E) | *Schwalbea americana* | May-August | 1-2 months after a fire |
| | Bog asphodel (ARS*) | *Narthecium americanum* | June-July | |
| | Boykin's lobelia (ARS) | *Lobelia boykinii* | May-July/August | |
| | Canby's dropwort (E) | *Oxypolis canbyi* | Mid-July-September | |
| | Carolina-birds-in-a-nest (ARS) | *Macbridea caroliniana* | July-November | |
| | Carolina bishopweed (ARS) | *Ptilimnium ahlesii* | May-July | |
| | Ciliate-leaf tickseed (ARS) | *Coreopsis integrifolia* | August-November | |
| | Pondberry (E) | *Lindera melissifolia* | February-March | |
| | Raven's seedbox (ARS) | *Ludwigia ravenii* | June-October | |
| | Sun-facing coneflower (ARS) | *Rudbeckia heliopsidis* | July-September | |
| Reptile | Eastern diamondback rattlesnake (ARS) | *Crotalus adamanteus* | Most of the year | Peak: April-November |
| | Southern hognose snake (ARS) | *Heterdon simus* | Most of the year | |
| | Spotted turtle (ARS) | *Clemmys guttata* | February-mid April | |

* Contact National Marine Fisheries Service (NMFS) for more information on this species

** The U.S. Fish and Wildlife Service (FWS) and NMFS share jurisdiction of this species

ARS Species that the FWS has been petitioned to list and for which a positive 90-day finding has been issued (listing may be warranted); information is provided only for conservation actions as no Federal protections currently exist.

ARS* Species that are either former Candidate Species or are emerging conservation priority species

BGEPA Federally protected under the Bald and Golden Eagle Protection Act

C FWS or NMFS has on file sufficient information on biological vulnerability and threat(s) to support proposals to list these species

CH Critical Habitat

E Federally Endangered

P or P - CH Proposed for listing or critical habitat in the Federal Register

S/A Federally protected due to similarity of appearance to a listed species

T Federally Threatened

These lists should be used only as a guideline, not as the final authority. The lists include known occurrences and areas where the species has a high possibility of occurring. Records are updated as deemed necessary and may differ from earlier lists.

For a list of State endangered, threatened, and species of concern, please visit https://www.dnr.sc.gov/species/index.html.

## Hazardous Toxic and Radioactive Waste (HTRW)

A site inspection of the project area was conducted by USACE staff. The inspection revealed no signs of HTRW within the project area. Additionally the Environmental Protection Agency (EPA) EnviroMapper was quarried on August 05, 2016. Several businesses near the project area report to the EPA, for various categories of pollutants, but none are within the footprint of the project area.

## Socioeconomics

### Environmental Justice and Protection of Children

The goal of environmental justice is to ensure that all Americans are afforded the same degree of protection from environmental and health hazards and have equal access to the decision-making process to maintain a healthy environment in which to live, learn, and work. On February 11, 1994, President Bill Clinton issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," to focus Federal agencies' attention on the environmental and human health conditions in minority and/or low-income communities with the goal of achieving environmental justice. The Executive Order directs Federal agencies to make environmental justice part of their mission to the greatest extent practicable and permitted by law.

Executive Order 13045 requires the Protection of Children from environmental health risks and safety risks. It states that the Federal government would review the effects of its proposed actions on children, because they may suffer disproportionately from environmental health risks and safety risks. Federal agencies are to "identify and assess environmental health risks and safety risks that may disproportionately affect children;" and "ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

### Demographics

The proposed project is located entirely within Dorchester County. The proposed water transmission line passes through or is adjacent to five census block groups (450350104001, 450350103002, 450350103003, 450350103004, and 450350103005) (Figure 3). Key demographic measures for these census block groups are given in Table 2. The total population from the US Census Bureau's American Community Survey (ACS) within these census block groups is 6,939 (Table 2). The percent minority within the analyzed census block groups ranges from a low of 26% to a high of 66% (Table 2). The mean percent minority of the five census block groups is 42.4%. The percent low income within the analyzed census block groups ranges from a low of 37% to a high of 51% (Table 2). The mean percent below the poverty level within the census block groups of interest is 47%.

**Table 2. Demographic data for census tracts near the proposed water transmission main. All data is taken from the USEPA's environmental justice mapping and screening EJSCREEN. Definitions of table metrics are available online at: https://www.epa.gov/ejscreen/overview-demographic-indicators-ejscreen**

| **Blockgroup ID:** | 450350104001 | 450350103002 | 450350103003 | 450350103004 | 450350103005 |
|---|---|---|---|---|---|
| **State:** | SC | SC | SC | SC | SC |
| **Total Population (ACS):** | 2216 | 1398 | 1632 | 704 | 986 |
| **Supplementary Demographic Index:** | 26% (77%ile) | 19% (62%ile) | 24% (73%ile) | 19% (54%ile) | 22% (69%ile) |
| **% minority:** | 66% (77%ile) | 30% (52%ile) | 54% (71%ile) | 26% (42%ile) | 36% (58%ile) |
| **% low income:** | 37% (58%ile) | 50% (76%ile) | 51% (77%ile) | 49% (66%ile) | 48% (65%ile) |
| **% linguistic isolation:** | 0% (44%ile) | 0% (44%ile) | 0% (44%ile) | 0% (64%ile) | 5% (88%ile) |
| **% less than high school:** | 39% (94%ile) | 17% (68%ile) | 20% (74%ile) | 12% (45%ile) | 21% (73%ile) |
| **% under age 5:** | 2% (12%ile) | 6% (47%ile) | 3% (18%ile) | 3% (23%ile) | 4% (31%ile) |
| **% over age 64:** | 11% (40%ile) | 13% (55%ile) | 14% (58%ile) | 22% (86%ile) | 19% (78%ile) |
| **Demographic Index:** | 52% (75%ile) | 40% (63%ile) | 53% (75%ile) | 37% (54%ile) | 42% (63%ile) |

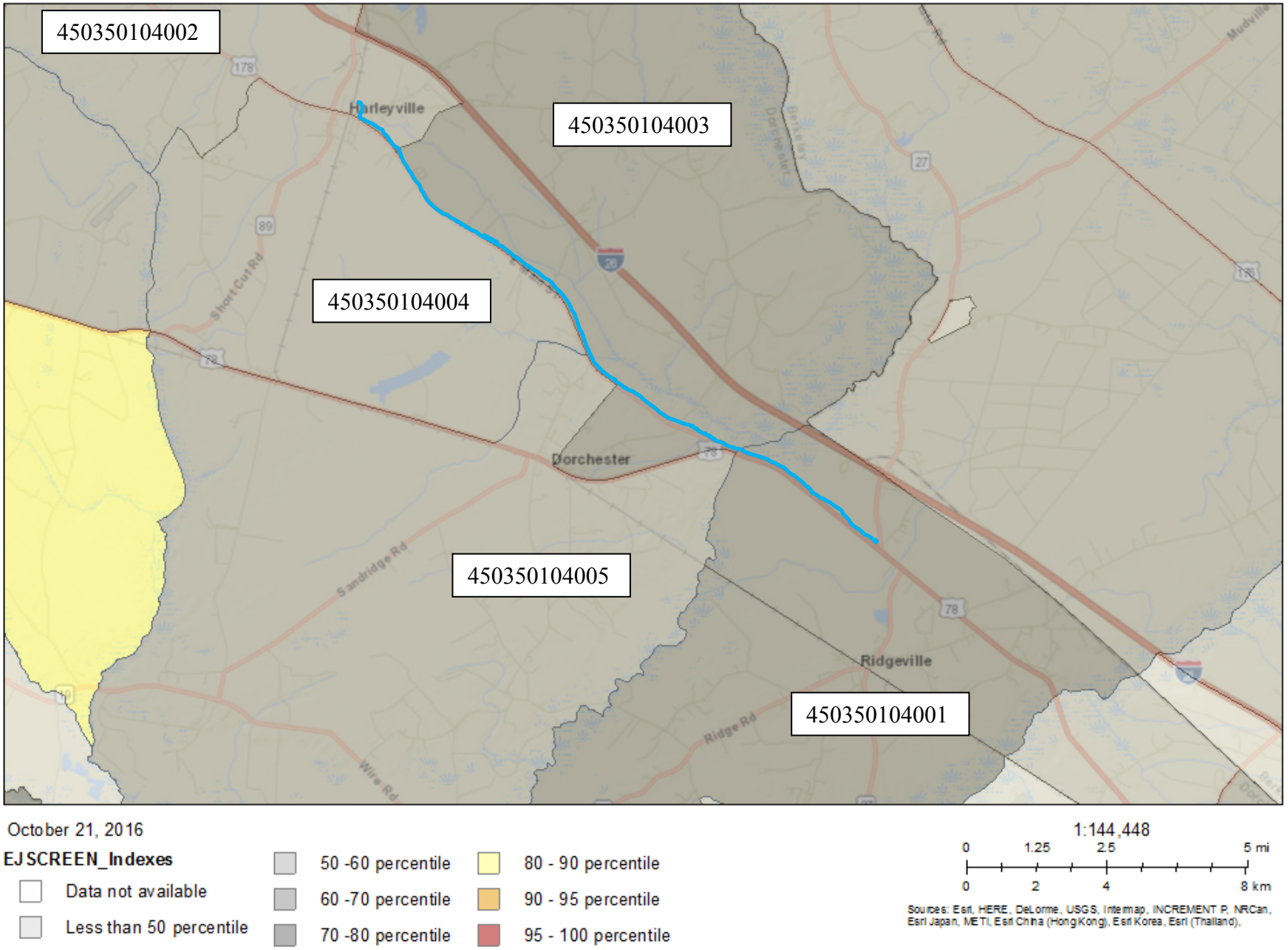


**Figure 3 Map of proposed water transmission main (blue) showing percent minority for adjacent census block groups**

# CHAPTER 4 ALTERNATIVES

## Alternative 1 (Proposed Project)

Alternative 1 (proposed project) would connect a new 16 to 20-inch potable water transmission main to an existing 16-inch water transmission main near the Town of Harleyville and extend the water transmission main to the southeast approximately 56,000 feet (10.6 miles) to a point near the Town of Ridgeville (Figure 1). The new line would terminate at the junction of US Highway 78 and SC Highway 27. From its junction with Highway 178 the water transmission main is located within Department of Transportation right of way. Parts of the directional drill temporary platforms extend beyond the Department of Transportation right of way.

Water would be supplied from an existing state of the art water treatment plant located on Lake Marion near the Town of Santee. The water treatment plant become operational in 2008 and has the capacity to support the increased water supply needs from construction of the proposed project.

## Alternative 2

Alternative 2 would provide water the corridor between Ridgeville and Harleyville by extending the Lake Moultrie System to this area. Currently Dorchester County is not member of the Lake Moultrie Water Agency.

## Alternative 3

Alternative 3 would provide water to the Ridgeville area and the surrounding areas by installing more water wells in the area. There are concerns about the increasing demand on groundwater and its effect on the capability of the aquifer to continue to produce high quality water in the area of the proposed project. These concerns have resulted in the State of South Carolina implementing a program that monitors all new groundwater wells that withdraw more than 3 million gallons per month (i.e., approximately 70 gallons/minute if operated continuously). Because of this increased demand on groundwater and the concerns about the effect on the aquifer as an additional source of potable water, groundwater is not recommended as a source of potable water for the Ridgeville area.

## No Action Alternative

The No Action Alternative is the same as the most probable future without constructing the proposed project. A basic alternative to any proposed plan of improvement is the "No Action" alternative. Adoption of this alternative implies acceptance of the existing conditions in the proposed project area.

# CHAPTER 5 ANALYSIS OF ALTERNATIVES

A number of conceptual alternatives were initially evaluated. Alternatives were evaluated based on compliance with environmental laws and regulations, compliance with executive orders,

level of environmental impacts including impacts to climate, land use, water resources and aquatic habitat, terrestrial resources and wildlife, air quality and noise, cultural resources, endangered species, hazardous toxic and radioactive waste, and socioeconomics, cost effectiveness, engineering feasibility, and the ability of the Alternative to supply water to the area. Alternative plans included, drilling additional wells, attaching to existing water supply systems at other locations and a "No-Action" alternative, which assessed both the immediate and long-term impacts to the region. Alternatives that were not feasible from an engineering standpoint, were not cost effective, were not compliant with environmental laws and regulations, were not compliant with executive orders, did not meet the water supply needs of the area, or had significant environmental impacts were not carried forward. Only one of these plans, the proposed project, was found to meet the criterial outlined above. Alternative 2 was excluded due to the increased distance of water transmission main required to transport water to the area from the Lake Moultrie System, policy/planning concerns associated with Dorchester County being added into the Lake Moultrie Agency and increased implementation cost. Alternative 3 was excluded due to concerns about the viability and quality of the continued and increased use of water wells and concerns about negative long term impacts to the aquifer. The No-Action alternative was excluded due to its failure to address the areas need for clean reliable water. Excluded alternatives were no longer considered.

# CHAPTER 6 ENVIRONMENTAL IMPACTS

## Climate

The proposed project would not cause changes to the area's climate. The proposed project would increase the climate change resiliency of the area by providing a reliable, safe source of water that is more resilient to drought or other climate related impacts than the current water supply. The proposed project would also increase the resiliency of the local aquifer and the resiliency of residents who would still depend on the aquifer for water, to climate change impacts as it would lead to a decrease in water withdrawn from the aquifer. Minimal amounts of greenhouse gases would be created during construction of the proposed project. Best management practices would be followed to reduce greenhouse gas emissions. Most areas cleared for construction would be allowed to re-vegetate and those areas would be able to sequester carbon in the future.

## Land Use

Temporary impacts to soils and erosion would potentially occur during construction and during the placement of the water transmission main. Erosion could increase in areas that require the clearing of vegetation. Best management practices would be implemented for construction including siltation fencing, hay bales, and directional boring or jack and boring under streams where appropriate. In addition the disturbed areas would be seeded and/or grassed to prevent future erosion and allowed to return to their previous conditions after installation of the water transmission main was completed. Construction of this proposed project would not change the existing geology of the area because the excavation cuts necessary to install the water transmission main is generally narrow and relatively shallow. Land use would remain largely unchanged after installation of the proposed project.

## Water Resources and Aquatic Habitat

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 would be implemented during construction activities. Remediation procedures would prevent any potential long-term impacts and degradation of water quality resulting from the proposed work. The installation and use of the water transmission main would not affect water quality, water temperature, or other parameters during the installation phase or while in use. Additionally the additional water that would be taken from Lake Marion, as a result of this project, is not expected to significantly impact the lake. 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 would not create any shortages for or otherwise adversely affect the withdrawal capabilities of other present users of the raw water supply. The proposed project would result in the placement of dredged or material into Waters of the United States. The proposed project has been determined to be consistent with the terms and conditions of Nationwide Permit Number (NWP) 12. NWP 12 authorizes work in waters of the United States required for the construction, maintenance, repair and removal of utility lines and associated facilities. The work to be conducted as part of the proposed project is within the types of activities authorized by NWP 12. The South Carolina Department of Health and Environmental Control issued a 401 Water Quality Certification and a Coastal Zone Consistency Certification with conditions for Nationwide Permit 12 on April 23, 2012. Both the Coastal Zone Consistency and the 401 Water Quality Certification General Conditions and the specific conditions for NWP 12 are applicable and would be adhered to throughout the project

**Wetlands**

The proposed route for the new water transmission line would require crossing Walnut Branch, Lang Branch, Four Hole Swamp and other smaller streams. Stream channel crossings would be constructed using directional drilling or jack and boring. Using these construction techniques would greatly reduce impacts to stream channels.

The proposed construction and placement of the pipeline would temporarily impact 1.47 acers of wetland and permanently clear 2.37 acers along the route (see Table 3). Construction in these wetlands would be by either directional drilling, jack and bore or “cut and cover” following the guidelines in USACE Nationwide Permit Number 12. Best management practices would be implemented for construction including siltation fencing, and hay bales where appropriate. After construction, the fill will be removed and the area restored to the existing grade. Permanent clearing of some of the wetlands will necessitate mitigation. In order to calculate mitigation requirements for damage to wetlands from construction of the proposed project the wetland mitigation worksheet was used (Appendix B). Based on the work sheet and data, included in Appendix B, it was determined that **23.7** wetland mitigation credits would be needed to mitigate for the wetland impacts. Mitigation for impacts to wetlands will be performed by purchasing mitigation credits from an approved source.

**Stream Crossings and Floodplains**

The placement of the proposed waterline would not affect the floodplains or topography. Directional drilling or jack and boring would be used at all stream crossings and would result in no impacts to streams from construction of the proposed project. Best management practices would be required for construction including siltation fencing and placement of hay bales where appropriate. Construction methods such as directional drilling or jack and boring would temporarily change topography; however, once the construction is complete, the topography would 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.

## Terrestrial Resources and Wildlife

The proposed project would have small but insignificant impacts on some forms of natural vegetative communities due to permanent clearing of some of the wetlands. Best management practices will be implemented to ensure the clearing process will have no impact outside the construction easement. The proposed project would have a temporary 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 other disturbed areas. These animals are accustomed to the highway traffic noise and other unnatural noises and should return after the construction activities are complete.

## Air Quality and Noise

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 would be conducted in relatively small areas at a particular point in time, air quality impacts would be localized and temporary. Upon completion of work activities in any area, air quality would be restored as construction equipment is moved away.

Implementation of the proposed project would cause temporary increase in noise levels in the areas of project construction. However, since project construction would be conducted in relatively small areas at a particular point in time, increases in noise pollution would be minimal. Upon completion of work activities in any area, noise levels would return to pre-project levels. To further reduce noise pollution construction would be limited to daylight hours in areas near dwellings.

## Table 3. Wetland Impacts

| Wetland ID Number | Affected Acres | Type of Impact | Description of Impacts | Notes |
|---|---|---|---|---|
| W-1 | 0.07 | Temporary | No permanent impact. Temporary clearing of a construction easement | All impacts are within the temporary construction easement that will be initially cleared but allowed to re-vegetate. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. |
| W-2a | 0.14 | Temporary | No permanent impact. Temporary clearing of a construction easement. | Walnut Branch stream crossing<br>All impacts are within the temporary construction easement that will be initially cleared but allowed to re-vegetate. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. |
| W-2b | 0.01 | Clearing | Permanently cleared easement. | Walnut Brach stream crossing<br>The area impacted is a fairly mature forested area. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. |
| W-3a | 0.09 | Clearing | Permanently cleared easement. | The area impacted is a fairly mature forested area. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. |
| W-3b | 0.31 | Temporary | No permanent impact. Temporary clearing of a construction easement. | All impacts are within the temporary construction easement that will be initially cleared but allowed to re-vegetate. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. |
| W-4a | 0.48 | Clearing | Permanently cleared easement. | 4-Hole Swamp (between two main stream channels)<br>The area impacted is a fairly mature forested area. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. |
| W-4b | 0.16 | Temporary | No permanent impact. Temporary clearing and temporary fill of a construction easement. | 4-Hole Swamp (between two main stream channels)<br>All impacts are within the temporary construction easement that will be initially cleared but allowed to re-vegetate. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. |
| W-5a | 0.2 | Temporary | No permanent impact. Temporary clearing and temporary fill of a construction easement. | 4-Hole Swamp (east of eastern stream channel)<br>All impacts are within the temporary construction easement that will be initially cleared but allowed to re-vegetate. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. |
| W-5b | 0.44 | Clearing | Permanently cleared easement. | 4-Hole Swamp (east of eastern stream channel) The area impacted is a fairly mature forested area. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. |
| W-6a | 0.16 | Temporary | No permanent impact. Temporary clearing and temporary fill of a construction easement. | All impacts are within the temporary construction easement that will be initially cleared but allowed to re-vegetate. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. Fill is associated with the construction of the pad for directional drilling operations. |
| W-6b | 0.34 | Clearing | Permanently cleared easement. | The area impacted is a fairly mature forested area. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade |

| | | | | |
|---|---|---|---|---|
| | | | | after construction is completed. |
| W-7a | 0.25 | Temporary | No permanent impact. Temporary clearing and temporary fill of a construction easement. | All impacts are within the temporary construction easement that will be initially cleared but allowed to re-vegetate. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. Fill is associated with the construction of the pad for directional drilling operations. |
| W-7b | 0.18 | Clearing | Permanently cleared easement. | The area impacted is a fairly mature forested area. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. |
| W8 | .05 | Clearing | Permanently cleared easement. | The area impacted is a fairly mature forested area. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. |
| W-9 | 0.48 | Clearing | Permanently cleared easement. | The area impacted is a fairly mature forested area. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. |
| W-10 | 0.3 | Clearing | Permanently cleared easement | The area impacted is a fairly mature forested area. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. |
| W-11b | 0.18 | Temporary | No permanent impact. Temporary clearing and temporary fill of a construction easement. | All impacts are within the temporary construction easement that will be initially cleared but allowed to re-vegetate. Work will be performed following the guidelines of NWP12. Area will be restored to existing grade after construction is completed. Fill is associated with the construction of the pad for directional drilling operations. |

| | |
|---|---|
| **TOTAL WETLAND ACREAGE IMPACTED:** | **~2.37 acres of fairly mature wetland forest will be permanently cleared. All impacted wetlands will be restored to original grade. Mitigation required (see Appendix B).** |
| | **~1.47 acres of wetlands will be temporarily cleared but restored to original grade and allowed to revegetate, which will result in no permanent impact. No mitigation required.** |

## Cultural Resources

Intensive survey of the route of the proposed project by Brockington and Associates, Inc., identified five new sites and revisited one (cover page and abstract of report are shown in Appendix A. The proposed water transmission main also passes through the Harleyville Historic District. Brockington and Associates, Inc. recommended three archaeological sites and the isolated find not eligible for the NRHP. At one archaeological site the water transmission main passes through a small portion of an archaeological site. However, there are no deposits or features within the water transmission main easement that would contribute to its NRHP eligibility; the project will not affect the site. The project will also not affect the Harleyville Historic District. None of these resources contains the kinds of artifact deposits or features from which we can gain important information about the past. The project as currently designed would not affect historic properties.

## Endangered Species

Based on site inspections of the project area conducted by Corps staff, the Corps has determined that the proposed project would not have significant impacts to listed species. During site inspections, no suitable habitat for listed species was observed nor were any listed species observed. The project is within the range of several of the species listed in Table 1; however, the Corps has determined that these species and appropriate habitat for them are not present with the project area and therefore there will be no effect to listed species. This determination has been coordinated with the USFWS via consultation on this document and correspondence with the USFWS is attached in the Comments appendix.

## Hazardous Toxic and Radioactive Waste

There are no known HTRW sites within the immediate vicinity of the treatment plant or any of the transmission lines. No hazardous toxic or radioactive waste would be generated as a result of installation or operation of the proposed project.

## Socioeconomics

According to Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, each federal agency must conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, national origin, or income level. Agencies must ensure that disproportionately adverse effects are not being imposed on minority or low-income areas by federal actions.

The area of impact from the proposed project does not contain disproportionate populations of minority, juvenile, elderly, or low-income communities when compared to the surrounding area. Residence adjacent to the proposed project are generally low density and away from the road.

No significant construction or operation impacts to the human environment are expected from construction of the proposed project. The project may have short term minor impacts to noise and air quality during construction; however, impacts to air quality will be temporary and will not pose a risk to human health. Noise will be kept to a minimum by conducting construction activities during daylight hours. During construction short sections of highway will be closed where construction is occurring. These closures would be temporary and limited to one lane of traffic. No long term impacts to traffic patterns would occur as a result of construction of the proposed project in the area. Therefore, populations of minority, juvenile, elderly, or low-income families would not be disproportionately affected by the proposed deepening. Schools/childcare facilities and hospitals are not disproportionately located near the proposed project, so disproportionate impacts to children are not expected.

The proposed 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. This project will provide safe drinking water to all residents on an equal basis and will reduce the dependence on groundwater in the future. Implementation of the proposed project would cause no significant adverse environmental impacts to any of the residents in Orangeburg County, Dorchester County, or surrounding counties regardless of race, national origin, or level of income of residents. Disproportionate adverse effects to minority or low-income individuals would not occur. In all, the Corps has determined that in the absence of adverse impacts to human health, environmental health risks, and safety risk, this project will have no significant or disproportional negative impacts to any communities, including environmental justice communities or children. Therefore, the Corps has satisfied the requirements of the Environmental Justice Executive Order 12898.

# CHAPTER 7 CUMULATIVE IMPACTS

Cumulative impacts are defined under section 1508.7 of NEPA as:

> "…the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time."

The following paragraphs summarize the cumulative impacts expected from the proposed project.

Present and future development in and around the project area is controlled by management measures including control of floodplain development by zoning ordinances, subdivision regulations, and building codes. Future development in the area would be in compliance with the above listed management measures, minimizing impacts to the environment. Given current growth trends the area is expected to experience population growth and additional development.

This growth is likely to occur with or without construction of the proposed project. However construction of the water line would create a water source for the area that is more resilient to climate change. The Lake Marion Regional Water System, which the proposed project would be a part of, has the capacity to meet the current and anticipated future water supply needs of the area. 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 provide water for the expected population growth in the service area.

The impacts of the proposed project, when considered along with past, present and future actions, are cumulatively insignificant. The overall lack of impacts associated with the proposed project, as documented here, demonstrates both the benign nature and limited impacts of this project. No negative impacts would occur from implementation of the selected alternative, as it would maintain the status quo. Continued positive impacts to recreation would occur with construction of the preferred alternative. Any impacts associated with the proposed project, when added to other past, present and reasonable foreseeable future actions are collectively insignificant.

# CHAPTER 8 PUBLIC INVOLVEMENT AND COORDINATION

Executive Order 12372, Intergovernmental Review of Federal Programs, states that Federal agencies shall provide opportunities for consultation by elected officials of those State and local governments that would provide the non-federal funds for or that would be directly affected by, proposed Federal financial assistance or direct Federal development. The proposed project is being coordinated with Federal, State, and local government agencies having jurisdictional responsibilities, or otherwise having an interest in the project. A list of all parties that received a notice via mail of the issuance of the Draft EA and FONSI are attached in Appendix C. All comments received are included in Appendix D and responses have been incorporated into the Final EA.

# CHAPTER 9 COMPLIANCE WITH OTHER ENVIRONMENTAL LAWS

## Clean Water Act

The proposed project would result in the temporary placement of dredged or fill material into Waters of the United States. The proposed project has been determined to be consistent with the terms and conditions of Nationwide Permit Number (NWP) 12. NWP 12 authorizes work in waters of the United States required for the construction, maintenance, repair and removal of utility lines and associated facilities. The work to be conducted as part of the proposed project is within the types of activities authorized by NWP 12. The South Carolina Department of Health and Environmental Control issued a 401 Water Quality Certification and a Coastal Zone Consistency Certification with conditions for Nationwide Permit 12 on April 23, 2012. Both the

Coastal Zone Consistency and the 401 Water Quality Certification General Conditions and the specific conditions for NWP 12 are applicable and would be adhered to throughout the project.

A National Pollutant Discharge Elimination System (NPDES) permit is required for this project. Construction activities such as clearing, grading, excavating, grubbing, or filling will result in the disturbance of more than one acre of land. A storm water pollution prevention plan (SWPPP) has been prepared for the project and incorporated into the plans and specifications and will be implemented during construction. Also, to obtain coverage under a general permit for South Carolina, a Notice of Intent (NOI) application has been sent to the state. A Notice of termination will be provided when the project is completed.

## Clean Air Act

The proposed project has been analyzed for conformity applicability pursuant to regulations implementing Section 176(c) of the Clean Air Act. It has been determined that the activities proposed under the proposed project are exempt by 40 C.F.R. Part 93.153.

## Endangered Species Act

The requirements of Section 7 of the Endangered Species Act (ESA) of 1973 have been fulfilled. Project Documentation has been provided to the USFWS for their review and comment and they have concurred with the Corps ESA determinations.

## Farmland Protection Policy Act

The Farmland Protection Act minimizes the unnecessary and irreversible conversion of farmland to nonagricultural uses. There is no "farmland," as defined by this Act, impacted by any of the recommended alternatives.

The project involves the construction of water transmission main 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. No unnecessary and irreversible conversion of farmlands would occur as a result of construction of the proposed project.

## Fish and Wildlife Coordination Act

The alternatives have been provided to the USFWS, in order to fulfill the requirements of the Fish and Wildlife Coordination Act. A Fish and Wildlife Coordination Act report is not considered necessary for this project.

## Floodplain Management (EO 11988)

The objectives of Executive Order 11988 have been considered in the formulation of plans for this project. The following determinations have been made in response to requirements of Executive Order 11988 which pertains to floodplain management.

No practical non-floodplain alternative exists. The considered actions do not conflict with applicable state and local standards concerning floodplain protection. The considered action will not significantly affect the natural and beneficial values of the floodplain.

## Protection of Wetlands (EO 11990)

The objectives of Executive Order 11990 have been considered in the formulation of plans for this project. The following determinations have been made in response to requirements of Executive Order 11990 which pertains to wetland management.

No practical non-wetland alternative exists. The considered actions do not conflict with applicable state and local standards concerning wetland protection and permitting and are covered under USACE NWP 12. The proposed project will not significantly affect the natural and beneficial values of the impacted wetlands as, where possible, areas will be allowed to return to a natural state after installation of the water transmission main and no wetlands will be permanently filled. The proposed project has avoided and minimized wetland impacts where possible. All permanent impacts will be mitigated for to ensure no net loss of wetlands.

## Environmental Justice in Minority Populations and low-Income Populations (EO 12898)

The objectives of Executive Order 12898 have been considered in the formulation of plans for this project. The following determinations have been made in response to requirements of Executive Order 12898 which pertains to environmental justice.

The Corps has determined that in the absence of adverse impacts to human health, environmental health risks, and safety risk, this project will have no significant or disproportional negative impacts to any communities, including environmental justice communities or children.

## National Wild and Scenic Rivers

The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. 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.

## National Historic Preservation Act (NHPA)

The proposed project has been reviewed for historic properties (cultural resources listed on or eligible for listing on, the National Register of Historic Places) pursuant to regulations implementing Section 106 of the National Historic Preservation Act (NHPA). In accordance with 36 C.F.R. §800.4(d)(1), it was determined that there will be no effect to historic properties and documentation of this determination has been provided to the South Carolina State Historic Preservation Officer. Therefore, in accordance with 36 C.F.R. §800.4(d)(1)(i), the Corps' responsibilities under Section 106 of the NHPA have been fulfilled.

## Coastal Zone Management Act

Dorchester County is part of the 9 counties in South Carolina under the jurisdiction of the Federal Coastal Zone Management Act and the South Carolina Coastal Zone Management Program (SCCZMP). A Coastal Zone Consistency Certification (CZCC) has been applied for and construction will not commence until the certification is issued. There are no technical concerns from construction of the proposed project that would impact the issuance of a CZCC.

# CHAPTER 10 REFERENCES


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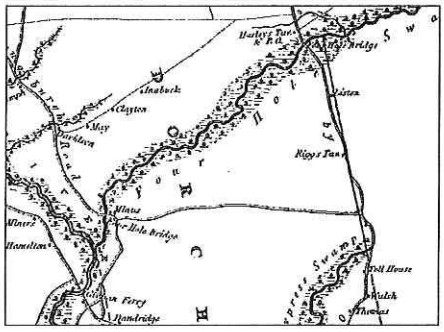
# APPENDIX A

## Cultural Resources Report

# Cultural Resources Survey of the Proposed Dorchester Orangeburg Reach Water Transmission Main

**Dorchester and Orangeburg Counties, South Carolina**



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# APPENDIX B

## Wetland Mitigation Worksheet

## Wetland Mitigation Factor Scoring Definitions

| FACTORS | | OPTIONS | | | | |
|---|---|---|---|---|---|---|
| Type of Wetland Lost | Type | Type C (Type C wetlands include the following: man-made lakes and ponds; impoundments; vegetated lake littoral; and shallow cove areas) | Type B (Type B wetlands include the following: seeps and bogs; depressions; savannahs and flatwoods; and pocosins and bays) | Type A (Type A wetlands include the following: tidal vegetated systems; shallow subtidal bottoms; riverine systems including headwaters and riparian zones; bottomland hardwoods; and intertidal flats) | | |
| | Score | 0.2 | 2.0 | 3.0 | | |
| Wetland Priority Category | Category | Tertiary (Tertiary priority areas include the following categories of aquatic systems that do not fall into the designated primary priority category: bald cypress-tupelo gum swamp; non-alluvial swamp forest; swamp tupelo pond; pond pine woodland; pocosin (other than seepage or swale); pine flatwoods; and bottomland hardwood) | Secondary (Secondary priority areas include the following categories of vulnerable or uncommon aquatic systems that do not fall into the designated primary priority category: Carolina bay; swale pocosin; high elevation seep; pond cypress pond; bay forest; seepage pocosin; salt shrub thicket; upland depression swamp forest; and waters on the 303(d) list.) | Primary (Primary priority areas include the following: National Estuarine Sanctuaries; anadromous fish spawning waters; Wild and Scenic Rivers; State Heritage Trust Preserves; designated shellfish grounds; National Wildlife Refuges; Outstanding Resource Waters; waters officially designated by State or Federal agencies as high priority areas; Essential Fish Habitat; trout waters; old growth climax communities that have unique habitat structural complexity likely to support rare communities of plants or animals; all tidal waters; and rare aquatic systems (i.e.,: hillside herb bog, piedmont seepage forest, upland bog, limestone sink, Atlantic white cedar bog, pine savannah, depression meadow, and interdune pond)) | | |
| | Score | 0.5 | 1.5 | 2.0 | | |
| Existing Wetland Condition | Condition | Very Impaired (Site disturbances have resulted in the loss of most functions typically attributed to the aquatic resource type and functional recovery would require a significant restoration effort. Examples include: filled areas, excavated areas, or effectively drained wetlands (hydrology removed or significantly altered)) | Impaired (Site disturbances have resulted in the loss of one or more functions typically attributed to the aquatic resource type and functional recovery is unlikely to occur through natural processes. Restoration activities are required to facilitate recovery. Examples include: areas that have been impacted by surface drainage and converted to pine monoculture or agriculture, areas that are severely fragmented, or wetlands within maintained utility corridors) | Partially Impaired (Site disturbances have resulted in partial or full loss of one or more functions typically attributed to the aquatic resource type but functional recovery is expected to occur through natural processes. Examples include: clear-cut wetlands, aquatic areas with ditches that impair but do not eliminate wetland hydrology, or temporarily cleared utility corridors) | Fully Functional (Typical suite of functions attributed to the aquatic resource type are functioning naturally. Existing disturbances do not substantially alter important functions. Examples include: pristine (undisturbed) wetlands, aquatic resources with nonfunctional ditches or old logging ruts with no effective drainage, or minor selective cutting) | |
| | Score | 0.1 | 1.0 | 2.0 | 2.5 | |
| Duration of Impact | Duration | 0 to 1 year | 1 to 3 years | 3 to 5 years | 5 to 10 years | Over 10 years |
| | Score | 0.2 | 0.5 | 1.0 | 1.5 | 2.0 |
| Dominant Type of Impact* | Impact | Shade (shelter or screen by intercepting radiated light or heat. Examples of projects causing shading impacts include bridges, piers, and buildings on pilings) | Clear (remove vegetation without disturbing the existing topography of the soils) | Drain (ditching, channelization, or excavation that results in the removal of water from an aquatic area causing the area, or a portion of the aquatic area, to change over time to a non-aquatic area or a different type of aquatic area) | Dredge (dig, gather, pull out, or excavate from waters of the United States) | Impound/Flood (collect or confine the flow of a riverine system by means of a dike, embankment, or other man made barrier. Impoundments may result in the formation of ponds, lakes, reservoirs, detention basins, etc, or they may limit the reach of high waters, such as levees or flood dikes) | Fill (depositing material used for the primary purpose of replacing an aquatic resource with dry land or changing the bottom elevation of a water body or wetland) |
| | Score | 0.2 | 1.0 | 2.0 | 2.5 | 2.5 | 3.0 |
| Cumulative Impact | Acres Impacted | < 0.25 acre | 0.25 to 0.99 acre | 1.0 to 2.99 acres | 3.0 to 9.99 acres | ≥ 10.0 acres | |
| | Score | 0.1 | 0.2 | 0.5 | 1.0 | 2.0 | |

** Multiple impacts may occur with the project. For example, the construction of a recreational pond may include both fill impacts for the construction of the embankment and impound/;flood impacts associated with impounding water for the pond itself.*

*Cumulative Impact: defined by the National Environmental Policy Act as the impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. The total acreage of permanent and temporary wetland impacts are added together to determine the value (0.1 -2.0) of the cumulative impact factor for a proposed project. The same value is used to calculate the required mitigation credits for each adverse impact associated with the proposed project.*

*Existing Condition: the degree of disturbance relative to the ability of a site to perform its physical, chemical, and biological functions. This factor evaluates site disturbances relative to the existing functional state of the system.*

*Duration: the length of time the adverse impacts are expected to last. For example, if a forested wetland is cleared to construct a temporary access road it will take more than 10 years for a similar forested canopy to develop*

| **Wetland Mitigation Credit Calculation** | | |
|---|---|---|
| **Factor** | | **Widening Existing Cleared Corridor Areas** |
| Type of Wetland Lost | Type | Type A |
| | Score (see above) | 3.0 |
| Wetland Priority Category | Category | Secondary |
| | Score (see above) | 1.5 |
| Existing Wetland Condition | Condition | Partially Impaired |
| | Score (see above) | 2.0 |
| Duration of Impact | Duration | Over 10 Years |
| | Score (see above) | 2.0 |
| Dominant Type of Impact | Impact | Clear |
| | Score (see above) | 1.0 |
| Cumulative Impact | Acres | 1.0 to 2.99 acres |
| | Score (see above) | 0.5 |
| Sum of Factors (S) | | 10.0 |
| Actual Acres Impacted (A) | | 2.37 acres |
| Required Credits (S x A) | | 23.7 |
| **Total Mitigation Credits Required** | | **23.7 credits** |
| | | |

# APPENDIX C

## List of Addresses for EA and Draft FONSI

## List of Addressees for Draft EA and FONSI

| | |
|---|---|
| Berkeley County Supervisor | Berkeley County Water and Sewer |
| Calhoun County Council | Calhoun County Administrator |
| Dorchester County Administrator | Dorchester County Council |
| Orangeburg County Council Member | Orangeburg County Council |
| Waste Water Manager Town of Santee | Mayor Town of Santee |
| National Marine Fisheries Services | Water Quality Cert. and Wetlands Section<br>SC Dept. of Health and Env. Control |
| Environmental Programs, SC Depart of Natural Resources | SC Office of Ocean and Coastal Resource Management |
| US Environmental Protection Agency | South Carolina Department of Commerce |
| SC Department of Archives & History | Bureau of Air Qualit - DAAIR<br>SC Dept. of Health and Env. Control |
| Environmental Review Program Manager<br>SC Depart of Natural Resources | Bureau of Water<br>SC Dept. of Health and Env. Control |
| Office of Ocean and Coastal Resource Management | US Fish and Wildlife Service |
| Berkeley-Charleston-Dorchester COG | Audubon South Carolina |
| SC Department of Transportation | SC Coastal Conservation League |
| U.S. House of Representatives | SC Nature Conservancy |
| South Carolina Sierra Club | United States Senate |
| South Carolina Wildlife Federation | Kialegee Tribal Town |
| Catawba Indian Nation | Muscogee (Creek) Nation |
| Poarch Band of Creek Indians | Thlopthlocco Tribal Town |
| The Chickasaw Nation | Shawnee Tribe |
| Seminole Tribe of Florida | Cherokee Nation |
| Tuscarora Nation of New York | United Keetoowah Band of Cherokee Indians |
| The Eastern Band of the Cherokee | Alabama-Quassarte Tribal Town |
| Absentee-Shawnee Tribe of Indians of Oklahoma | Eastern Shawnee Tribe of Oklahoma |

# APPENDIX D

## Comments

dhec
Healthy People. Healthy Communities.

October 10, 2016

Diane C. Perkins
Chief, Planning and Environmental Branch
Department of the Army
U.S. Army Corps of Engineers, Charleston District
69 A Hagood Avenue
Charleston, SC 29403-5107

Re: Dorchester County Reach Water Transmission Main

Dear Ms. Perkins:

On September 29, 2016 we received your letter, dated September 23, 2016, along with the Draft Finding of No Significant Impact for the proposed water transmission main from the Town of Harleyville to the Town of Ridgeville, Dorchester County, SC. *Based on the information provided, I am responding on behalf of the South Carolina Department of Health and Environmental Control, Bureau of Air Quality (Bureau).*

The Bureau is tasked with implementing the Federal Clean Air Act (1990, as amended) in the State of South Carolina. The Bureau is required to ensure compliance with the National Ambient Air Quality Standards (NAAQS) for criteria pollutants. Currently two criteria pollutants are of particular concern in South Carolina:

- **Ozone** – The 2015 8-hour primary and secondary standards of 70 parts per billion (ppb) were finalized on October 26, 2015. The area represented in this proposal is currently meeting the 2015 ozone standards. Designations for these standards are anticipated in October 2017.

- **Particulate Matter 2.5** (Particulates 2.5 microns in size and smaller) – The 2012 standard for maximum daily concentration is set at 35 micrograms per cubic meter. The 2012 standard for the maximum annual concentration is set at 12 micrograms per cubic meter. The area represented in this proposal is meeting the 2012 particulate matter 2.5 standards.

South Carolina is currently attaining all of the NAAQS, but may face nonattainment when designations for the new ozone standards are made. If a project is located in a nonattainment area, it may be subject to prescriptive requirements such as Transportation Conformity or air quality modeling.

An asbestos survey and project license may be required prior to any demolition activities such as deconstruction of a building or removal of structures in the right-of-way of a road project. If you have any questions regarding asbestos regulatory applicability you may contact Robin Mack (with the Bureau's Asbestos Section) at (803) 898-4270 or mackrs@dhec.sc.gov.

All necessary environmental permits for the subject project must be obtained in accordance with applicable state and federal regulations. If you have not already done so, please contact the Bureau of Water at (803) 898-4300 and the Bureau of Land and Waste Management at (803) 898-2000 for input regarding those program areas' assessments of this proposed project.

Emissions from diesel equipment are regulated by federal standards. The Bureau would like to offer the following suggestions on how this project can help us stay in compliance with the NAAQS. More importantly, these strategies are beneficial to the health of citizens of South Carolina.

- Utilize alternatively fueled equipment.
- Utilize emission controls applicable to your equipment.
- Reduce idling time on equipment.
- Fugitive dust emissions should be minimized through good operating practices.

The Bureau can provide model clean construction contract language. A vendor may need to retrofit, repower or replace older and more polluting diesel construction equipment in order to satisfy clean construction requirements. These types of projects can be financed with Congestion Mitigation and Air Quality (CMAQ) funds, and are in fact a high priority for CMAQ funding. Please contact our office if assistance is needed.

Thank you for the opportunity to comment on this project. Should you have any further questions or comments concerning this matter, please do not hesitate to contact me at (803) 898-4122 or at robertln@dhec.sc.gov.

Sincerely,

L. Nelson Roberts, Jr., Manager
Air Programs Implementation and Mobile Sources Section
Bureau of Air Quality

cc: Wendy Boswell, Lowcountry EQC McMillan Office boswelwm@dhec.sc.gov

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
http://sero.nmfs.noaa.gov

October 17, 2016

(Sent via Electronic Mail)

Lt. Colonel Matthew Luzzatto, District Engineer
USACE Charleston District
69A Hagood Avenue
Charleston, South Carolina 29403-5107

Dear Colonel Luzzatto:

NOAA's National Marine Fisheries Service (NMFS) reviewed the project described in the public notice(s) listed below.

Based on the information in the public notice(s), the proposed project(s) would ***NOT*** occur in the vicinity of essential fish habitat (EFH) designated by the South Atlantic Fishery Management Council or NMFS. We also anticipate that any adverse effects that might occur from the project(s) to NOAA trust resources would be minimal. Consequently, NMFS offers no EFH conservation recommendations pursuant to the Magnuson-Stevens Fishery Conservation and Management Act and no recommendations under the Fish and Wildlife Coordination Act.

*Draft Finding of No Significant Impact – Dorchester Reach Water Transmission Main*

Please note these comments do not satisfy your consultation responsibilities under section 7 of the Endangered Species Act of 1973, as amended. If the activity "may effect" listed species or critical habitat that are under the purview of NMFS, consultation should be initiated with our Protected Resources Division at the letterhead address.

Sincerely,

Pace Wilber for

Virginia M. Fay
Assistant Regional Administrator
Habitat Conservation Division

**Draft Environmental Assessment (EA)/Finding of No Significant Impact (FONSI)**

**For**

**Lake Marion Regional Water Agency Water Transmission**

**US Environmental Protection Agency (EPA)**

**Oct 7, 2016**

**Purpose and Need (Chapter 2):**

- The EPA is concerned that the stated purpose does not describe the rationale and reasons for the project or establish the unmet needs that the project will fulfil (page 3). For example, the USACE does not describe the project area's service area other than to say that "The line will serve as either a backup water source or future primary water source for Camp Hall Industrial Campus and provide water to a residential subdivision being developed along the route of the proposed water transmission main." Additionally, the USACE does not describe population growth or projected drought conditions that might necessitate the need for additional water.

  Recommendation: The EPA recommends the USACE better describe the unmet needs that the project will meet. This could be done by better describing and quantifying the service area of the project area (number of residences and businesses serviced) as well as other discussing other conditions that might substantiate the need for the project.

**Baseline Environmental Setting (Chapter 3):**

- Climate Change: On page 3, the USACE discusses the current climate condition in the Affected Environment section, but there is no mention of climate change within this section. Given the project area's sensitivity to changes in water quality and quantity and the inherent dynamics of a changing climate, the EPA is concerned that the USACE hasn't disclosed future climate conditions related to the project. Additionally, The EPA notes the recent publication of the Council on Environmental Quality's (CEQ) "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews" (August 1, 2016). Specifically, this new guidance addresses climate change and the affected environment within EAs and EISs and states,

  > *An agency should identify the affected environment to provide a basis for comparing the current and the future state of the environment as affected by the proposed action or its reasonable alternatives. The current and projected future state of the environment without the proposed action (i.e., the no action alternative) represents the reasonably foreseeable affected environment, and this should be described based on authoritative climate change reports, which often project at least two possible future scenarios. The temporal bounds for the state of the environment are*

*determined by the projected initiation of implementation and the expected life of the proposed action and its effects. Agencies should remain aware of the evolving body of scientific information as more refined estimates of the impacts of climate change, both globally and at a localized level, become available.* (page 21)

Recommendation: The EPA recommends the USACE refer to CEQ's "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews" and better explain the reasonable foreseeable future climate changes as it relates to the proposed project in the Affected Environment.

- Environmental Justice: On page 7, the USACE has displayed Table 2 that indicates the US Census Bureau's 2010 statistical data for Ridgeville, SC. However, there is no discussion regarding the table or other socioeconomic baseline conditions of the proposed project. The EPA notes that there is no discussion of environmental justice nor does the USACE disclose or identify any potential EJ communities. The EPA is concerned that the USACE has not adequately addressed requirements as outlined in Executive Order (EO) 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (February 11, 1994). The CEQ has also developed guidance ("Environmental Justice: Guidance under the National Environmental Policy Act, December 1997) that instructs federal agencies to identify potential EJ communities within the affected environment of an EA or EIS as noted below:

  *In order to determine whether a proposed action is likely to have disproportionately high and adverse human health or environmental effects on low-income populations, minority populations, or Indian tribes, agencies should identify a geographic scale for which they will obtain demographic information on the potential impact area*. (page 14)

  Table 2 indicates that 60.4% of the population is minority, but the USACE does not identify these potential EJ communities in relationship to the project area.

  Recommendation: The EPA recommends the USACE identify potential EJ communities near or within the project area to better disclose and determine any potential impacts.

**Alternative Analysis (Chapter 4):** The USACE states, "a number of conceptual plans were initially evaluated based on established criteria that considered engineering feasibility, cost effectiveness, environmental impacts, and socioeconomic benefits. Alternative plans included, drilling additional wells, attaching to existing water supply systems at other locations and a 'No-Action' alternative, which assessed both the immediate and long-term impacts to the region." The EPA is concerned the USACE did not disclose the rationale for their alternative selection. For example, the USACE discusses "established criteria", but does not disclose these criteria within the EA.

Recommendation: The EPA recommends the USACE elaborate on the criteria used for alternative selection, provide more detail on their rational for alternative selection and provide more detail regarding their alternatives analysis.

**Environmental Impacts (Chapter 6):**

- Water Quality: On page 9, the USACE states, "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." Does the USACE have a 401 water quality certification from the state of South Carolina (SC) that certifies the project will meet water quality standards? The EPA is concerned that the USACE has not received a water quality certification (as required by section 401 of the Clean Water Act (CWA)) that verifies the project is consistent with state water quality standards.

  Recommendation: The EPA recommends the USACE document that they have received a 401 certification from the state of SC in the Final EA and FONSI.

- Endangered Species: On page 13, the USACE discusses their no effect determination regarding impacts to threatened and endangered species and states the "determination is being coordinated with the USFWS via consultation on this document.

  Recommendation: The EPA recommends the USACE provide documentation regarding consultation whether informal or formal within the Final EA.

- Socioeconomics: On page 14, the USACE discusses Environmental Justice (EJ) and asserts that the project will not have any disproportionate adverse effects to minority or low-income individuals. However, the USACE did not adequately disclose and identify EJ communities within the project area (see above comment). The EPA is concerned that the USACE did not adequately disclose impacts associated with construction activities of the proposed project. These construction activities could produce adverse noise, air quality and traffic impacts to EJ communities close to the project area and these potential impacts have not been disclosed within the EA.

  Recommendation: The EPA recommends the USACE disclose any potential impacts (i.e., construction related activities) to EJ communities within the Final EA.

- Climate Change: The EPA notes that the USACE does not discuss the project impacts in terms of climate change either in terms of resiliency or impacts. As discussed in the above comment, the EPA notes CEQ's recent guidance "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews" (August 1, 2016), which states,

> *The analysis of climate change impacts should focus on those aspects of the human environment that are impacted by both the proposed action and climate change. Climate change can make a resource, ecosystem, human community, or structure more susceptible to many types of impacts and lessen its resilience to other environmental impacts apart from climate change. This increase in vulnerability can exacerbate the effects of the proposed action.*

The EPA also notes that there was no greenhouse gas analysis or discussion as outlined in the CEQ guidance (see below).

> *As discussed in this guidance, when addressing climate change agencies should consider: (1) The potential effects of a proposed action on climate change as indicated by assessing GHG emissions (e.g., to include, where applicable, carbon sequestration); and, (2) The effects of climate change on a proposed action and its environmental impacts.* (page 4)

Recommendation: The EPA recommends the USACE discuss the proposed project's climate change impacts in terms of impacts to the climate (i.e., GHG) and any resiliency and adaptation measures as recommended by CEQ's "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews".

**Cumulative Impacts (Chapter 7):**

- On page 14, the USACE states, "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 provide water for the expected population growth in the service area." The EPA is concerned that the USACE hasn't disclosed the population growth that would necessitate the need for additional water. The EPA is also concerned that the USACE has not explained the cumulative impacts of this project in relationship with other water infrastructure projects (past, present and reasonably foreseeable) that could possibly impact Lake Marion.

  Recommendation: In the Final EA, the EPA recommends the USACE better explain cumulative impacts by disclosing projected population growth trends and better describing cumulative impacts in terms of other water infrastructure projects or other environmental demands related to Lake Marion (past, present and reasonably foreseeable).

**Compliance with other Environmental Laws (Chapter 9):**

- On page 15, the USACE discusses National Pollutant Discharge Elimination System (NPDES) permits required for the proposed project under the title of "Clean Water Act"; however, there is no mention of complying with Section 401 of the CWA. As discussed in a previous comment, the EPA is concerned that the USACE has not received a water quality standards certification in accordance with section 401 of the CWA.

Recommendation: The EPA recommends the USACE provide documentation of receiving a 401 water quality standards certification in the Final EA.

- The EPA notes that there is no mention of compliance with EO 12898 within this Chapter of the EA. As previously noted, the EPA is concerned with the lack of analysis regarding impacts to EJ communities.

  Recommendation: The EPA recommends the USACE describe their compliance efforts with EO 12898 within Chapter 9 (Compliance with Other Environmental Laws) in the Final EA.

South Carolina Department of
# Natural Resources

PO Box 12559
Charleston, SC 29422
843.953.9003 Office
843.953.9399 Fax
Daviss@dnr.sc.gov

Alvin A. Taylor
Director
Robert D. Perry
Director, Office of
Environmental Programs

October 24, 2016

Ms. Diane C. Perkins, AICP
Chief, Planning & Environmental Branch
U. S. Army Corps of Engineers
69-A Hagood Avenue
Charleston, SC 29403-5107

Re: Draft Environmental Assessment (DEA) for the Dorchester Reach Water Transmission Main, Dorchester County

Dear Ms. Perkins:

Personnel with the South Carolina Department of Natural Resources have reviewed the DEA for the above referenced project and offer the following comments.

After a thorough review, our department finds the submitted DEA sufficient in addressing the full range of potential environmental impacts associated with the proposed project. We concur that the proposed project will not result in significant impacts to natural resources. We would, however, recommend that the Final EA include compensatory mitigation for all temporary impacts and that temporary structures (barge mats) be used in lieu of fill for directional drilling support when feasible.

Sincerely,

Susan F. Davis
Coastal Environmental Coordinator

803-896-6181

edale@scdah.sc.gov

United States Department of the Interior

FISH AND WILDLIFE SERVICE
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

October 26, 2016

Ms. Diane Perkins, AICP
Chief, Planning and Environmental Branch
U.S. Army Corps of Engineers, Charleston District
69A Hagood Avenue
Charleston, SC 29403-5107

Attn: Ms. Jesse Helton

Re: Draft Environmental Assessment and Draft Finding of No Significant Impact, Dorchester Reach Water Transmission Main, Dorchester County, South Carolina
FWS Log No. 2016-I-0704

Dear Ms. Perkins:

The U.S. Fish and Wildlife Service (Service) has reviewed the Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact, dated September 2016, for the above-referenced project. The U.S. Army Corps of Engineers, Charleston District (the Corps), is proposing to construct a water transmission main in Dorchester County, South Carolina. The Corps is working in cooperation with the Lake Marion Regional Water Agency, Santee-Cooper, and Dorchester County to extend the Lake Marion Regional Water System by construction of the new water main. The Corps' participation on the project is under authority of the Water Resources Development Act of 1992 (Public Law 102-580), which authorizes the Corps to provide assistance to non-Federal interests with water-related environmental infrastructure projects. The Corps is seeking a Nationwide Permit 12 (NWP 12) to clear and/or place fill material in jurisdictional freshwater wetlands. This report is submitted in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*), and Section 7 of the Endangered Species Act of 1973 as amended (16 U.S.C. 1531-1543) (ESA).

The proposed work consists of constructing an extension to an existing 16-inch potable water transmission main in the Town of Harleyville. The proposed extension is approximately 56,000 feet in length (10.6 miles) and would terminate at the junction of U.S. Highway 78 and S.C. Highway 27 in the Town of Ridgeville. Impacts to jurisdictional freshwater wetlands consist of 3.64 acres of permanent impacts and 1.17 acres of temporary impacts. Permanent impacts involve clearing vegetation for an easement and temporary impacts involve clearing and/or filling then restoring wetlands to original grade and allowing vegetation to regrow. Directional drilling or jack and boring

would be used to install the pipeline at all stream crossings, thereby avoiding all stream impacts. The project purpose is to provide reliable, high quality drinking water to residents within the geographic boundaries of the Lake Marion Regional Water System.

Upon review of the submitted information and our species and habitat database, the federally protected American chaffseed (*Schwalbea americana*) is known to occur in Dorchester County. American chaffseed occurs in sandy (sandy peat, sandy loam), acidic, seasonally moist to dry soils and is generally found in open pinelands or savannas and other open grass-sedge systems, such as road right-of-ways. The species depends on fire, mowing, or other periodic disturbances to reduce competition from woody plants and maintain the open to partly-open conditions that it requires. The Service recommends that a survey be conducted for American chaffseed and that the survey results and determination of effect be submitted to our office for review.

The Service also recommends revising Table 1 of the Draft EA to reflect the current species list for Dorchester County (enclosed). Updated species lists for all counties in South Carolina may be accessed at:

https://www.fws.gov/charleston/EndangeredSpecies_County.html

The species lists include federally protected species, as well as Candidate species and species that have been petitioned for listing under the ESA. These petitioned species are collectively referred to as "At-Risk Species" (ARS). Although there are no Federal protections afforded to ARS, please consider including them in your project efforts. Incorporating proactive measures to avoid or minimize harm to ARS may improve their status and assist with precluding the need to list these species. Additional information on ARS can be found at:

http://www.fws.gov/southeast/candidateconservation

The District Engineer has determined that this project will have no effect on the federally protected red-cockaded woodpecker (*Picoides borealis*), wood stork (*Mycteria americana*), Canby's dropwort (*Oxypolis canbyi*), or pondberry (*Lindera melissifolia*), nor on designated or proposed critical habitat. The Service does not require consultation under section 7 of the ESA for no effect determinations. In view of this, we believe that the requirements of section 7 of the ESA have been satisfied for the above-mentioned species. However, obligations under section 7 of the ESA must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered; (2) this action is subsequently modified in a manner, which was not considered in this assessment; or (3) a new species is listed or critical habitat is determined that may be affected by the identified action. Please contact the National Oceanic and Atmospheric Administration's National Marine Fisheries Service for comments on Atlantic sturgeon (*Acipenser oxyrinchus*) and shortnose sturgeon (*A. brevirostrum*).

U.S. Army Corps of Engineers NWP 12 is proposed for each of the wetland crossings. As written, NWP 12 applies to any utility line activity that does not result in the loss of greater than 0.5 acres of waters of the United States for each single and complete project. According to Table 3 of the Draft EA, proposed impacts to wetland "W-5" total 1.2 acres of permanent impacts. These impacts exceed the 0.5-acre threshold; therefore, the Service believes an Individual Permit is necessary for the pipeline crossing at "W-5." Accordingly, the Service recommends that the other portions of the project qualifying for NWP authorization be evaluated for their independent utility in accordance with 33 C.F.R. § 330.6(d). The Service also recommends that compensatory mitigation be provided for all temporary impacts to account for temporal losses of affected wetlands.

The Service appreciates the opportunity to provide comments on the proposed project. If you have questions or need further assistance, please contact Ms. Whitney Wiest at (843) 727-4707 ext. 228, and reference FWS Log No. 2016-I-0704.

Sincerely,

Thomas D. McCoy

Thomas D. McCoy
Field Supervisor

TDM/WAW

Enclosure

# South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species - Dorchester County

| CATEGORY | COMMON NAME/STATUS | SCIENTIFIC NAME | SURVEY WINDOW/ TIME PERIOD | COMMENTS |
|---|---|---|---|---|
| **Amphibian** | Gopher frog (ARS) | *Lithobates capito* | Breeding: October-March | Call survey: February-April |
| **Bird** | American wood stork (T) | *Mycteria americana* | February 15-September 1 | Nesting season |
| | Bald eagle (BGEPA) | *Haliaeetus leucocephalus* | October 1-May 15 | Nesting season |
| | Red-cockaded woodpecker (E) | *Picoides borealis* | April 1-July 31 | Nesting season |
| **Crustacean** | None Found | | | |
| **Fish** | American eel (ARS) | *Anguilla rostrata* | March 1-May 30; October 1-December 15 | Temperature dependent: normally (17-20°C); can be found between 13-25°C |
| | Atlantic sturgeon* (E) | *Acipenser oxyrinchus** | February 1-April 30 | Spawning migration |
| | Blueback herring (ARS) | *Alosa aestivalis* | Mid-January-mid May | Peak: March-April |
| | Shortnose sturgeon* (E) | *Acipenser brevirostrum** | February 1-April 30 | Spawning migration |
| **Insect** | None Found | | | |
| **Mammal** | Rafinesque's big-eared bat (ARS) | *Corynorthinus rafinesquii* | Year round | Found in mines, caves, large hollow trees, buildings, and bat towers |
| | Tri-colored bat (ARS*) | *Perimyotis subflavus* | Year round | Found in mines and caves in the winter |
| **Mollusk** | None Found | | | |
| **Plant** | American chaffseed (E) | *Schwalbea americana* | May-August | 1-2 months after a fire |
| | Bog asphodel (ARS*) | *Narthecium americanum* | June-July | |
| | Boykin's lobelia (ARS) | *Lobelia boykinii* | May-July/August | |
| | Canby's dropwort (E) | *Oxypolis canbyi* | Mid-July-September | |
| | Carolina bishopweed (ARS) | *Ptilimnium ahlesii* | May-July | |
| | Ciliate-leaf tickseed (ARS) | *Coreopsis integrifolia* | August-November | |
| | Pondberry (E) | *Lindera melissifolia* | February-March | |
| | Raven's seedbox (ARS) | *Ludwigia ravenii* | June-October | |
| | Sun-facing coneflower (ARS) | *Rudbeckia heliopsidis* | July-September | |
| **Reptile** | Eastern diamondback rattlesnake (ARS) | *Crotalus adamanteus* | Most of the year | Peak: April-November |
| | Southern hognose snake (ARS) | *Heterdon simus* | Most of the year | |
| | Spotted turtle (ARS) | *Clemmys guttata* | February-mid April | |

# South Carolina List of At-Risk, Candidate, Endangered, and Threatened Species - Dorchester County

| | |
|---|---|
| * | Contact National Marine Fisheries Service (NMFS) for more information on this species |
| ** | The U.S. Fish and Wildlife Service (FWS) and NMFS share jurisdiction of this species |
| ARS | Species that the FWS has been petitioned to list and for which a positive 90-day finding has been issued (listing may be warranted); information is provided only for conservation actions as no Federal protections currently exist. |
| ARS* | Species that are either former Candidate Species or are emerging conservation priority species |
| BGEPA | Federally protected under the Bald and Golden Eagle Protection Act |
| C | FWS or NMFS has on file sufficient information on biological vulnerability and threat(s) to support proposals to list these species |
| CH | Critical Habitat |
| E | Federally Endangered |
| P or P - CH | Proposed for listing or critical habitat in the Federal Register |
| S/A | Federally protected due to similarity of appearance to a listed species |
| T | Federally Threatened |

These lists should be used only as a guideline, not as the final authority. The lists include known occurrences and areas where the species has a high possibility of occurring. Records are updated as deemed necessary and may differ from earlier lists.

For a list of State endangered, threatened, and species of concern, please visit https://www.dnr.sc.gov/species/index.html.

## Helton, Jesse S CIV USARMY CESAC (US)

**From:** Wiest, Whitney <whitney_wiest@fws.gov>
**Sent:** Monday, November 28, 2016 2:12 PM
**To:** Helton, Jesse S CIV USARMY CESAC (US)
**Subject:** [EXTERNAL] Re: Dorchester Reach Lake Marion Regional Water Line FWS Log No. 2016-I-0704

Jesse:

Thank you for the additional project information for the Dorchester Reach Water Transmission Main Project. The Service agrees with your conclusion that the project area does not contain suitable habitat for American chaffseed. The Service has no further comments or concerns regarding the proposed project at this time.

Please note that obligations under section 7 of the Endangered Species Act must be reconsidered if (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered, (2) this action is subsequently modified in a manner which was not considered in this assessment, or (3) a new species is listed or critical habitat is determined that may be affected by the identified action.

If you have any questions, please contact me using the information below.

Sincerely,
Whitney Wiest

On Mon, Nov 21, 2016 at 11:51 AM, Helton, Jesse S CIV USARMY CESAC (US) <Jesse.S.Helton@usace.army.mil <mailto:Jesse.S.Helton@usace.army.mil> > wrote:

Ms. Whitney Wiest

I spoke with you on the phone a couple of weeks ago regarding the Dorchester reach Water Transmission Main Project. I had hoped to get back with you sooner to summarize what we discussed but was delayed in being able update the wetland impacts for the project. You letter had three major points which are addressed below.

1. As we discussed the Corps determined that suitable habitat for American chaffseed was not present in the project footprint. Areas where open pinelands may be adjacent to the project footprint (the interface between the pines and the road) are overgrown with small trees/shrubs, weeds, and vines. Due to the abundance of vegetation in these areas the Corps determined it was not appropriate habitat for American chaffseed.

2. The Corps has updated Table 1 per the recommendations of the USFWS.

3. The Corps has recalculated wetland impacts based on road construction that has occurred since the draft EA was issued. The area that now has a road bed on it was originally not excluded from the construction work limits for this project so it was counted as wetland impacts for the water line project. Once the new road construction was considered and removed from the wetland impacts of this project, the impacts from construction of the waterline project in this area have been reduced from 1.2 acers to 0.48 acers.

If you have any questions or require any additional information please do ask.

Respectfully,

Jesse Helton
Biologist
USACE Charleston District
843-329-8145

--

Whitney A. Wiest
U.S. Fish and Wildlife Service
South Carolina Ecological Services
176 Croghan Spur Road, Suite 200
Charleston, SC  29407
843-727-4707 x 228
843-727-4218 (fax)
whitney_wiest@fws.gov <mailto:whitney_wiest@fws.gov>
Website: Blockedwww.fws.gov/charleston <Blockedhttp://www.fws.gov/charleston/>