

Draft Supplemental Environmental Assessment

Waterline for Diamondhead Wastewater Treatment Plant

Hancock County, Mississippi

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FEMA

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ACRONYMS AND ABBREVIATIONS

amsl	above mean sea level
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	decibel
DNL	Day-Night Average Sound Level
EA	Environmental Assessment
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
HDD	Horizontal Directional Drilling
MDAH	Mississippi Department of Archives and History
MDEQ	Mississippi Department of Environmental Quality
MDMR	Mississippi Department of Marine Resources
NAAQS	National Ambient Air Quality Standards
NCA	Noise Control Act
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NISTAC	Nationwide Infrastructure Support Technical Assistance Consultants
NO ₂	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
O ₃	ozone
OSHA	Occupational Safety and Health Administration
Pb	lead
PM _{2.5}	particulate matter less than 2.5 microns
PM ₁₀	particulate matter less than 10 microns



ACRONYMS AND ABBREVIATIONS

SO ₂	sulfur dioxide
SEA	Supplemental Environmental Assessment
SWPPP	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers
USCB	United States Census Bureau
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WWTP	Wastewater Treatment Plant



1.0 INTRODUCTION

The Diamondhead Water and Sewer District (District) in Hancock County, Mississippi, has applied to the Federal Emergency Management Agency (FEMA) for assistance with construction of a 12-inch-diameter underground water line that will connect the District's water distribution system north of Interstate 10 (I-10) with its distribution system located south of I-10. This project is part of an overall plan to relocate the District's existing wastewater treatment plant (WWTP) and improve the District's services. FEMA proposes to provide assistance for this project through the Public Assistance Program under Presidential Disaster Declaration FEMA-1604-DR-MS.

An Environmental Assessment (EA) for the WWTP relocation project was finalized in January of 2007. The EA analyzed the potential environmental impacts of the District's proposed project to relocate the WWTP to higher ground outside of the floodplain to increase reliability and minimize future damages and service disruptions. FEMA determined that relocation of the WWTP would result in a Finding of No Significant Impact (FONSI).

In accordance with 44 Code of Federal Regulations (CFR) for FEMA, Subpart B, Agency Implementing Procedures, Part 10.9, this Supplemental Environmental Assessment (SEA) has been prepared pursuant to Section 102 of the National Environmental Policy Act (NEPA) of 1969, as implemented by the regulations promulgated by the President's Council on Environmental Quality (CEQ; 40 CFR Parts 1500-1508). This SEA hereby incorporates the Final EA by reference, in accordance with 40 CFR Part 1508.28. The purpose of the SEA is to analyze the potential environmental impacts of the 12-inch water line that would connect to the WWTP, and to determine whether to prepare an Environmental Impact Statement or a FONSI.

2.0 PURPOSE AND NEED

On August 29, 2005, Hurricane Katrina struck the Mississippi Gulf Coast, causing a storm surge that reached nearly 25 feet and devastated large portions of the District's service area, which includes approximately 4,300 customers. Key District facilities, including the WWTP, were severely damaged by the storm's wind and floodwaters. The WWTP will be relocated to higher ground outside of the floodplain to increase reliability and minimize future damages and service disruptions. Completion of the new WWTP is anticipated by fall 2011.

The Diamondhead Water and Sewer District office is located at 4425 Park Ten Drive in Diamondhead, Mississippi. The District's WWTP will be relocated to 311 Noma Drive, north of I-10 (see Figure 1 in Appendix A). The proposed water line would be constructed in the area north of I-10 near the relocated WWTP, and south of I-10 along Akoko Street (see Figure 2 in Appendix A).

The proposed water line would be a component of the District's potable water distribution system, and would improve water transmission capabilities, especially for fire protection services, and service reliability for approximately 200 residents south of I-10. The proposed water line would also provide potable water service to the relocated WWTP and the proposed commercial area adjacent to the site approved for the relocated WWTP.

The proposed water line is needed to provide the new WWTP with reliable service of potable water, and the local area with improved water transmission capabilities, especially for fire protection services.



3.0 ALTERNATIVES CONSIDERED

The following alternatives are considered for the construction of the proposed water line:

Alternative 1: No Action

Under the No Action Alternative, the proposed water line would not be constructed. The existing potable water distribution north and south of I-10 would continue to be separated and the relocated WWTP would not be provided with potable water service by the connection of the relocated WWTP to the existing potable water distribution lines.

Alternative 2: Construction of 12-Inch Water Line (Proposed Action)

Under the Proposed Action Alternative, a 12-inch-diameter underground water line would be constructed to connect the District's water distribution system north of I-10 with the distribution system located south of I-10. The proposed water line would be approximately 5,750 linear feet in length and would require a 50-foot-wide construction corridor.

North of I-10, the 50-foot-wide construction corridor would occur primarily along a pre-existing road, although a utility easement would be required in some places including the area of the water line that would run along the outside of the I-10 right-of-way (see Figure 2). In addition, a 1,730-linear-foot access road would be constructed from the northeast corner of the proposed WWTP relocation site, extending south to the I-10 right-of-way. Construction of the access road would occur within the waterline's 50-foot-wide construction corridor.

To avoid disturbance to the I-10 right-of-way, the water line would be installed underneath the interstate using horizontal directional drilling (HDD), a technique that uses underground boring to install a pipeline with ground disturbance occurring only at entrance and exit holes that would be located north and south of the interstate right-of-way. HDD would require a lay down area (staging area) 50 feet wide and 240 feet long on the south side of the I-10 right-of-way.

South of I-10, the water line would run parallel to and 10 feet away from the I-10 right-of-way fence line. The proposed alignment would then turn south and run down the center line of Akoko Street, an existing unpaved road (see Figure 2). Some vegetation removal would occur in all of the temporary and permanent easements that would be obtained for the construction of the water line. Project activities within the project's southern corridor, south of I-10, will require a 50-foot by 240-foot temporary workspace for the HDD construction activities under I-10. A 30-foot construction corridor will be created for the portion of the waterline to be installed parallel to I-10; a 20-foot permanent corridor will be maintained through this section for access and maintenance. A 50-foot permanent corridor will extend from the I-10 right-of-way to Akoko Street.

Construction of the proposed water line would take approximately 7 months to complete. The trench for the water line would be dug 36 inches deep.

4.0 AFFECTED ENVIRONMENT AND IMPACTS

The following table summarizes the potential impacts of the Proposed Action Alternative and conditions or mitigation measures to offset those impacts. Following the summary table, any areas where potential impacts were identified will be discussed in greater detail.



Affected Environment	Impacts	Mitigation
Geology, Topography and Soils	No impacts to geology or topography are anticipated; short-term impacts to soils during the construction period.	Appropriate Best Management Practices (BMPs), such as installing silt fences and revegetating bare soils immediately upon completion of construction would be used to stabilize soils.
Groundwater	Potential impacts to shallow groundwater may occur during excavation under and south of Interstate 10. However, because excavation would not reach the freshwater parts of the aquifer, no impacts on the aquifer are anticipated.	The applicant would coordinate with and obtain permits from MDEQ for impacts to shallow groundwater as necessary.
Surface Water	Temporary impacts to surface waters are anticipated via the transport of sediment from disturbed soils in storm water runoff during construction.	The applicant would obtain an NPDES permit and submit a SWPPP that would include BMPs to minimize erosion and off-site sediment transport.
Floodplains	No impacts to the floodplain are anticipated because installation of the proposed water line would not result in modifications to the floodplain.	None
Waters of the U.S. including Wetlands	Approximately 0.96 acre of vegetated nontidal and emergent wetlands would be impacted.	The applicant would coordinate with and obtain permits from MDMR and USACE for impacts to wetlands.
Transportation	There would be a minor temporary increase in the volume of construction traffic on roads in the immediate vicinity of the proposed project site. No road closures are anticipated. No impacts to the I-10 right-of-way are anticipated because the water line would be installed underneath I-10 using HDD.	Construction vehicles and equipment would be stored on-site during project construction and appropriate signage would be posted on affected roadways. The applicant would be required to coordinate with the Mississippi Department of Transportation Office of Highways and obtain any necessary permits for installing a pipeline underneath the I-10 right-of-way prior to the start of construction.



Affected Environment	Impacts	Mitigation
Public Health and Safety	No impacts to public health and safety are anticipated.	All construction activities would be performed using qualified personnel and in accordance with the standards specified in Occupational Safety and Health Administration (OSHA) regulations. Appropriate signage and barriers should be in place prior to construction activities to alert pedestrians and motorists of project activities.
Hazardous Materials	No impacts to hazardous materials or wastes are anticipated.	Any hazardous materials discovered, generated, or used during construction would be disposed of and handled in accordance with applicable local, state, and federal regulations.
Socioeconomic Resources	No adverse impacts to socioeconomic resources are anticipated.	None
Environmental Justice	No disproportionately high or adverse effect to minority or low-income populations is anticipated.	None
Air Quality	Short-term impacts to air quality are anticipated to occur during the construction period; no adverse long-term impacts are anticipated	Construction contractors would be required to water down construction areas when necessary and fuel-burning equipment running times would be kept to a minimum and engines would be properly maintained.
Noise	Temporary short-term increases in noise levels are anticipated during construction.	Construction would take place during normal business hours. Equipment and machinery used for the project would meet all local, state, and federal noise regulations.
Biological Resources	Limited vegetation removal would occur along the construction corridor. No impacts to listed species are anticipated.	None



Affected Environment	Impacts	Mitigation
Cultural Resources	No impacts to archeological resources or historic structures are anticipated.	None

4.1 Geology, Topography, and Soils

Citronelle formations of red sand and gravel and white clay formed probably during the Pleistocene period and Coastal deposits of loam, sand gravel, and clay were deposited during the Holocene period (USGS, 2006a).

The topography at the proposed project site is generally level (typically less than 2 percent slope). Elevations within the proposed project site range from 9 feet above mean sea level (amsl) to 16 feet amsl.

The proposed project site contains soils from the Atmore, Smithton, and Escambia soil series (USDA/NRCS, 2008). All of these soil series are characterized by deep, poorly drained, hydric soils. Some small depressions can be ponded for several days during wet seasons.

The Farmland Protection Policy Act (FPPA) states that Federal agencies must “minimize the extent to which Federal programs contribute to the unnecessary conversion of farmland to nonagricultural uses...”

The National Pollutant Discharge Elimination System (NPDES) is a U.S. Environmental Protection Agency (EPA) stormwater program that requires operators of construction sites one acre or larger (including smaller sites that are part of a larger common plan of development) to obtain authorization to discharge stormwater under an NPDES construction stormwater permit. NPDES permit requirements include submittal of a Stormwater Pollution Prevention Plan (SWPPP) that outlines the temporary and permanent Best Management Practices (BMPs) that will be used to prevent erosion and the transport of sediment off-site during and after construction activities (i.e., mulching, revegetating bare soils, silt fence, etc.). The NPDES program is administered by the Mississippi Department of Environmental Quality (MDEQ).

No Action Alternative – Under the No Action Alternative, the proposed water line would not be constructed; therefore, no impacts to geology, topography, or soils would occur.

Proposed Action Alternative – Under the Proposed Action Alternative, no impacts to geology or topography are anticipated. Impacts to soils would occur during construction due to the potential for erosion. Because the area of ground disturbance would be greater than one acre, the applicant would be required to obtain an NPDES permit from MDEQ and submit a SWPPP. Soils on the proposed project site are not classified as prime or unique farmland (USDA/NRCS, 2008). A letter requesting project review was sent to the NRCS on June 11, 2008; no response has been received to date.

4.2 Groundwater

The proposed project site is located above the coastal lowlands aquifer system (USGS, 2006b). Recharge of the aquifer in the vicinity of the proposed project site occurs in areas of higher



elevations because water flows southwest toward the Gulf of Mexico. Dissolved solids, such as salinity, increase as the velocity of the water decreases approaching the sea. Freshwater parts of the aquifer are typically located about 500 feet below sea level.

No Action Alternative – Under the No Action Alternative, the proposed water line would not be constructed; therefore, no impacts to groundwater would occur.

Proposed Action Alternative – Under the Proposed Action Alternative, trenching activities would result in digging to approximately 3 feet below the ground surface, which is not anticipated to reach the water table in the area north of I-10. However, the installation of the water line underneath I-10 using HDD would result in disturbances at or below the water table, which may result in sedimentation of the surrounding groundwater. In addition, ground disturbances south of I-10 may also reach the water table. Because excavation would not reach the freshwater parts of the aquifer, no impacts on the groundwater resources of the aquifer are anticipated.

The applicant would coordinate with and obtain permits from MDEQ for impacts to shallow groundwater as necessary.

4.3 Surface Water

The proposed project site is located approximately 1.25 miles east of Jourdan River and approximately 1.7 miles north of Bay St. Louis. Elevations within the proposed project site range from 9 to 16 feet amsl. Elevations are highest at the northeastern corner of the project site and in the areas adjacent to I-10.

Stormwater flows to the south and west into tidal marsh and tributaries to Bay St. Louis. The area adjacent to I-10 is elevated due to construction of the road bed. Within the northern portion of the project site, surface water flows southwest across the adjacent property where the WWTP is proposed to be relocated, and into the drainage ditch located to the east of a pre-existing access road. Within the southern portion of the proposed project site, surface water flows into the drainage ditches located along both sides of Akoko Street. Portions of the proposed project site contain an existing drainage system that was created during preliminary construction in the 1970s of a planned residential neighborhood that was never completed. A site visit conducted by Nationwide Infrastructure Support Technical Assistance Consultants (NISTAC) and FEMA on June 9, 2008, verified these findings.

No Action Alternative – Under the No Action Alternative the proposed water line would not be constructed; therefore, no impacts to surface waters would occur

Proposed Action Alternative – Under the Proposed Action Alternative, temporary impacts to off-site surface waters, potentially including the Jourdan River and the tidal marsh north of Bay St. Louis, may occur due to the transport of sediment from disturbed soils in storm water runoff during construction. To minimize impacts to surface water, the applicant would obtain an NPDES permit from MDEQ and prepare a SWPPP that would include BMPs to minimize erosion and off-site sediment transport. The proposed waterline will be installed along pre-existing access roads within the northern portion of the proposed project site and along Akoko Street, a dirt road, within the southern portion of the proposed project site. The project is not anticipated to impede or modify the existing drainage ditches located along the project corridor.

4.4 Floodplains

EO 11988 (Floodplain Management) requires that a Federal agency avoid direct or indirect support of development within the 100-year floodplain whenever there is a practicable alternative. FEMA uses Flood Insurance Rate Maps (FIRMs) to identify the regulatory 100-year floodplain for the National Flood Insurance Program (NFIP). Diamondhead is a participant in the NFIP.

Consistent with EO 11988, FIRMs were examined during the preparation of this EA. The project area is located on the Hancock County, Mississippi (Unincorporated Areas) FIRM with Community Panel Number 285254-0315C (FEMA, 1987); the proposed water line is located in flood zone B, moderate flood hazard area and zone C, areas of minimal flooding on this FIRM.

The FIRMs for Mississippi have been updated since Hurricane Katrina to more accurately delineate flood zones (MDEQ, 2008; FIRM Map Numbers 28045C0332D and 28045C0244D) – these FIRMS are preliminary and are currently under review by FEMA. The preliminary FIRMs show the proposed project site south of I-10 located in the 100-year floodplain, within flood zone AE, and the proposed project area north of I-10 located within flood zone X “other flood areas,” defined as areas of 0.2 percent chance of annual flooding, areas of 1 percent chance of annual flooding with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1 percent chance of annual flooding.

No Action Alternative – Under the No Action Alternative the proposed water line would not be constructed; therefore, no impacts to the floodplain would occur.

Proposed Action Alternative – Under the Proposed Action Alternative, no impacts to the floodplain would occur because installation of the proposed water line would not result in modifications to the floodplain since the water line would be buried.

4.5 Waters of the U.S. including Wetlands

The Clean Water Act (CWA), as amended in 1977, established the basic framework for regulating discharges of pollutants into the waters of the United States. The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or filled material into waters of the U.S., including wetlands, pursuant to Section 404 of the Clean Water Act. Additionally, Executive Order (EO) 11990 (Protection of Wetlands) requires federal agencies to avoid, to the extent possible, adverse impact of wetlands.

A review of the National Wetlands Inventory (NWI) Map indicates no wetlands are located on or immediately adjacent to the project corridor north of I-10. However, wetlands were identified throughout the southern portion of the project corridor from the I-10 right-of-way to Akoko Street (USFWS, 2008b). A wetland delineation was conducted by NISTAC and FEMA biologists on June 10, 2008, in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual*. The Corps manual requires the presence of all three parameters (greater than 50% dominance of hydrophytic vegetation, evidence of hydric soils, and presence of hydrologic indicators) for an area to be considered a wetland.

The dominant plant species observed in the wooded areas within and adjacent to the project’s northern corridor include longleaf pine (*Pinus palustris*), loblolly pine (*Pinus taeda*), yaupon (*Ilex vomitoria*), American holly (*Ilex opaca*), fackleberry (*Vaccinium arboretum*), dog fennel



(*Eupatorium capillifolium*), and little bluestem (*Andropogon scoparius*). Although some of the dominant species are known to occur in wetland areas, a dominance (greater than 50%) of wetland species was not observed. Hydrologic indicators were also lacking; the overall appearance of the litter layer does not suggest the area contains standing water for a substantial portion of the growing season. According to the NRCS data, soils on project's northern corridor consist of Atmore silt loam and Escambia loams, both of which are listed as hydric (USDA/NRCS, 2008a). Based on these findings, the project's northern corridor does not contain wetlands.

Within the southern portion of the proposed project corridor, wetlands are present within the project corridor from the proposed HDD workspace to Akoko Street; these wetlands extend well beyond the project area. The wetland areas are dominated by dwarf spikerush (*Eleocharis parvula*), southern waxy sedge (*Carex glaucescens*), sweet bay (*Magnolia virginiana*), round head rush (*Juncus validus*), swamp titi (*Cyrilla racemiflora*), slash pine (*Pinus elliottii*), wax myrtle (*Morella cerifera*), Chinese tallow (*Triadica sebifera*), water oak (*Quercus nigra*), red maple (*Acer rubrum*), Brazilian vervain (*Verbena brasiliensis*), and johnsongrass (*Sorghum halepense*).

According to NRCS data, soils within the wetland area consist of Smithton fine sandy loam, Escambia loam, and Atmore Silt Loam, all of which are listed as hydric (USDA/NRCS, 2008a). Soil test pits were dug to verify the presence of hydric soils. Soils had a high organic content in the surface layer and chroma values of 1 with mottling and oxidized root channels; therefore soils exhibited hydric characteristics. Hydrology indicators consisted of areas with water stained leaves and drift lines, and soils with oxidized root channels.

The Coastal Zone Management Act (CZMA) enables coastal states, including Mississippi, to designate state coastal zone boundaries and develop coastal management programs to improve protection of sensitive shoreline resources and guide sustainable use of coastal areas. According to the National Oceanic and Atmospheric Administration, the proposed project site is located within the Mississippi Coastal Zone (NOAA, 2006).

No Action Alternative – Under the No Action Alternative the proposed water line would not be constructed; therefore, no impacts to wetlands or the coastal zone would occur

Proposed Action Alternative – Under the Proposed Action Alternative, approximately 0.96 acre of vegetated nontidal and emergent wetlands located between the proposed HDD workspace to Akoko Street in the southern corridor would be affected. Following construction, approximately 0.34 acre will be restored to pre-construction condition to the extent practicable. The remaining 0.62 acre will be permanently converted and maintained as a utility easement for access and maintenance of the waterline.

On June 11, 2008, a letter requesting project review was sent to the Mississippi Department of Marine Resources (MDMR), Bureau of Wetlands Permitting. In a letter dated July 17, 2008, MDMR stated that an application form should be submitted to the MDMR Bureau of Wetlands Permitting if any impacts to wetlands are anticipated (see Appendix B). The applicant would be required to coordinate with the USACE and MDMR for impacts to wetlands and the coastal zone.



4.6 Transportation

The proposed WWTP is located north of I-10 and west of Park Ten Drive. Park Ten Drive via Gex Drive and Yacht Club Road provide access to the proposed project site. I-10 runs through the middle of the proposed project site but there are no on- or off-ramps to access the interstate within the proposed project site. Several public roads, including Akoko Street (shown on Figure 2), occur within the proposed project site; however, there are very few homes that are located within the area, especially south of I-10, so there is minimal traffic activity in the proposed project area and nearby public roads.

The Mississippi Department of Transportation Office of Highways regulates the I-10 right-of-way encroachment and oversees permitting for any activities that occur in the right-of-way.

No Action Alternative – Under the No Action Alternative the proposed water line would not be constructed and no changes to traffic would occur.

Proposed Action Alternative – Under the Proposed Action Alternative, no significant adverse impacts to transportation or site access are anticipated. Existing roads would be used to access the proposed water line route.

A minor temporary increase in the volume of construction traffic on roads in the immediate vicinity of the proposed project site, which could potentially result in a slower traffic flow for the duration of the construction phase, is anticipated. To mitigate potential delays, construction vehicles and equipment would be stored on site during project construction and appropriate signage would be posted on affected roadways. No road closures are anticipated.

To avoid disruption to I-10, the applicant would install the water line underneath the interstate using HDD – the only ground disturbance would occur at entrance and exit holes north and south of the I-10 right-of-way. The applicant would be required to coordinate with the Mississippi Department of Transportation Office of Highways and obtain any necessary permits for installing a pipeline underneath the I-10 right-of-way prior to the start of construction.

4.7 Environmental Justice

EO 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) requires federal agencies to make achieving environmental justice part of their mission. Agencies are required to identify and correct programs, policies, and activities that have disproportionately high and adverse human health or environmental effects on minority and low-income populations. Socioeconomic and demographic data for the project area were analyzed to determine if a disproportionate number (greater than 50 percent) of minority or low-income persons have the potential to be adversely affected by the proposed project.

According to the 2000 Census of Population, in 1999 the median household income reported in the State of Mississippi was \$31,330 with 20 percent of individuals living below the poverty level. Within Hancock County the median annual household income was \$35,202, with 14 percent of the population living below the poverty level. The annual median household income reported within census tract 305 was \$50,137, with 7 percent of the population living below the poverty level. In addition, minorities represented 45 percent, 8 percent, and 4 percent, respectively, of the population of the State of Mississippi, Hancock County, and census tract 305 (USCB, 2000).



No Action Alternative – Under the No Action Alternative, the proposed water line would not be constructed; therefore, there would be no disproportionately high and adverse effect on minority or low-income populations.

Proposed Action Alternative – Under the Proposed Action Alternative, no adverse impacts on minority or low-income populations are anticipated. Implementation of the Proposed Action Alternative would benefit all populations equally within the WWTP service area.

4.8 Air Quality

Under the Clean Air Act, the EPA establishes primary and secondary air quality standards. Primary air quality standards protect the public health, including the health of “sensitive populations, such as people with asthma, children, and older adults.” Secondary air quality standards protect public welfare by promoting ecosystems health, preventing decreased visibility, and damage to crops and buildings. The EPA has set national ambient air quality standards (NAAQS) for six of the following criteria pollutants; ozone (O₃), particulate matter (PM_{2.5 and 10}), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), and lead (Pb). According to the MDEQ, the entire state of Mississippi is classified as in attainment, meaning criteria air pollutants do not exceed the NAAQS (MDEQ, 2008).

No Action Alternative – Under the No Action Alternative the proposed water line would not be constructed; therefore, no impacts to air quality would occur.

Proposed Action Alternative – Under the Proposed Action Alternative, short-term impacts to air quality are anticipated to occur during construction. To reduce temporary impacts to air quality, the construction contractors would be required to water down construction areas when necessary in order to minimize dust. Emissions from fuel-burning internal combustion engines (e.g., heavy equipment and earthmoving machinery) could temporarily increase the levels of some of the criteria pollutants, including CO, NO₂, O₃, and PM₁₀. To reduce the emission of criteria pollutants, fuel-burning equipment running times would be kept to a minimum and engines would be properly maintained.

4.9 Noise

Sound is most commonly measured in decibels (dB) on the A-weighted scale, which is the scale most similar to the range of sounds that the human ear can hear. The Day-Night Average Sound Level (DNL) is an average measure of sound. The DNL descriptor is accepted by federal agencies as a standard for estimating sound impacts and establishing guidelines for compatible land uses.

Noise, defined herein as undesirable sound, is federally regulated by the Noise Control Act of 1972 (NCA). Although the NCA gives the EPA authority to prepare guidelines for acceptable ambient noise levels, it only charges those federal agencies that operate noise-producing facilities or equipment to implement noise standards. EPA guidelines, and those of many other federal agencies, state that outdoor sound levels in excess of 55 dB DNL are “normally unacceptable” for noise-sensitive land uses such as residences, schools, or hospitals.

The proposed project site consists mainly of undeveloped forested land and rarely-used public roads. The closest noise-sensitive receptors to the proposed water line are located within 0.2 mile to the north and east of the northern end of the project site and include businesses, a church, and



a community school for continuing education. A noise ordinance does not exist for Diamondhead.

No Action Alternative – Under the No Action Alternative the proposed water line would not be constructed; therefore, no impacts to noise would occur.

Proposed Action Alternative – Under the Proposed Action Alternative, no long-term impacts to noise are anticipated. During the construction period, temporary short-term increases in noise levels are anticipated. To prevent potential noise disturbances to the community, construction activities would be limited to normal business hours to the extent possible. Equipment and machinery used for the project would meet all local, state, and Federal noise regulations.

4.10 Biological Resources

The proposed project area consists of pine forest with a fairly developed understory and shrub layer. The plant species observed in the wooded areas within and adjacent to the project’s northern and southern corridor include: slash pine (*Pinus elliottii*), along with a few scattered longleaf pine (*Pinus palustris*), loblolly pine (*Pinus taeda*), and southern magnolia (*Magnolia grandiflora*). The understory consists of red maple (*Acer rubrum*), sweetbay magnolia (*Magnolia virginiana*), black gum (*Nyssa sylvatica*), and water oak (*Quercus nigra*). The shrub layer included yaupon (*Ilex vomitoria*), gallberry (*Ilex glabra*), and swamp titi (*Cyrilla racemiflora*). The herb layer is composed of poison-ivy (*Toxicodendron radicans*), several greenbrier species (*Smilax* spp.), and various grasses. The proposed project site supports wildlife common to undeveloped suburban areas in Mississippi, including songbirds, reptiles, amphibians, small mammals, and white-tailed deer (*Odocoileus virginianus*).

USFWS lists the following federally endangered (E) and threatened (T) animal species for Hancock County (USFWS, 2008a):

Common Name	Scientific Name	Status
Louisiana black bear	<i>Ursus americanus luteolus</i>	T
Piping plover	<i>Charadrius melodus</i>	T (CH)
Gopher tortoise	<i>Gopherus polyphemus</i>	T
Green turtle	<i>Chelonia mydas</i>	T
Loggerhead turtle	<i>Caretta caretta</i>	T
Gulf sturgeon	<i>Acipenser oxyrhynchus desotoi</i>	T (CH)
Inflated heelsplitter	<i>Potamilus inflatus</i>	T
Louisiana quillwort	<i>Isoetes louisianensis</i>	E
Leatherback turtle	<i>Dermochelys comacea</i>	E
Kemp’s Ridley turtle	<i>Lepidochelys kempii</i>	E
West Indian manatee	<i>Trichechus manatus</i>	E
Brown pelican	<i>Pelecanus occidentalis</i>	E
(CH) = critical habitat		



The site visit on June 9, 2008, confirmed that the proposed project site does not contain habitat for any federally listed species; therefore, it is unlikely that any threatened and endangered species are present.

No Action Alternative – Under the No Action Alternative the proposed water line would not be constructed; therefore, no impacts to biological resources would occur.

Proposed Action Alternative – Under the Proposed Action Alternative, the majority of proposed water line route would be constructed in previously disturbed areas underneath roads or within existing utility right-of-ways that are maintained by mowing; however, limited vegetation removal would occur along the 50-foot construction corridor as needed.

In a letter dated June 18, 2008, the USFWS stated that no known federally listed threatened or endangered species, or their habitats, within the project area and that no impacts to listed species are anticipated to occur as a result of the project (see Appendix B).

4.11 Cultural Resources

Section 106 of the National Historic Preservation Act, as amended, and implemented by 36 CFR Part 800, requires federal agencies to consider the effects of their actions on historic properties and provide the Advisory Council on Historic Preservation an opportunity to comment on federal projects prior to implementation. Historic properties are defined as archeological sites, standing structures, or other historic resources listed in or eligible for listing in the National Register of Historic Places.

As a result of the EA that was completed for the WWTP relocation project, a Phase I Cultural Resource Survey (Mississippi Department of Archives and History [MDAH] Project Log #03-051-07) was executed and resulted in a finding of No Historic Properties Affected (FEMA, 2007).

No Action Alternative – Under the No Action Alternative the proposed water line would not be constructed; therefore, no impacts to archeological or cultural resources would occur.

Proposed Action Alternative – Because the proposed water line would be constructed in areas that have been disturbed by the installation of previous utilities, and the fact that the Phase I Cultural Resource Survey of the adjoining site for the relocated WWTP produced negative results, FEMA has determined that no known cultural resources would be affected by the proposed project.

A consultation letter dated July 8, 2008, was submitted to the MDAH State Historic Preservation Office and to the Mississippi Band of Choctaw Indians requesting review and comments regarding the proposed project. In a letter dated July 29, 2008, MDAH concurred with FEMA's determination that no known cultural resources are likely to be affected. No response has been received to date from the Mississippi Band of Choctaw Indians.

5.0 CUMULATIVE IMPACTS

According to the Council on Environmental Quality (CEQ) regulations, cumulative impacts represent 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 (40 CFR 1508.7).” In accordance with NEPA and to the extent reasonable and practical, this EA considered the combined effect of the Proposed Action Alternative and other actions occurring or proposed in the vicinity of the proposed project site.

Diamondhead and the entire Mississippi Gulf coast are undergoing recovery efforts after Hurricane Katrina caused extensive damages. The recovery efforts in Diamondhead include demolition, reconstruction, and new construction. These projects, the relocated WWTP project, and the proposed project may have a cumulative temporary impact on air quality and surface water in Bay St. Louis by increasing criteria pollutants and increasing erosion potential throughout construction activities. No other cumulative effects are anticipated.

6.0 PUBLIC INVOLVEMENT

FEMA is the lead federal agency for conducting the NEPA compliance process for water line construction project in Diamondhead, Mississippi. It is the goal of the lead agency to expedite the preparation and review of NEPA documents and to be responsive to the needs of the community and the purpose and need of the proposed action while meeting the intent of NEPA and complying with all NEPA provisions.

The District will notify the public of the availability of the draft SEA through publication of a public notice in a local newspaper. FEMA will conduct an expedited 15-day public comment period commencing on the initial date of publication of the public notice.

7.0 AGENCY COORDINATION AND PERMITS

The following agencies and organizations were contacted by a letter requesting project review during the preparation of this SEA. Letters received to date are included in Appendix B.

- U.S. Army Corps of Engineers, Mobile District, Regulatory Division
- U.S. Department of Agriculture, Natural Resources Conservation Service
- U.S. Environmental Protection Agency, Region 4, Water Management Division
- U.S. Fish and Wildlife Service, Jackson Field Office
- Mississippi Department of Agriculture and Commerce
- Mississippi Department of Archives and History
- Tribal Historic Preservation Officer, Mississippi Band of Choctaw Indians
- Mississippi Department of Environmental Quality, Office of Pollution Control, Environmental Permits Division
- Mississippi Department of Marine Resources, Bureau of Wetlands Permitting
- Mississippi Department of Transportation, Environmental Division
- Mississippi Soil and Water Conservation Commission



In accordance with applicable local, state, and federal regulations, the applicant would be responsible for acquiring any necessary permits prior to commencing construction at the proposed project site.

8.0 CONCLUSIONS

No impacts to geology, topography, floodplains, public health and safety, hazardous materials, socioeconomics, environmental justice, threatened/endangered species, and cultural resources are anticipated with the Proposed Action Alternative. During the construction period, short-term impacts to soils, groundwater, surface water, transportation, air quality, and noise are anticipated. All short-term impacts require conditions to minimize and mitigate impacts to the proposed project site and surrounding areas. Potential impacts to surface water, soils, and shallow groundwater would require permits from MDEQ. There would be limited vegetation removal along the project corridor, which is mostly disturbed and follows existing rights-of-way. Impacts to wetlands (0.96 acre) would require a permit from the USACE and MDMR. The HDD pipeline installation would require a permit from the Mississippi Department of Transportation Office of Highways.



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Appendix A
Figures

Appendix B
Agency Coordination