

Draft Environmental Assessment

North Bay Elementary School Relocation

Hancock County, Mississippi

January 2009



FEMA

U.S. Department of Homeland Security
FEMA-1604-DR-MS
Transitional Recovery Office – Biloxi, MS

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Contract No. HSFEHQ-06-D-0489
Task Order No. HSFEHQ-06-J-0003

15708003.00200

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ACRONYMS AND ABBREVIATIONS

ABFE	advisory base flood elevation
amsl	above mean sea level
APE	Area of Potential Effects
BHS	Bay High School
BMP	Best Management Practice
BWMS	Bay Waveland Middle School
BWSD	Bay St. Louis-Waveland School District
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	decibel
DFIRM	Digital Flood Insurance Rate Map
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
FPPA	Farmland Protection Policy Act
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
NAVD	North American Vertical Datum
NBES	North Bay Elementary School
NEPA	National Environmental Policy Act
NISTAC	Nationwide Infrastructure Support Technical Assistance Consultants
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O ₃	ozone
OSHA	Occupational Safety and Health Administration



ACRONYMS AND ABBREVIATIONS

PA	Public Assistance
Pb	lead
PM _{2.5}	particulate matter less than 2.5 microns
PM ₁₀	particulate matter less than 10 microns
SHPO	State Historic Preservation Office
SO ₂	sulfur dioxide
SSES	Second Street Elementary School
SWPPP	Storm Water Pollution Prevention Plan
THPO	Tribal Historic Preservation Office
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WES	Waveland Elementary School



1.0 INTRODUCTION

On August 29, 2005, Hurricane Katrina struck the Mississippi Gulf Coast, causing extensive damage. Subsequently, a Presidential Disaster Declaration, FEMA-1604-DR-MS, was signed for Katrina.

The Bay St. Louis-Waveland School District has submitted an application for Federal Emergency Management Agency (FEMA) funding under FEMA's Public Assistance Program being administered in response to FEMA-1604-DR-MS for the proposed relocation of the North Bay Elementary School (NBES) in Bay St. Louis, Hancock County, Mississippi.

In accordance with the Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 93-288, as amended, and implementing regulations at 44 Code of Federal Regulations (CFR) Part 206, FEMA is required to review the environmental effects of the proposed action prior to making a funding decision. This Environmental Assessment (EA) has been prepared in accordance with FEMA's National Environmental Policy Act (NEPA) regulations found in 44 CFR Part 10.

2.0 PURPOSE AND NEED

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in high winds, heavy rains, and flooding that caused extensive damage throughout the Bay St. Louis-Waveland School District (BWSD). Due to their proximity to St. Louis Bay and the Gulf of Mexico, BWSD's Waveland Elementary School (WES), North Bay Elementary School (NBES), and Second Street Elementary School (SSES) were severely damaged (see Figure 1 in Appendix A).

After Katrina, faculty and students at each of the three damaged schools were housed in temporary facilities located on their respective school sites. For the 2008-2009 school year, to prepare for BWSD's proposed elementary school redevelopment plans (and while WES is being rebuilt in place as the new Bay Waveland Lower Elementary School), the grade levels served at WES, NBES, and SSES were temporarily restructured. All BWSD students in kindergarten through second grade were relocated to the temporary facilities at NBES; third and fourth grades were relocated to the temporary facilities at SSES; and fifth grade students were relocated to temporary facilities at Bay Waveland Middle School at 600 Pine Street in Bay St. Louis.

NBES, located at 740 Dunbar Avenue in Bay St. Louis, was comprised of five main buildings and two modular classrooms totaling 30,000 square feet. The school was constructed in 1960 with a later addition in 1995. The school provided public education from kindergarten through third grade and held a capacity of 756 students. The majority of the NBES campus was located within the 100-year floodplain (Flood Zone A11) and the overall campus was located within the Advisory Base Flood Elevation (ABFE) Coastal High Hazard Area. Damages to NBES, resulting from an approximate 27-foot storm surge and including extensive roof damage, exceeded the 50% repair/replacement ratio, meeting FEMA's criteria for demolition and replacement. Due to public health and safety concerns, all remaining structures on the NBES campus were demolished.



A series of modular classrooms have been placed on the NBES campus, providing a temporary educational facility for faculty and students displaced after Hurricane Katrina. These temporary facilities are neither expected nor intended to withstand many months of regular use and are not considered a long-term solution. Consequently, there is a need to provide NBES with a permanent facility in a location that will effectively serve the community.

In lieu of replacement of NBES, BWSO has requested FEMA funding for an improved project to relocate the facilities and students from NBES and the students from SSES to a consolidated, new facility to be called the Bay Waveland Upper Elementary School. SSES, located on 400 North 2nd Street in Bay St. Louis, provided public education from fourth through fifth grade and held a capacity of 885 students. The school, built in 1923, is listed on the National Register of Historic Places (NRHP) and is considered a Mississippi Landmark. Although SSES was also severely damaged as a result of Hurricane Katrina, BWSO will not utilize FEMA funding allocated for the repairs of SSES to fund the construction of Upper Elementary. BWSO is currently evaluating alternative educational uses for SSES and also coordinating with FEMA and the Mississippi Department of Archives and History (MDAH) to prepare a Memorandum of Agreement, which would outline measures to avoid, minimize, or mitigate any potential adverse effects to SSES.

The relocation of NBES would provide for a cost effective alternative for the district, while serving the community with a new permanent educational facility that would be located in an area less prone to flood-related damages, while maintaining proximity to the former elementary school sites.

3.0 ALTERNATIVES

This section describes the alternatives that were considered in addressing the purpose and need stated in Section 2. Two alternatives were evaluated: the No Action Alternative, and the Proposed Action Alternative, which is the relocation of NBES.

Alternative 1: No Action

Under the No Action Alternative, the NBES would not be relocated and NBES faculty, staff, and students would continue to utilize temporary facilities located on the existing NBES campus.

Alternative 2: Relocation of NBES Campus (Proposed Action)

The proposed project site consists of 16.5 acres of undeveloped land located just north of and adjacent to Bay Waveland Middle School (BWMS; see Figures 1 and 2 in Appendix A). Under Alternative 2, a new 90,000-square-foot school would be constructed to serve third through fifth grades district-wide. The new school would be known as the Bay Waveland Upper Elementary School and would be located approximately 0.6 mile west and 1.4 miles northwest of the former NBES and existing SSES, respectively. According to preliminary Digital Flood Insurance Rate Maps (DFIRMs), portions of the proposed project site are located in Flood Zones AE (100-year floodplain) and X (500-year floodplain), and are within the ABFE. The proposed project would add fill material to elevate the site to approximately 21 feet above mean sea level (amsl), placing it outside the 100-year floodplain and ABFE. The proposed project would also construct a new access road extending north from the proposed project site connecting Pine Street to the south to Athletic Drive to the north (see Figure 2 in Appendix A).



The new facility would contain 36 classrooms with a combined student capacity of 1,008 students, as well as a multi-use gymnasium, cafeteria, computer lab, music room, art room, special education classroom, restrooms and administrative facilities (see Figure 3 in Appendix A). Construction of the new facility would require clearing approximately 12 acres of the project site.

The proposed project site is located in a moderately developed residential and school zone, and is currently used as a recreational area/playing fields for BWMS. The north wing of BWMS and associated parking extend into the southern portion of the site. Woodland vegetation, as well as ponds and wetlands, are located within the northern and northwestern portions of the site, while maintained grasses and scattered trees dominate the remainder of the site. A residential neighborhood borders the site to the east. Access to the proposed project site is via Pine Street, which ends on the southeast corner of the site. The new facility will tie into existing municipal water, electric, sewer, and telephone utilities on the BWMS campus.

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 and Soils	No impacts to geology are anticipated. Short-term minor impacts to soils may occur during construction.	Appropriate Best Management Practices (BMPs), such as installing silt fences and revegetating bare soils, would minimize runoff.
Surface Water	Temporary short-term impacts to on-site and off-site surface water are possible during construction activities.	The applicant has obtained a Stormwater Pollution Prevention Plan (SWPPP) and a National Pollutant Discharge Elimination System (NPDES) permit for the project. Appropriate BMPs, such as installing silt fences and revegetating bare soils, would minimize runoff.
Groundwater	No impacts to groundwater are anticipated.	None.
Floodplains	A portion of the project site is within the 100-year floodplain and ABFE.	The new facility would be elevated to approximately 21 feet amsl, placing it outside the 100-year floodplain and ABFE.
Waters of the U.S. including Wetlands	The project would impact 1.43 acres of nontidal wetlands. Temporary short-term impacts to on-site and off-site wetlands are possible during construction activities.	The applicant has obtained a wetland permit and water quality certification, and has purchased the required mitigation credits to offset wetland impacts. Appropriate BMPs, such as installing



Affected Environment	Impacts	Mitigation
		silt fences and revegetating bare soils, would minimize runoff to wetland areas.
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. There would be minor long-term impacts to traffic levels in the vicinity of the BWMS campus as a result of the increased number of students, parents, and staff accessing the campus.	Construction vehicles and equipment would be stored on-site during project construction and appropriate signage would be posted on affected roadways. Traffic devices including signal lights and/or stop signs may be installed during or on completion of construction to mitigate minor long-term impacts to traffic levels.
Public Health and Safety	None.	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 would be in place prior to construction activities to alert pedestrians and motorists.
Hazardous Materials	No hazardous materials or waste impacts are anticipated.	Any hazardous materials discovered, generated, or used during construction would be disposed and handled in accordance with applicable local, state, and federal regulations.
Socioeconomic Resources	No adverse socioeconomic impacts are anticipated.	None.
Environmental Justice	No disproportionately high or adverse effect on minority or low-income populations is anticipated.	None.
Air Quality	Short-term impacts to air quality would occur during the construction period.	Construction contractors would be required to water down construction areas when necessary; fuel-burning equipment running times would be kept to a minimum; engines would be properly maintained.
Noise	Short-term noise impacts would occur at the proposed project site during the construction period.	Construction would occur during scheduled hours and equipment would meet all local, state, and federal noise regulations.
Biological Resources	Approximately 7.5 acres of mowed grass and 2.5 acres of wooded upland would be cleared, and 1.43 acres of	None.



Affected Environment	Impacts	Mitigation
	wetlands would be impacted.	
Cultural Resources	No impacts to cultural resources are anticipated.	None.

4.1 Geology and Soils

The proposed project site is located within the East Gulf Coastal Plain. This broad physiographic designation extends from the Gulf of Mexico to northern Tennessee and from eastern Louisiana to western Florida (USGS 2008). The proposed project site is located within the Coastal Flatwoods ecological region of the East Gulf Coastal Plain, an area approximately 10 to 15 miles wide that parallels the Gulf Coast. Coastal Flatwoods are characterized by level terraces and clays, sands, and gravels (Stewart 2003). Elevations within the proposed project site range from 11 to 19 feet amsl; elevations are highest at the southeastern corner of the proposed project site.

The soils at the proposed project site primarily consist of Escambia loam, with a small area of Atmore silt loam and Plummer loamy sand (USDA/NRCS 2008). The Escambia series is found on coastal plains (0-2 percent slopes) and the parent material consists of sandy and loamy marine deposits. The natural drainage class for the Escambia series is somewhat poorly drained and water movement in the most restrictive layer is moderately low. The Escambia loam series is classified as prime farmland soil by the U.S. Department of Agriculture/Natural Resources Conservation Service (USDA/NRCS). The Atmore series is found on depressions (0-2 percent slopes) and the parent material consists of loamy marine deposits. The natural drainage class for the Atmore series is poorly drained and water movement in the most restrictive layer is moderately high. The Plummer series is found on flats (0-2 percent slopes) and the parent material consists of sandy marine deposits. The natural drainage class for the Plummer series is poorly drained and water movement in the most restrictive layer is moderately high. All three soil series are classified as hydric soils by the USDA/NRCS.

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...” Soils that are located within city limits are not considered prime or unique farmland (USDA/NRCS 2008); therefore, because the proposed project site is within the city limits of Bay St. Louis, the FPPA does not apply.

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no impacts to geology or soils.

Proposed Action Alternative – Under the Proposed Action Alternative, no impacts to geology are anticipated because construction will only disturb the surface of the proposed project site. Short-term impacts to soils would occur during the construction period.

On November 24, 2008, an agency consultation letter requesting project review was sent to NRCS (Appendix B). No response has been received to date.

The applicant has obtained an NPDES permit from the Mississippi Department of Environmental Quality (MDEQ) and has prepared a SWPPP which includes BMPs to minimize erosion of soil from the construction area and reduce off-site sediment transport (see Appendix C).



4.2 Water Resources

4.2.1 Surface Water

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 proposed project site is located approximately 0.75 mile south of Joes Bayou, 1.0 mile southwest of Walts Bayou, and 1.3 miles west of St. Louis Bay. Both bayous drain into the Jourdan River, which is located 1.3 miles north of the proposed project site. Elevations within the proposed project site range from 11 to 19 feet amsl; elevations are highest at the southeastern corner of the proposed project site.

Surface water within the proposed project site flows northwest into a large man-made wetland area located in the northwestern corner of the project site. This wetland area consists of a naturalized stormwater retention area that was originally constructed in wet pine savanna during the construction of BWMS. There are three man-made wet weather conveyance drainage ditches located on the proposed project site that drain northwest into the wetland area.

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no adverse impacts to surface water.

Proposed Action Alternative – Under the Proposed Action Alternative, temporary impacts to on-site (wetlands with open water areas in the northwestern corner of the proposed project site) and off-site (Joes Bayou, Walts Bayou, and the Jourdan River) surface waters may occur due to transport of sediment from disturbed soils by stormwater runoff during construction. A new drainage system would be installed within the proposed project site directing stormwater to a new retention pond proposed for the southwest corner of the proposed project site. Overflow water from the proposed retention pond would drain to the existing wetland area located at the northwest corner of the project site. A drainage ditch will also be constructed along the new proposed access road; stormwater from this drainage ditch would flow north into an existing stormwater drainage ditch located along Athletic Drive and at the terminus of the proposed access road. This existing drainage ditch carries stormwater north from Athletic Drive toward the Jourdan River.

On November 24, 2008, agency consultation letters requesting project review were sent to the U.S. Environmental Protection Agency (EPA) Water Management Division, MDEQ Office of Pollution Control, and the Mississippi Soil and Water Conservation Commission (see Appendix B). No responses have been received to date.

The applicant has obtained an NPDES permit from MDEQ and has prepared a SWPPP which includes BMPs to minimize erosion of soil from the construction area and reducing off-site sediment transport (see Appendix C). In a letter dated January 5, 2009, MDEQ issued a Section 401 Water Quality Certification for the project (see Appendix B and C).

4.2.2 Floodplains

Executive Order (EO) 11988 (Floodplain Management) requires federal agencies to avoid direct and 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. Consistent with EO



11988, both conventional FIRMs and Preliminary Digital FIRMs (DFIRMs) were examined during the preparation of this EA. According to the conventional FIRM (FEMA, 1983; Community Panel Number 285251 0003 B) the southeastern half of the proposed site and the proposed access road corridor are located in Zone C, an area of minimal flooding outside the 500-year floodplain. The northwestern half of the project site is located in Zone B, an area inside the 500-year floodplain.

According to the Preliminary DFIRM (MDEQ, 2007; Map Number 28045C0353D), the southeastern half of the proposed site and portions of the proposed access road corridor are located in Zone X, an area inside the 500-year floodplain. However, the northwestern half of the project site and areas located at the origin and terminus of the proposed access road are located in Zone AE (EL 18), an area inside the 100-year floodplain where flood elevations reach 18 feet elevation North American Vertical Datum (NAVD) 1988.

FEMA has also developed ABFE Maps based on a flood frequency analysis completed by FEMA; these maps update the flood risk data with information on storms that have occurred in the past 25+ years, including (but not limited to) Hurricane Katrina. The ABFE maps show the northwestern half of the proposed site and portions of the proposed access road corridor have an ABFE between 18 and 21 feet (FEMA, 2006; ABFE Map Number MS-G10). Topographic elevations currently onsite are between 11 and 19 feet amsl. The proposed project site is outside of the coastal high hazard zone based on post-Katrina DFIRM maps.

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no impacts to floodplains.

Proposed Action Alternative – Under the Proposed Action Alternative, impacts to the floodplain would occur; FEMA would fund the construction of the school on a portion of the proposed site within the 100-year floodplain. To minimize impacts to the floodplain, the proposed school building would be constructed on the eastern portion of the site so that the majority of the structure would be located outside the 100-year floodplain. The proposed school building would be elevated above the ABFE with a finished floor elevation at 21 feet amsl. To achieve this elevation, approximately 18,000 cubic yards of fill material would be transported from a licensed facility located on Highway 90 in Waveland. In accordance with EO 11988, FEMA's Eight-Step Planning Process for Floodplains was completed to identify, minimize, and mitigate floodplain impacts (Appendix D).

4.2.3 Waters of the U.S. including Wetlands

The U.S. Army Corps of Engineers (USACE) regulates the discharge of dredged or fill material into waters of the U.S., including wetlands, pursuant to Section 404 of the CWA. Additionally, 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 for the area designated as the proposed project site shows nontidal, forested/scrub-shrub wetlands located on the northwestern corner of the site and extending north of the site. A wetland delineation was conducted by PAC Services, LLC on March 20, 2008, in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manual*. For any area to be considered a wetland area, the Corps manual requires three parameters to be present - greater than 50% dominance of hydrophytic vegetation, hydric soils, and presence of hydrology. During the field investigation, four isolated, nontidal wetland areas



totaling 2.33 acres were identified and delineated within the project site boundaries (see Wetland Permit Application in Appendix C).

Two of these isolated, nontidal wetland areas (comprising 0.12 acre) were delineated along the project's proposed access road corridor. Both wetland areas were dominated by loblolly pine (*Pinus taeda*), wax myrtle (*Myrica cerifera*), red maple (*Acer rubrum*), black gum (*Nyssa sylvatica*), inkberry (*Ilex glabra*), laurel greenbriar (*Smilax laurifolia*), and sedge (*Carex* sp.). These species are considered hydrophytic. Soils within the wetland areas are listed as hydric by NRCS, were saturated within the upper 12 inches, and contained drainage patterns and oxidized root channels, confirming the presence of hydrology.

Two other isolated, nontidal wetland areas (comprising 2.21 acres) were identified along the northwestern corner of the proposed project site. Both wetlands are identified as the remnant stormwater retention structures excavated during construction of the existing school complex which have naturalized to wetland conditions. These wetlands are separated by an upland berm and dominated by loblolly pine, wax myrtle, red maple, black gum, inkberry, laurel greenbriar, panicgrass (*Panicum repens*), and sedge. The soil in the wetland area is listed as hydric by NRCS, was inundated, and showed other indicators of hydrology.

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 (NOAA), the proposed project site is located within the Mississippi Coastal Zone (NOAA, 2004).

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no impacts to waters of the U.S., including wetlands.

Proposed Action Alternative – Under the Proposed Action Alternative, 1.43 acres of nontidal wetlands will be impacted by construction activities. The two wetland areas identified within the project's proposed access road corridor will be filled for a total of 0.12 acre. Of the two wetland areas identified as naturalized retention structures, the construction plan proposes to fill the wetland located closest to the school complex (1.28 acres) and partially fill (0.03 acre) the wetland in the far northwest corner. The remaining 0.93 acre of the wetland in the northwest corner will be retained as a naturalized wetland area. The applicant has been granted a Section 404 individual permit issued by the USACE and a Section 401 water quality certification issued by MDEQ, allowing the impact to the wetlands during construction activities. A condition set by these permits required the applicant to mitigate for the loss of size, value, and function due to the impact to these wetlands. The applicant has purchased 2.86 mitigation credits from a local wetland mitigation bank serving Hancock County to fulfill this requirement (see Appendix C).

Temporary impacts to the remaining wetland area may occur during the construction phase due to some sediment transport via stormwater runoff over disturbed soils during rain events. To reduce potential impacts, the applicant would implement appropriate Best Management Practices (BMPs), such as installing silt fences and revegetating bare soils as provided in their approved SWPPP.

In accordance with EO 11990, FEMA's Eight-Step Planning Process for Wetlands was completed to identify, minimize, and mitigate wetland impacts (Appendix D).



4.3 Transportation

The proposed project site is located at the northern end of Pine Street, which is the only access to the site (Figure 2 in Appendix A). Pine Street also serves as public and faculty access to the adjacent BWMS and Bay High School (BHS) via Blue Meadow Road and U.S. Highway 90.

No Action Alternative – Under the No Action Alternative, no impacts to transportation, site access, or traffic levels are anticipated because no construction would occur.

Proposed Action Alternative – Under the Proposed Action Alternative, a new access road to the proposed school site would be constructed at the northeast portion of the proposed project site. The new access road would connect Pine Street to Athletic Drive, providing access to the residential neighborhood that is located to the east. The new road would also provide for additional access from the adjacent residential community to the BWMS and Bay High School.

There would be a minor temporary increase in the volume of construction traffic on roads in the immediate vicinity of the proposed project site that could potentially result in a slower traffic flow for the duration of the construction phase. 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.

Minor long-term impacts to traffic levels on Blue Meadow Road, Pine Street, and Athletic Drive, as well as adjacent residential neighborhoods, would occur as a result from the increased vehicular traffic from school buses and public and faculty accessing the campus. Traffic devices including signal lights and/or stop signs may be installed during or on completion of construction to mitigate the minor long-term impacts to traffic levels.

On November 24, 2008, a letter requesting project review was sent to the Mississippi Department of Transportation; no response has been received to date.

4.4 Environmental Justice

EO 12898 (Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations) mandates that federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. Socioeconomic and demographic data for the project area were reviewed to determine if the proposed action would have a disproportionately high and adverse impact on minority or low-income persons.

No Action Alternative – Under the No Action Alternative, there would be no disproportionately high or adverse impacts on minority or low-income populations. All populations in the BWSD would continue to rely on temporary facilities for schoolchildren in grades K through 2.

Proposed Action Alternative – Under the Proposed Action Alternative, there would be no disproportionately high or adverse impacts on minority or low-income populations. The relocation of NBES would provide all populations in the community with a new permanent educational facility that would be located in a less flood-prone area in proximity to the former elementary school sites.

4.5 Air Quality

The Clean Air Act (CAA) requires that states adopt ambient air quality standards. The standards have been established in order to protect the public from potentially harmful amounts of pollutants. Under the CAA, 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, and preventing decreased visibility and damage to crops and buildings. EPA has set National Ambient Air Quality Standards (NAAQS) for the following six criteria pollutants: ozone (O₃), particulate matter (PM_{2.5}, PM₁₀), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), and lead (Pb). According to MDEQ, the entire state of Mississippi is classified as in attainment, meaning that criteria air pollutants do not exceed the NAAQS (MDEQ, 2002).

No Action Alternative – Under the No Action Alternative, there would be no short- or long-term impacts to air quality because no construction would occur.

Proposed Action Alternative – Under the Proposed Action Alternative, short-term impacts to air quality could occur during construction. To reduce temporary impacts to air quality, the construction contractors would be required to water down construction areas when necessary to minimize particulate matter and 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, PM₁₀, and non-criteria pollutants such as volatile organic compounds. To reduce the emission of criteria pollutants, fuel-burning equipment running times would be kept to a minimum and engines would be properly maintained.

4.6 Noise

Noise is generally defined as unwanted sound. 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. 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 including residences, schools, or hospitals (EPA, 1974). The adjacent BWMS and adjacent residences are the primary noise-sensitive receptors.

No Action Alternative – Under the No Action Alternative, there would be no short- or long-term impact to noise levels because no construction would occur.

Proposed Action Alternative – Under the Proposed Action Alternative, short-term increases in noise levels are anticipated during the construction period. To reduce noise impacts, construction activities would take place between normal business hours to the extent possible and would not occur on Sundays or Federal holidays. Equipment and machinery utilized on the proposed project site would meet all local, state, and federal noise regulations. Normal activities at the new facility would not generate noise levels to violate noise regulations and are unlikely to adversely affect the nearby residences or adjacent BWMS and BHS, as the existing schools already generate school-related noises in the area.

4.7 Biological Resources

The proposed project site consists mainly of previously disturbed, mowed grass areas used by BWSO for temporary trailers and recreation fields. The terrain is relatively flat and slopes downward in the northwestern portion of the site. Approximately 75 percent of the site is maintained mowed grass with scattered water oak (*Quercus nigra*) and loblolly pine trees; the remaining 25 percent of the site contains open water areas and forested/scrub-shrub wetland vegetation as described in Section 4.2.3.

The wooded area located north of the proposed project site and within the project's proposed access road corridor consists of a pine forest with a fairly developed understory and shrub layer. Woody vegetation observed in this area include several pine and mixed hardwood species such as slash pine (*Pinus elliottii*), loblolly pine, southern magnolia, red maple, black gum, live oak, water oak, and sweet bay. The shrub layer included inkberry, laurel greenbriar, wax myrtle, and chinese tallow (*Triadica sebifera*).

The U.S. Fish and Wildlife Service (USFWS) list 12 species as federally endangered (E) and threatened (T) animal species for Hancock County (USFWS, 2008):

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 conducted by Nationwide Infrastructure Support Technical Assistance Consultants (NISTAC) biologists on November 29 and December 11 and 12, 2007, confirmed that this site does not contain suitable habitat for federally listed species; therefore it is unlikely that any threatened or endangered species are present.

No Action Alternative – Under the No Action Alternative, there would be no construction and there would be no impacts to biological resources.

Proposed Action Alternative – Under the Proposed Action Alternative, approximately 2.5 acres of pine and mixed hardwood forest and approximately 7.5 acres of mowed grass area will be cleared for construction of the school; 1.43 acres of wetlands would also be impacted (see Section 4.2.3). No impacts to threatened or endangered species are anticipated. In a letter dated December 9, 2008, USFWS determined that the proposed project would not affect any listed species (see Appendix B).

4.8 Cultural Resources

A FEMA Archeologist and a FEMA Architectural Historian, both qualified in their respective disciplines under the Secretary of the Interior’s Professional Qualifications Standards (36 CFR Part 61), conducted an assessment of the project’s potential to affect historic properties within the Area of Potential Effects (APE). The APE is the geographic area within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist. For archaeological resources, the APE consists of the proposed site; for above-ground historic properties, the APE is extended out to a 0.5-mile radius around the proposed project site. This APE was previously established through FEMA consultation with the Mississippi State Historic Preservation Office (SHPO).

A site visit by FEMA and NISTAC staff on November 29, 2007, identified no extant historic properties within the proposed APE. Sanborn Insurance Maps from 1893 to 1930 were examined, but no buildings are depicted on the maps for this time span. During this time, the Bay St. Louis city limits did not extend into the project area. The city of Bay St. Louis originally centered along the coast and grew through time to the north. The modern day expansion began with the construction of Highway 90. The majority of the proposed project site, especially the central section, appears to have been disturbed from grading. Wetlands are located along the northwest border and stands of woods mark the northern border. The proposed access road is an overgrown, unused two track located along the north east border. To the east is a remnant wood line with a modern residential area shielded by the tree line. To the south and south east, a playing field, an access road, a parking area, and recent school buildings are located.

FEMA utilized U.S. Geological Survey (USGS) topographic mapping, provided by the SHPO, to identify known archeological survey areas and sites recorded on or in the vicinity of the proposed project site. These maps indicate that the APE for this project is completely within the boundaries of two previous archaeological surveys – specifically 92-373, surveyed in 1992, surveyor unknown, and 96-044, surveyed by Mann in 1996 for the Hollywood Casino. No sites were identified from either survey. Areas to the north, northeast and northwest have also been surveyed (81-054, 92-049, and 94-033) with similar negative results. According to information gathered from SHPO’s previously recorded site maps and site cards (also on file with FEMA), the sites in closest proximity are the following:

Two sites, 22HA510 (Joes Bayou Site) and 22HA542 (Lambert Site) are approximately 1 mile to the northwest on Joes Bayou. Site 22HA510 was originally recorded as a village site/shell midden located on the south bank of the mouth of the Jourdan River. The site was revisited in 1981 by the University of Illinois. The 1981 site visit indicated that the Joes Bayou Site dated to the Late Woodland and Mississippian occupations. Disturbance from a recently constructed boat slip had impacted part of the site area but apparently no survey had been conducted prior to this boat ramp installation, which was permitted under Section 404 of the CWA. The Lambert Site,



22HA542, is recorded as dating from the Late Woodland (possibly Early Archaic and Early Woodland) with a historic component located on Lambert Creek (which may also be Joes Creek Bayou) near the confluence of the bayou with the Jourdan River. Notes on the site form identify it as a shell midden with a historic component.

Located 3,000 feet to the northeast, 22HA558 is recorded as a historic site by Charles Gray, a local historian. He identified the site as a field camp for a Scottish Platoon during the War of 1812. There are no collections associated with this site, and it is thought to be destroyed. 22HA544 appears to be an isolated projectile point but no diagnostic information was given. The isolate was found approximately 6,500 feet on the coast line to the northeast. 22HA605, the Bay Waveland Yacht Club Site, is recorded 6,500 feet to the east on the coast and includes Archaic, Woodland, and Mississippian components, as well as the remains of a wrecked schooner. The Ramsey Mound, 22HA528, is approximately 8,000 feet to the southeast and 200 feet from the coast. The flat topped mound site (platform) rises 6 feet above the present day surface and measures approximately 130 feet by 150 feet at the base narrowing to 30 feet by 50 feet at the top. The site has never been systematically tested, but is said to consist of shell and dark midden fill. Site 22HA613 is located immediately to the east, across Beach Boulevard. This is a multi-component site with Woodland, Mississippian, and Historic occupations. The site has been tested and is eligible for listing to the National Register of Historic Places (NRHP). The site is likely associated with the Ramsey Mound.

Sites 22HA541 and 22HA553 are recorded 8,000 feet to the southeast along the coast; the site files indicate that they may be the same site. Site 22HA541 is recorded as Late Archaic/Early Woodland and Historic and Site 22HA553 is recorded as a blacksmith shop. Very little additional information is available.

No Action Alternative – Under the No Action Alternative, no construction would occur and there would be no impacts to archeological or historic architectural resources.

Proposed Action Alternative – Under the Proposed Action Alternative, no impacts to archeological or historic architectural resources are anticipated. In agency consultation letters dated December 22, 2008, to the SHPO and the Mississippi Band of Choctaw Indians Tribal Historic Preservation Officer (THPO), FEMA determined that “No Historic Properties will be Affected” by the proposed undertaking. In a letter dated December 30, 2008, SHPO concurred with FEMA’s determination (see Appendix B). No response has been received to date from THPO.

If during the course of work, archeological artifacts (prehistoric or historic) or human remains are discovered, the applicant shall stop work in the vicinity of the discovery and take all reasonable measures to avoid or minimize harm to the finds. The applicant shall inform their Public Assistance (PA) program contacts in FEMA, who will in turn contact FEMA Historic Preservation Staff. Work will not proceed until FEMA Historic Preservation Staff have completed consultation with the SHPO and the THPO.

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.

Bay St. Louis and the entire Mississippi Gulf coast are undergoing recovery efforts after Hurricane Katrina caused extensive damages. The recovery efforts in the area include demolition, reconstruction, and new construction. These projects and the proposed project may have cumulative temporary impacts on air quality, noise, traffic, and surface water in Bay St. Louis during 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 the proposed project in Pascagoula, 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 EA through publication of a public notice in a local newspaper. FEMA will conduct an expedited 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 letter requesting project review during the preparation of this EA. Responses received to date are included in Appendix B.

- U.S. Army Corps of Engineers, Mobile District, Alabama
- 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 (SHPO)
- Mississippi Band of Choctaw Indians (THPO)
- 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, groundwater, public health and safety, hazardous materials, socioeconomic resources, environmental justice, threatened or endangered species, or cultural resources are anticipated under the Proposed Action Alternative.

During the construction period, short-term impacts to soils, surface water, wetlands, transportation, air quality, and noise are anticipated. Short-term impacts will be mitigated utilizing erosion and sediment control BMPs, appropriate signage, and proper equipment maintenance.

The project will affect the floodplain; fill material will be placed on the site to elevate the school above the 100-year floodplain and ABFE. The applicant has obtained a permit and will provide mitigation for 1.43 acres of nontidal wetland impacts. There would be minor long-term impacts to traffic levels in the vicinity of the NBES and BWMS campus due to the increased school capacity; these impacts would be mitigated with traffic devices if necessary. Approximately 7.5 acres of mowed grass and 2.5 acres of upland wooded habitat would be cleared for construction of the school.

9.0 REFERENCES

- Environmental Data Resources, Inc (EDR). 2007. Aerial Photo Decade Package, North Bay Elementary School, Bay St. Louis, Mississippi, Inquiry # 2081300.5. November 20, 2007.
- Federal Emergency Management Agency (FEMA). 1983. *Flood Insurance Rate Map, City of Bay St. Louis, Mississippi, Hancock County. Community Panel Number 285251 0003 B.* Map Revised November 16, 1983.
<http://msc.fema.gov/webapp/wcs/stores/servlet/QuickOrderResultView>. Accessed November 12, 2008.
- FEMA. 2006. *Hurricane Katrina Surge Inundation and Advisory Base Flood Elevation Maps, Jackson County, Mississippi.* Map Number MS-G10. March 15.
http://www.fema.gov/hazard/flood/recoverydata/katrina/katrina_ms_hancock.shtm
Accessed November 12, 2008.
- Mississippi Automated Resource Information System (MARIS). 2008.
Surface Geology. <http://www.maris.state.ms.us/HTM/DownloadData/Statewide-Theme.htm> Accessed April 24, 2008.
- Mississippi Department of Environmental Quality (MDEQ). 2002. *New Air Quality Standards.* http://deq.state.ms.us/MDEQ.nsf/page/Air_NewAirQualityStandardsandAttainment?OpenDocument. Accessed November 12, 2008.
- MDEQ. 2007. *Federal Emergency Management Agency Preliminary Flood Insurance Rate Map, Hancock County, Mississippi and Incorporated Areas.* Map Number 28045C0353D. November 15.
<http://geology.deq.ms.gov/floodmaps/status.aspx?county=Hancock>. Accessed November 12, 2008.
- National Oceanic and Atmospheric Administration (NOAA). 2004. *State Coastal Zone Boundaries.* <http://coastalmanagement.noaa.gov/mystate/docs/StateCZBoundaries.pdf>. Accessed November 12, 2008.
- Stewart, R.A. 2003. Physiographic Regions of Mississippi. Handout, Department of Biological Sciences, Delta State University. 6 pp.
<http://www.marshdoc.com/physiography/physiography.html>. Accessed November 18, 2008.
- U.S. Army Corps of Engineers (USACE). 1987. *Corps of Engineers Wetland Delineation Manual.*
- U.S. Census Bureau. 2000. Population and Income. Accessed November 12, 2008.
- USDA/NRCS. 2008. <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed November 12, 2008.
- U.S. Environmental Protection Agency (EPA). 1974. *EPA Identifies Noise Levels Affecting Health and Welfare.* <http://www.epa.gov/history/topics/noise/01.htm>. Accessed November 12, 2008.

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- U.S. Fish and Wildlife Service (USFWS). 2007. *National Wetlands Inventory Maps*.
<http://wetlandsfws.er.usgs.gov/wtlnds/launch.html>. Accessed November 12, 2008.
- USFWS. 2008. *Mississippi: List of Threatened and Endangered Species by County*. June.
- U.S. Geological Survey (USGS). 2008. *Ground Water Atlas of the United States, Arkansas, Louisiana, Mississippi HA 730-F*. http://capp.water.usgs.gov/gwa/ch_f/F-text3.html.
Accessed November 12, 2008.

Appendix A

Figures

Appendix B
Agency Coordination

Appendix C

Permits

Appendix D

Eight-Step Planning Process for Floodplains and Wetlands