UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

SEP 28 2010

To All Interested Government Agencies and Public Groups:

Under the National Environmental Policy Act (NEPA), an environmental review has been performed on the following action:

TITLE: Amendment to Center for Marine Education and Research - Ocean Expo Complex

LOCATION: Gulfport, Mississippi (MS)

SUMMARY: The Institute for Marine Mammal Studies (IMMS) of Gulfport, MS, a 501 (C) (3) non-profit organization, is proposing Ocean Expo in D'Iberville, MS, as a state-of-the-art aquarium and learning center that will provide both students and the general public an opportunity to learn about nature and marine mammals. The IMMS obtained approval under award number NA03NMF4690390 for the Center for Marine Education and Research. In March 2005, National Oceanic and Atmospheric Administration (NOAA) approved an Environmental Assessment (EA) for the Center for Marine Education and Research, which did not address any construction sites within the boundaries of the City of D'Iberville. In February 2009, the Center for Marine Education and Research in Gulfport was completed and the award ended. IMMS also obtained approval under award number NA05NMF4691158 for Ocean Expo Complex. Hurricane Katrina unexpectedly prevented the construction of the complex. IMMS has since found a different site for the Ocean Expo complex, which is described in the supplemental EA. All of the construction will be completed using the federal funding received through 2009 under award number NA05NMF4691158.

IMMS identified four alternatives as potentially suitable sites for construction of Ocean Expo. Alternative Site 1 (D'Iberville) best meets the purpose and need criteria, as well as environmental and land use criteria. The proposed project involves no significant adverse impacts to cultural resources, species or habitats, water resources and quality, floodplains, air quality, utilities or services, traffic, or environmental justice. The Ocean Expo project will provide benefits (although not at a level of significance) through a well-planned research and educational facility for the study of marine mammals in the Gulf of Mexico, without significant, adverse impacts.

RESPONSIBLE OFFICIAL: Roy Crabtree, Ph.D.
Regional Administrator
National Marine Fisheries Service, National Oceanic and Atmospheric Administration (NOAA)
Southeast Regional Office
263 13th Avenue S.
St. Petersburg, FL. 33701
727-824-5301

The environmental review process led us to conclude that this action will not have a significant impact on the environment. Therefore, an environmental impact statement was not prepared. A copy of the FONSI, including the EA, is enclosed for your information.

Although NOAA is not soliciting comments on this completed EA/FONSI we will consider any comments submitted that would assist us in preparing future NEPA documents. Please submit any written comments to the Responsible Official named above.

Sincerely,

Paul Doremus, Ph.D.
NOAA NEPA Coordinator

Enclosures

SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT

OCEAN EXPO EDUCATION AND CONSERVATION CENTER D'IBERVILLE, MISSISSIPPI

PREPARED FOR:

THE INSTITUTE FOR MARINE MAMMAL STUDIES
P.O. BOX 7000
OCEAN SPRINGS, MISSISSIPPI 39566-7000

AND

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

PREPARED BY:

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September 2010

EXECUTIVE SUMMARY

This supplemental environmental assessment (EA) identifies, describes, and evaluates potential impacts to the environment that are associated with the proposed construction of Ocean Expo, an education and conservation center proposed for D'Iberville, Mississippi (MS). The Institute for Marine Mammal Studies (IMMS) of Gulfport, MS, a 501 (C) (3) non-profit organization, is proposing Ocean Expo as a state-of-the-art aquarium and one-of-a-kind learning center that will provide both students and the general public an opportunity to learn about nature and marine mammals.

The IMMS obtained approval under award number NA03NMF4690390 for the Center for Marine Education and Research of approximately 12,000 square (sq) feet (sq ft) with FY03 funding of $2,423,000, with an FY04 supplement of $2,718,359, for a total of $5,141,359. In March 2005, National Oceanic and Atmospheric Administration (NOAA) approved an EA for the Center for Marine Education and Research. That EA did not address any construction sites within the boundaries of the City of D'Iberville. In February 2009, the Center for Marine Education and Research in Gulfport was completed and award number NA03NMF4690390 ended.

IMMS also obtained approval under award number NA05NMF4691158 for an approximately 9,000 sq ft complex (Ocean Expo Complex) as part of the Center for Marine Education and Research with FY05 funding of $4,681,868. In 2006, Award NA05NMF4691158 was amended to add approximately 8,000 sq ft to the Ocean Expo complex for an additional $4,567,528, for a project total of $9,249,396. As a result, the new size of Ocean Expo is approximately 17,000 sq ft. Hurricane Katrina unexpectedly prevented the construction of Ocean Expo in Gulfport. The original site, located at Jones Park, became unusable after Hurricane Katrina because of new FEMA regulations and requirements and subsequent building and insurance costs associated with the site location in the velocity zone of the 100-year floodplain.

IMMS has since found several alternative sites, which are described in this document. In May 2009, IMMS requested, and NOAA approved, a no-cost award period extension until November 30, 2011, to provide time for construction of the Ocean Expo complex.

IMMS identified four alternatives as potentially suitable sites for construction of Ocean Expo. The four sites were fully evaluated to determine the most practicable alternative. The primary criteria for evaluating the alternatives were developed based upon the project purpose and need, as well as other land use and environmental factors important in projects of this nature. The analysis revealed that Alternative Sites 2, 3, and 4 do not meet all of the proposed site evaluation criteria as well as the site of the proposed action (Alternative 1). Of the four alternative sites, Alternative Site 1 (proposed action) best meets the purpose and need criteria, as well as environmental and land use criteria. The site has high visibility and traffic access, low flooding potential and insurance costs, minimal environmental impacts, and is in a dynamic and growing area of D'Iberville.

The (Alternative 1) 6.5-acre Ocean Expo project site is located in Harrison County, MS, within the boundaries of the City of D'Iberville. The site is located south of Interstate 10 and west of Interstate 110. The City of D'Iberville has granted IMMS a 99-year, renewable lease to the 6.5 acre property. This lease is similar to the lease IMMS for the property where the Center for Marine Education and Research was constructed.

The components of Ocean Expo would include: aquariums, an aviary, interactive exhibits, multimedia presentations, a marine education center, an auditorium, and an inside (artificial) riverine display tank. An existing drainage easement would be re-routed, and drainage would be conveyed through two 48-inch culverts. Seawater for exhibit aquariums and holding tanks would be taken from Back Bay, and conveyed through two 6-inch pipelines north to the Ocean Expo site. Return water changed out from exhibit and holding aquariums would be conveyed back toward Back Bay through a 12-inch pipeline, mostly along the same alignment as the water supply lines. The return water would be discharged into Back Bay under the requirements of the National Pollutant Discharge Elimination System (NPDES) permit to be obtained from the MS Department of Environmental Quality (MDEQ). The outfall would be located on the existing trestle supporting the City of D'Iberville wastewater treatment plant outfall line.

The project would fill 0.58 acres of low-quality wetlands associated with an existing drainage easement. Therefore, a U.S. Army Corps of Engineers (USACE) Section 404 wetland permit must be secured prior to project implementation. Direct wetland impacts would be properly mitigated in accordance with the conditions stipulated in the permit. Compensatory mitigation for wetland impacts would be accomplished through purchase of credits from an approved wetland mitigation bank that serves Harrison County.

Secondary wetland impacts would be avoided using appropriate best management practices (BMPs) during construction, and through implementation of a MDEQ–approved post-construction Stormwater Management Plan. The stormwater plan would be submitted and approved as part of the MDEQ water quality certification for the project. MDEQ is currently involved through the Sec 404 permitting process, within which it has Section 401 certification responsibility.

Supply water removal from Back Bay and discharge of return water will require an NPDES permit from the MDEQ.

Prior to and during project implementation, MDEQ water quality certification coverage would be retained under the State's Storm Water Construction General Permit (MSR10) to discharge storm water associated with construction activity including clearing, grading, excavating or other land disturbance activity disturbing more than five acres.

Environmental consequences of the project were evaluated herein. It was determined that the proposed project involves no significant adverse impacts to cultural resources, species or habitats, water resources and quality, floodplains, air quality, utilities or services, traffic, or environmental justice.

TABLE OF CONTENTS

TABLE OF CONTENTS (CONT'D)

APPENDICES

LIST OF FIGURES (Appendix A)

Figure 11. Planned roadway improvements in the vicinity of the Ocean Expo project site.

1.0 DESCRIPTION OF PROPOSED ACTION

1.1 Introduction

This supplemental environmental assessment (EA) identifies, describes, and evaluates potential impacts to the environment that are associated with the proposed construction of Ocean Expo, an education and conservation center proposed for D'Iberville, MS. The Institute for Marine Mammal Studies (IMMS) of Gulfport, MS, a 501 (C) (3) non-profit organization, is proposing Ocean Expo as a state-of-the-art aquarium and one-of-a-kind learning center that will provide both students and the general public an opportunity to learn about nature and marine mammals.

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To meet environmental compliance requirements for a project receiving NOAA funding, NOAA must assess the proposed action in terms of its potential consequences to the natural and human environment. This report identifies actions that would minimize potential environmental consequences associated with the project.

This document was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969; the Council on Environmental Quality (CEQ) regulations implementing NEPA (Title 40 of the United States Code of Federal Regulations [CFR], Parts 1500-1508); and NOAA Administrative Order 216-6, Environmental Review Procedures for Implementing the National Environmental Policy Act.

1.2 Location of the Proposed Action

The 6.5-acre project site is located in Harrison County, MS, within the boundaries of the City of D'Iberville (Figure 1; Appendix A). The site is located south of Interstate 10 and west of Interstate 110.

Seawater for exhibit aquariums and holding tanks would be taken from Back Bay, and conveyed through two 6-inch pipelines north to the Ocean Expo site (Figure 1). Return water changed out from exhibit and holding aquariums would be conveyed through a 12-inch pipeline toward Back Bay, where it would be discharged. The outfall would be located on the existing trestle supporting the City of D'Iberville wastewater treatment plant outfall line. The pipeline alignments would follow existing utility easements along road rights-of-way (ROWs).

1.3 Purpose and Need for Action

The purpose of the proposed project is to construct Ocean Expo as an aquarium and learning center about nature and marine mammals. Ocean Expo would combine elements of aquatic displays, shows, and unique interactive features that will make for an educational and learning experience. The facility would enable IMMS to provide opportunities to make a positive impact on visitors' understanding of dolphins and other marine mammals in the north central Gulf of Mexico. IMMS' work is consistent with the Marine Mammal Protection Act (MMPA). IMMS is the only institution in MS with a permit to handle protected mammals as required by the MMPA.

Impacts may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect will be beneficial. The Ocean Expo site will provide benefits through a well-planned research and educational facility for the study of marine mammals in the Gulf of Mexico. To achieve those benefits, the Ocean Expo site needs to be located at a location with sufficient parking, ingress and egress to and from the facility, high visibility, potential for other planned development nearby, and minimal adverse impacts to natural resources.

1.4 Proposed Action

The IMMS proposes to create an education center for marine mammals on 6.5 acres of land in D'Iberville, MS (Alternative 1). The proposed site plan is shown in Figure 2 (Appendix A). The components of Ocean Expo would include: aquariums, an aviary, interactive exhibits, multimedia presentations, a marine education center, an auditorium, and an inside (artificial) riverine display tank.

In recent years the concept of "Green Buildings" or buildings that are designed to include elements and features that balance environmental responsiveness, resource efficiency, and community sensitivity has become an important design objective for new building construction. In 1994, the U.S. Green Buildings Council established a rating system to define and measure "green buildings". The system, known as Leadership in

Energy and Environmental Design or LEED™ incorporates existing proven technologies and evaluates the environmental performance from a whole building perspective over the building's life cycle. Green building practices have been shown to substantially reduce negative environmental impacts and reverse the trend of unsustainable construction activities. LEED practices will be incorporated as practicable.

A drainage ditch currently occupies a portion of the proposed project site, conveying runoff north toward the Tchoutacabouffa River. The existing drainage easement would be re-routed and drainage would be conveyed through two 48-inch culverts (Figure 2). Re-routing and installing culverts in the drainageway, and construction in wetlands, would require a Section 404 permit from the USACE. Mitigation will be required as compensation for wetland impacts.

Seawater for exhibit aquariums and holding tanks would be taken from Back Bay, and conveyed through two 6-inch pipelines north to the Ocean Expo site. The pipeline alignment would follow existing utility easements along ROWs (Figures 3A through 3C). Return water changed out from exhibit and holding aquariums would be conveyed through a 12-inch pipeline toward Back Bay, mostly along the same alignment as the water supply lines. The return water would be discharged into Back Bay. The outfall located on the existing trestle supporting the City of D'Iberville wastewater treatment plant outfall line. Supply water removal and discharge for the project will require an NPDES permit from the MS Department of Environmental Quality (MDEQ). The NPDES requirement avoids adverse environmental impacts on Essential Fish Habitat (EFH) in Back Bay.

1.5 Relevant Regulations and Permits Required

A number of local, state, and federal regulations are addressed in this supplemental EA that are relevant and necessary to secure environmental compliance for the proposed project. These include regulations regarding wetlands, water quality, species and habitats, coastal zones, cultural resources, and floodplains.

The USACE regulates the discharge of dredged or filled material into water of the US, including wetlands, pursuant to Section 404 of the Clean Water Act (CWA). The CWA is a 1977 amendment to the Federal Water Pollution Control Act of 1972, which set the basic structure for regulating discharges of pollutants to waters of the United States. Additionally, EO 11990 (Protection of Wetlands) requires federal agencies to avoid, to the extent possible, adverse impacts to wetlands. Section 401 of the CWA established State Certification of water quality, which in MS is administered by the MDEQ.

The Endangered Species Act (ESA) of 1973 protects species that are listed by the federal government as "endangered" or "threatened." Two sections, 7 and 9, are central. ESA Section 9 makes it unlawful for anyone to "take" a listed species, which includes significantly modifying its habitat. Section 7 applies to federal agencies, and covers their issuing permits for private activities, such as Section 404 permits issued by the USACE

to people who want to do construction work in waters or wetlands. Section 7 imposes an affirmative duty on federal agencies to ensure that their actions are not likely to jeopardize the continued existence of a listed species (plant or animal) or result in the destruction or modification of critical habitat. The ESA is enforced by the U.S. Fish and Wildlife Service (FWS) and NOAA.

The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801-1882) established regional Fishery Management Councils and mandated that Fishery Management Plans (FMPs) be developed to responsibly manage exploited fish and invertebrate species in federal waters of the United States. When Congress reauthorized this act in 1996 as the Sustainable Fisheries Act, several reforms and changes were made. One change was to charge NOAA with designating and conserving EFH for species managed under existing FMPs. This was intended to minimize, to the extent practicable, any adverse effects on habitat caused by fishing or non-fishing activities, and to identify other actions to encourage the conservation and enhancement of such habitat. EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity".

The Coastal Zone Management Act (CZMA) enables coastal states, including MS, 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. The proposed project is located within the MS coastal zone as defined in the MS Coastal Program (MCP) of 1980. The MCP is administered by the Mississippi Department of Marine Resources (MDMR). The MCP was developed by the MDMR in accordance with the Coastal Zone Management Act of 1972, and guides and regulates the use of coastal resources in the MS coastal zone. Along with the USACE, the MDMR regulates wetlands in the coastal zone. MDMR found the project to be consistent with MCP on August 30, 2010, contingent on MDEQ 401 certification (see letter in Appendix C).

Section 106 of the National Historic Preservation Act (NHPA) of 1966, 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 (ACHP) an opportunity to comment on federal projects that will have an effect on historic properties 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 (NRHP). If adverse effects on historic, archaeological, or cultural properties are identified, then agencies must attempt to avoid, minimize, or mitigate these impacts to resources considered important in our nation's history. Federal emergency response actions operate under a programmatic agreement with State Historic Preservation Officers to take into account historic properties when planning and conducting emergency response actions. The MS Department of Archives and History (MDAH) collects, preserves, and provides access to the archival resources of the state, and oversees statewide programs for historic preservation.

The designated Tribal Historic Preservation Officer (THPO) must also be consulted, due to the potential for projects occurring on, or affecting historic properties on, their tribal lands. This consultation has already occurred.

For floodplain management, Executive Order (EO) 11988 requires federal agencies to avoid to the extent possible the long and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative.

Permits required for environmental clearance for the proposed Ocean Expo project will be acquired prior to on-site construction activities. The list of required permits follows:

- A USACE Section 404 Permit for wetland impacts will be obtained for the project and all permit conditions must be implemented and followed.

- An MDEQ Section 401 Water Quality Permit will be obtained for the project and all permit conditions must be implemented and followed. (The 30-day public comment period started August 30, 2010.)

- Concurrence from MS Department of Marine Resources (MDMR) for Coastal Consistency will be obtained for the project and all permit conditions must be implemented and followed.

- An NPDES permit from the MDEQ will be obtained for the supply water removal from Back Bay and discharge of return water.

- Stormwater management plans will be required to be developed and approved by MDEQ as part of the 401 Certification process.

- Prior to and during project implementation, coverage shall be retained under the State's Storm Water Construction General Permit (MSR10) to discharge storm water associated with construction activity including clearing, grading, excavating or other land disturbance activity disturbing more than 5 acres.

1.6 Scope of Environmental Review

In accordance with NEPA, agencies are required to assess the environmental consequences of their proposed actions during the decision-making process. The intent of NEPA is to protect, restore, or enhance the environment through well-informed federal decisions. In accordance with NOAA Administrative Order 216-6, the scope of this analysis will be to consider the impacts of the proposed action on the environment. Based on the findings of the EA, NOAA will decide to:

Issue a Finding of No Significant Impact (FONSI); or

Prepare an Environmental Impact Statement (EIS).

Environmental consequences of the project were evaluated, and it was determined that the proposed project involves no significant adverse impacts to cultural resources, species or habitats, water resources and quality, floodplains, air quality, utilities or services, traffic, or environmental justice. Although the project would fill 0.58 acres of low-quality wetlands associated with an existing drainage easement at the proposed facility site, this impact would be properly mitigated in accordance with the conditions stipulated in the Section 404 permit.

2.0 PROJECT ALTERNATIVES

This chapter describes the no-action alternative, alternative project sites, screening criteria used to evaluate alternative sites, and alternatives that were eliminated from further consideration. The alternatives analysis presents the basis for identification of the preferred alternative (proposed action).

2.1 No-Action Alternative

Under the No Action Alternative, the IMMS would not build the Ocean Expo. No action would not meet the project purpose and need. As a result, the project and its related public education goals and benefits would not be realized. The no-action alternative therefore is not viable.

2.2 Alternative Sites

IMMS identified the following four alternatives (Figure 4) as potentially suitable sites for the proposed action. Further details on the sites are found in Section 2.4.

- Alternative 1 (D'Iberville) – This is the preferred alternative (proposed action), located on the southwest corner of the I-10 and I-110 interchange. The property is owned by RAMCO, and is currently undeveloped and unoccupied. The general elevation of the site is 25 feet National Geodetic Vertical Datum of 1988 (NGVD88).

- Alternative 2 (Bayview Avenue) – This alternative site is located on the Back Bay of Biloxi, east side I-110. The property is owned by the City of Biloxi and is currently not in use. The general elevation of the site is 5 ft NGVD88.

- Alternative 3 (Gulfport Centennial Plaza) – This alternative site is located north of Highway 90, on Railroad Street. The general elevation of the site is 23 ft NGVD88.

- Alternative 4 (Gulfport Westside Park) – This alternative site is located on Highway 90. The general elevation of the site is 11 ft NGVD88.

2.3 Alternative Screening Criteria

The four potential project sites were evaluated to determine the most practicable alternative. Appendix B includes a sample scoring sheet listing the criteria used to evaluate the four alternative sites. The primary criteria for evaluating the alternatives were developed based upon the project purpose and need, as well as other land use, economic incentives, and environmental factors important in projects of this nature. The minimum criteria used to screen the alternatives were as follows:

- Location in Harrison County, MS
- At least six acres of contiguous land to accommodate intended uses, with an additional two to three acres for parking
- Ingress and egress to and from the facility in roadway and signage
- Visibility from main roadways
- Other planned development, either current or future, in and around the vicinity of Ocean Expo
- Minimal adverse impacts to natural resources

2.4 Alternatives Analysis

A review panel conducted a rigorous evaluation of each alternative site against the site-selection criteria. The analysis revealed that Alternative Sites 2, 3, and 4 do not meet all of the proposed site evaluation criteria compared to Alternative 1. The following is a brief description of the results of the comparison of each alternative to the site-selection criteria.

Alternative 2, located on the Back Bay of Biloxi, meets much of the project screening criteria, but would require significant and expensive site preparation. Most significantly, this site would have high insurance costs and environmental concerns due to its location in the velocity zone of the 100-year floodplain.

Alternative 3, located at the Gulfport Centennial Plaza, has poor tourist visibility due to its location off of Highway 90, and does not have adequate access to major roadways and highways. This site is isolated from both active and planned development.

Alternative 4, located at Westside Park, has poor tourist visibility and is isolated from both active and planned development. Moreover, the site is mostly located in the velocity zone of the 100-year floodplain.

Alternative 1, located on the southwest quadrant of the I-10/I-110 interchange, best meets the project screening criteria evaluated in Appendix B. Of the four alternative sites, Alternative 1 best meets the purpose and need criteria, as well as the proposed environmental and land use criteria. For example, EFH will not be adversely impacted under Alternative 1. That site has high visibility and traffic access, and is in a dynamic

and growing area of D'Iberville. Compared to Sites 2 and 4, both of which are wholly or partly in the 100-year floodplain, there are low flooding potential and insurance costs with Alternative 1, since that site is outside the 100-year floodplain. Though Site 3 is also outside the 100-year floodplain, it has limited access to major roadways, and poor visibility, and therefore was rejected as not meeting the criteria.

Because Alternative Sites 2, 3, and 4 do not meet all the proposed site evaluation criteria, these locations are not further analyzed in this supplemental EA. Only Alternative 1 and the No-Action Alternative will be considered further in the remaining sections of this document.

3.0 AFFECTED ENVIRONMENT

Alternative 1 is not expected to have effects on the quality of the human environment that are likely to be highly controversial. The construction of Ocean Expo is not expect to be controversial and will conform to local and regional construction requirements.

The possible effects on the human environment are neither highly uncertain nor involve unique or unknown risks. IMMS will use standardized educational and research protocols at Ocean Expo that are being successfully used at the existing research facility in Gulfport.

3.1 Land Uses

The proposed Ocean Expo site is located in Harrison County, MS, within the boundaries of the City of D'Iberville. The proposed project is located immediately southwest of the Interstate 10 and Interstate 110 interchange in D'Iberville, MS. It is bounded on the north and east by the interchange including on and off ramps, on the south by a residential area, and on the west by a small pine plantation and McAlpine Road. The surrounding area is mostly residential with associated infrastructure such as roads and driveways. Past disturbances in the project area include logging activities, clearing, and erosion.

3.2 Physiography

The proposed project site lies within the Gulf Coast Flatwoods section of the Southern Coastal Plain. The proposed project site is a small representative parcel of this section. The region has a flat to gently undulating plain, with low gradient streams containing sand and silt bottoms.

A Provisional Topographic Elevation Contour Map prepared by FEMA (Figure 5; Appendix A) indicates that slopes in the proposed development area are gentle, with elevations ranging from approximately 24 ft to 26 ft above mean sea level.

3.3 Geology and Soils

Soils on the proposed project site are shown in Figure 6 (Appendix A). Soils are described as mostly sandy and silty loams with sandy loam subsoils, and are classified into the Latonia loamy sand association with 0-2% slopes and the Harleston fine sandy loam association with 0-2% slopes. Both of these soil classifications are well drained to moderately well drained. The small wetland areas on the project site have sandy muck soils.

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. The proposed project site is in the Gulfport-Biloxi urbanized area designated by the U.S. Census Bureau, and is not subject to the FPPA. The project site does not have prime farmlands, or other such unique characteristics.

3.4 Water Resources

A drainage easement lies within the 6.5-acre project site, and conveys stormwater runoff to the north toward the Tchoutacabouffa River. The MS Department of Environmental Quality (MDEQ) classifies the Tchoutacabouffa River as suitable for recreation.

The Back Bay of Biloxi is considered brackish and salinity fluctuates depending on the influence from tides and freshwater discharge from connecting bayous and streams. Typical surface salinities in Back Bay range from 8-12 ppt. Back Bay is classified by MDEQ as suitable for recreation and shellfish harvesting, depending on location.

Groundwater

Several major hydrogeologic units exist in the area of the proposed project site, including the coastal deposits surficial aquifer, the Citronelle Aquifer, and the Miocene aquifer system. Within the MS coastal area, groundwater is obtained primarily from deep wells in the Miocene aquifer.

The project site is in Harrison County, which is outside of the streamflow and recharge source zones of the Southern Hills Regional Aquifer, the closest designated sole-source aquifer. This sole-source aquifer is approximately 45 miles from the project site.

Floodplains

The project is located outside the floodplain, in Zone X as reported in FEMA Flood Insurance Rate Map Number 28047C0284G (Figure 7). The Zone X designation denotes areas determined to be outside the area of 0.2% annual chance of flood.

Wetlands

Barry A. Vittor & Associates, Inc. delineated jurisdictional wetlands on the proposed 6.5-acre project site at I-10 (see Figure 2). Wetland data sheets and a delineation map are included in Appendix D. A 0.58-acre wetland area associated with the existing drainage easement consists primarily of Chinese tallow (*Triadica sebifera*), sweetbay magnolia (*Magnolia virginiana*), and red maple (*Acer rubrum*), with a Chinese privet (*Ligustrum sinense*) understory. Herbaceous wetland plants include alligator weed (*Alternanthera philoxeroides*), soft rush (*Juncus effusus*), and spike rush (*Eleocharis* sp).

Wetlands on the proposed Ocean Expo project site were evaluated in April 2010 using the Wetland Rapid Assessment Procedure (WRAP) recommended by the Mobile District USACE. A WRAP assesses functional values such as use by wildlife, wetland vegetation and hydrology, adjacent buffers, and water quality input and treatment. Generally, a WRAP score of 0-0.50 represents low-quality wetland habitat, 0.51-0.75 is medium-quality, and 0.76-1.00 indicates high quality.

The wetland on the project site has a WRAP score of 0.30, indicating low quality. There is minimal use for animals, including sparse forage grounds in surrounding uplands. There is greater than 75% invasive plant species in the wetland, and the site is surrounded by residential and commercial development. Site conditions indicate recent clearing for maintenance of the drainage easement. Non-indigenous plants currently exist on the project site and in the surrounding area; however, construction of the facility will remove the existing invasive vegetation from the site. Maintenance of disturbed areas after construction will prevent the spread of invasive plants.

The pipeline alignments between Back Bay and the Ocean Expo complex site follow existing utility easements, mostly along ROWs. These disturbed and maintained easements and ROWs do not contain wetlands, except for wetlands along and near the proposed terminus of the 12-inch return water line that would discharge into Back Bay.

Wild and Scenic Rivers

The only designated Wild and Scenic River in MS is a segment of Black Creek in Perry County, approximately 25 miles from the project site. An additional segment of Black Creek extending into Stone County is listed for possible inclusion in the Wild and Scenic Rivers System, but the closest point on this segment would be more than 20 miles from the project site. Black Creek is part of the Pascagoula River Basin, which does not include the proposed project site. Therefore, no effects on Wild and Scenic Rivers are expected.

3.5 Upland Vegetative Community

Upland habitat in the 6.5-acre project site consists of an overstory of water oak (*Quercus nigra*), red maple, and Chinese tallow, with fewer black cherry (*Prunus serotina*), live oak (*Quercus virginiana*), and sweetgum (*Liquidambar styraciflua*). An understory is mainly wax myrtle (*Myrica cerifera*), ink berry (*Ilex glabra*), and yaupon (*Ilex vomitoria*), with some Chinese privet, large gallberry (*Ilex coriacea*), and

persimmon (*Diospyros viginiana*). Dominant herbaceous plants are mainly broom sedge (*Andropogon virginicus*).

Habitats along the seawater intake and return pipeline routes are typical of maintained utility easements and landscapes, with low-diversity vegetation that is periodically mowed or cut back.

3.6 Threatened and Endangered Species

In accordance with Section 7 of the Endangered Species Act of 1973, the project area was evaluated for the potential occurrences of federally-listed threatened and endangered species. The USFWS Mississippi Ecological Services website (USFWS, 2010) was utilized as a reference on the current listing for Harrison County, which includes the endangered (E) and threatened (T) species listed below. Additional designations are as follows: (C) indicates Candidate, (CH) indicates that critical habitat is designated.

T - Louisiana black bear *Ursus americanus luteolus*
TCH- Gulf sturgeon *Acipenser oxyrhynchus desotoi*
TCH- Piping Plover *Charadrius melodus*
T - Gopher tortoise *Gopherus polyphemus*
T - Green turtle *Chelonia mydas*
T - Loggerhead turtle *Caretta caretta*
E - Kemp's ridley *Lepidochelys kempii*
E- Mississippi gopher frog *Rana capito sevosa*
E - Louisiana quillwort *Isoetes louisianensis*
E - Alabama red-bellied turtle *Pseudemys alabamensis*
E - Leatherback turtle *Dermochelys comacea*
E - West Indian manatee *Trichechus manatus*
E - Red-cockaded woodpecker *Picoides borealis*
C - Black pine snake *Pituophis melanoleucus* spp. *lodingi*

Vittor & Associates inspected the proposed project site and adjacent areas for the presence of threatened or endangered species. Pedestrian surveys of the proposed Ocean Expo complex site were performed on April 26, 2010. Target species for the site survey were selected based on current knowledge of individual species' distributions and their specific habitat requirements. Many of the listed species would not be affected by the proposed project, including sea turtles and Gulf sturgeon. Critical habitat for the threatened Gulf sturgeon was designated in 2003 in Mississippi Sound, but critical habitat does not extend to the Back Bay of Biloxi, where supply intake and outfall pipelines would be located (Figure 8). The nearest critical habitat designated for piping plover is at Deer Island, located in Mississippi Sound. Therefore, critical habitat would not be impacted, since the activities are not located in, and would not affect, Mississippi Sound (including Deer Island).

Species selected as targets for the site surveys included gopher tortoise, red-cockaded woodpecker, Louisiana quillwort, black pine snake, and Mississippi gopher frog. No

federally-protected species were observed on or near the project site. No individuals of quillwort or suitable habitat for quillwort were encountered. Suitable habitat for gopher tortoise does not exist within or adjacent to the project site, and no tortoises or their burrows were observed during the survey. As previously indicated, no piping plover habitat occurs at the site. No trees suitable for red-cockaded woodpecker were found, and its foraging habitat does not exist on the project site. No indigo snake, black pine snake, or gopher frog were observed during the survey. Suitable black bear habitat does not exist within or adjacent to the project site.

The pipeline alignments between Back Bay and the Ocean Expo complex site follow existing utility easements, mostly along road ROWs. These disturbed and maintained easements and ROWs do not contain habitat for any ESA-listed species.

The American bald eagle (*Haliaeetus leucocephalus*) was delisted in 2007 but nesting eagles and their nest trees are still protected under the Bald and Golden Eagle Protection Act. No bald eagle potential nests, however, were observed during site surveys or during a site visit on August 19, 2010, with NOAA's grants federal program officer.

The USFWS was contacted by letter of June 17, 2010, regarding this project (Appendix C). The USFWS responded by letter dated June 28, 2010, with the determination that no federally listed species occur on the proposed Ocean Expo complex site at Interstate 10. The MS Department of Fisheries, Wildlife, and Parks, on July 13, 2010, advised MDMR that the project likely poses no threat to listed species or their habitat if BMPs are followed.

Based on the above information, the action is not expected to adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

This construction project does not involve fishing activities and therefore has no target (fish) species or non-target (fish) species. Therefore, the proposed action is reasonably not expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species.

3.7 EFH

The Gulf of Mexico Fishery Management Council (GMFMC) prepared a generic document that identified and described EFH for 26 species (Gulf of Mexico Fishery Management Council, 1998). That document presented maps depicting EFH, including Back Bay. EFH is defined as everywhere that the 26 managed species commonly occur (GMFMC, 1998); however most, including royal red shrimp, corals, and certain reef and pelagic fishes, do not have defined EFH in the immediate project area.

Life stages of white shrimp (*Litopenaeus setiferus*), brown shrimp (*Farfantepenaeus aztecus*), and pink shrimp (*Farfantepenaeus duorarum*) are seasonally abundant in Mississippi Sound and adjacent waters, with brown shrimp highly abundant during spring

and fall. Juvenile stages of red drum (*Sciaenops ocellatus*) and Spanish mackerel (*Scomberomorus maculatus*) are common during all or most of the year. Juvenile Gulf stone crab (*Menippe adina*) and gray snapper (*Lutjanus griseus*) are common to rare, depending on season.

3.8 Coastal Zone Management

The distance from the Ocean Expo complex project site and to the nearest Coastal Barrier (Deer Island) is approximately 4.4 miles. The distance from the I-10 project site to the nearest mapped tidal marsh is approximately 1.4 miles, at Biglin Bayou. The proposed pipeline intake and outfall locations at Back Bay are approximately 2.5 miles from Deer Island, and are adjacent to areas of tidal marsh on the northern shoreline of Back Bay. MDMR found the project to be consistent with MCP on August 30, 2010, contingent on MDEQ Section 401 certification (see letter in Appendix C).

3.9 Cultural Resources

A cultural resource assessment (CRA) of the Ocean Expo complex site was conducted in 2010 (Appendix E). This assessment included a review of the archaeological literature (state site files), historic literature and records and an on-site survey with subsurface testing.

The Mississippi State Site File indicates that there are four previously recorded archaeological sites within one mile of the project area. None of these sites would be affected by the proposed project. Prior to the cultural resources assessment, the list of Mississippi Landmarks and the National Register of Historic Places was reviewed. No previously identified structures or sites that are currently listed as Mississippi Landmarks or listed on the National Register of Historic Places are located within the research area or within a one-mile radius of the proposed project area.

An on-site pedestrian survey was conducted of the entire project site. Shovel tests were excavated at standard intervals (30 and 60 meters) when possible and at non-intervals when standard intervals were impossible. A total of 45 tests were excavated in areas that were not wetlands. The tests measured approximately 30 centimeters in diameter and were excavated to sterile subsoil. Wetlands were visually inspected. However, no shovel tests were excavated in the wetland areas due to the extreme saturation of the soil, which did not typically allow for prehistoric human occupation. No historic features were observed in the wetlands. No artifacts (other than modern trash), historic structures, or archaeological sites were found on the property.

The pipeline alignments between Back Bay and the Ocean Expo complex site follow existing utility easements, mostly along road ROWs. These disturbed and maintained easements were reviewed and found to not contain significant cultural resources.

The MDAH was contacted by letter of May 19, 2010, regarding this project (Appendix C), and was provided a copy of the CRA report for the Ocean Expo complex

site. The MDAH responded by e-mail dated May 27, 2010, concurring with the report determination that no cultural resources are likely to be affected by the proposed project.

The THPO was contacted by letter (via e-mail) of June 1, 2010, regarding this project (Appendix C). To date, no response has been received. Therefore, concurrence is assumed.

Based on the above information, the action is not expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause loss or destruction of significant scientific, cultural, or historical resources.

3.10 Hazardous, Toxic and Radioactive Waste

A Phase I environmental site assessment was conducted for the proposed project site in October 2006 by Moran Engineering. A copy of the Phase I environmental site assessment main report is included as Appendix F. The environmental site assessment was conducted in accordance with the American Society for Testing and Materials (ASTM) Standard 1527-00.

Based on federal, state, and local databases queried as part of the environmental site assessment, there is one (1) leaking underground storage tank (LUST site), and one (1) site with an underground storage tank (UST) found within ASTM search distances of the proposed project site. The environmental site assessment found no Superfund or NPL sites within a one-mile radius of the project site. The state's regulatory file did not indicate the subject property ever having been permitted as a landfill.

The environmental site assessment found no evidence of environmental hazards associated with the proposed project site or any adjacent properties. The site walkover revealed isolated dumping, including two automobile tires, but no visual indications of potentially hazardous materials or perceivable signs of hazardous material discharges (e.g., stained soil, stressed vegetation, unusual odors) were observed. The environmental site assessment did not reveal the presence of any recognized environmental conditions that would affect the use of the site.

The research and educational activities of the IMMS will not adversely affect human health because most activity will occur either in a classroom or in a restricted laboratory environment. The educational activities will inform the public of traits of marine mammals, and will have no adverse impact on public health or safety.

3.11 Infrastructure and Utilities

Water

The City of D'Iberville supplies the project area with potable water from the public water system. According to the Mississippi Development Authority (2006), the

D'Iberville system capacity is 4,165,000 gallons/day, and an average consumption of 1,082,000 gallons/day, and a peak consumption of 2,448,000 gallons/day. Figure 9 shows the existing water lines in the vicinity of the proposed project site at I-10. An 8-in water main is located on McAlpine Street, and would serve the Ocean Expo facility.

Wastewater

The wastewater treatment facility serving the project area is the D'Iberville Wastewater Treatment Facility. The facility is designed to treat 1.12 million gallons per day (MGD) with a peak flow capacity of 2.5 MGD. A new treatment plant (currently under construction) will provide an additional 1.5 MGD design. The existing treatment plant is an activated sludge facility, completed in 1987, and produces effluents with BOD and TSS concentrations of 15 mg/l or less. The current flows into the existing treatment plant are around an average of 1.04 MGD for 2010, which is 93% of the daily capacity of the existing treatment facility. The Ocean Expo facility would add approximately 14,000 gallons per day based on the current facility design and anticipated use, which when added to current average use is 94% of the daily capacity of the existing treatment facility. Figure 10 shows the existing sewer lines in the vicinity of the proposed project site at I-10. A 4-inch force main is located on McAlpine Street, and would serve the Ocean Expo facility.

Solid Waste

The Harrison County Utility Authority manages the collection and disposal of non-hazardous municipal solid waste (MSW) generated in Harrison County. In general, MSW generated at residential sites and small commercial sites is collected and disposed by a contracted waste management company. Commercial sites, which generate more than 100 gallons of solid wastes, must contract separately with a waste management company for the collection and disposal of MSW.

Building Requirements

While the proposed facility will be located outside the 100-year floodplain, it will be exposed to storm events and hurricanes that will require special construction techniques. The buildings must be designed to incorporate special structural and life safety features to protect them during these storm events. Harrison County has adopted building codes that require certain structural and life safety features for commercial buildings. Ocean Expo will meet those requirements.

3.12 Visual Aesthetics

A special zoning district, the Interstate District, was created by the City of D'Iberville for the specific purposes of serving high traffic retail and service and light industrial type trades that serve a regional market population beyond the immediate community or neighborhood. The district was created to enhance the visual image of D'Iberville, which is associated with the major interstate highway gateways to the city. Requirements

ensure the architectural compatibility of new structures with the development of the district, and to protect visual vistas identified in the City's comprehensive plan.

3.13 Air Quality

Under the Clean Air Act, the United States Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) that limit the concentration levels of pollutants allowed to occur in ambient air (generally defined as the outdoor atmosphere nearest to ground level). The six criteria pollutants established by EPA include: ozone, lead, carbon monoxide, nitrogen dioxide, sulfur oxides measured as sulfur dioxide, and particulate matter of 10 microns). All areas within a state are designated with respect to each of these six criteria pollutants as in "attainment" (in compliance with the standards) or "nonattainment" (not in compliance with the standards), or "unclassifiable" (insufficient data to classify). Currently, all areas of Harrison County are in attainment with the NAAQS.

3.14 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 analyzed to determine if a disproportionate number of minority or low-income persons have the potential to be adversely affected by the proposed project. The project is located in Block Group 1, Census Tract 33.01 (U.S. Census Bureau), which has a lower percentage of minority residents than D'Iberville as a whole (12.6% versus 21.8%, respectively), and a lower percentage of the population below the poverty level than D'Iberville as a whole (5.3% versus 11.7%, respectively). The proposed project, therefore, is expected to have no significant disproportionate adverse environmental impacts on minority and low-income people in the area.

4.0 ENVIRONMENTAL CONSEQUENCES

This section describes environmental consequences for those components of Alternative 1, preferred location of the proposed Ocean Expo project. The no-action alternative would avoid the minor project impacts for each environmental component listed below, but would not meet the project purpose and need.

4.1 Land Use

Land use would be altered directly by project construction, from undeveloped land to an aquarium exhibit and educational facility. Potential indirect effects on land use will involve increases in vehicular traffic to and from the facility. It is anticipated that the

proposed facility would attract 150,000 visitors per year. Recent and planned future roadway improvements in the immediate vicinity of the proposed project site are shown in Figure 11. These roadway improvements include a new I-10 off ramp adjacent to the project site that will enhance traffic flow through the area. No additional new roads would be needed to accommodate the anticipated increase in traffic due to the project.

The proposed project would be physically compatible with existing development in the immediate vicinity. The proposed project site is zoned by the City of D'Iberville as a commercial district C-1. In addition, the Interstate District was created for the specific purposes of serving high traffic retail and service and light industrial type trades the types of establishments that serve a regional market population beyond the immediate community or neighborhood. These types of establishments generate traffic that is best suited to arterial service roads and highways to avoid undue congestion. The proposed project would be visually and physically compatible with existing development in the immediate vicinity.

The existing drainage easement on the proposed project site would be re-routed and converted from an open ditch to a culverted drainageway. After construction, the easement would continue to convey stormwater through the project site.

The proposed action is not related to other actions with individually insignificant, but cumulatively significant impacts. No other actions in the general vicinity are known to have individually insignificant, but cumulatively significant impacts. The adverse impacts of Ocean Expo will still be short-term and minor, while the more significant cumulative impacts will still be beneficial in the long term. All of the construction will be completed using the federal funding received to date, no later than the award period ending date. No other construction projects are expected inside the project area in the near future. No major construction projects are ongoing (or are expected in the near future) in the immediate vicinity of the project area. In that regard, no other activities need be combined (additively or synergistically) with the construction activities for analysis. Therefore, the effect on the project area's resources is limited to the construction activities detailed herein.

The Ocean Expo site will not establish a precedent for future actions with significant effects and does not represent a decision in principle about a future consideration. Federal funding for the Ocean Expo facility has already been approved. Since IMMS has already constructed the Center for Marine Education and Research, construction of the similar Ocean Expo does not create a new precedent.

4.2 Wetlands

The project would fill 0.58 acres of low-quality wetlands associated with an existing drainage easement. Therefore, IMMS must secure a USACE Section 404 wetland permit and MDEQ Section 401 water quality certification prior to project implementation. Direct wetland impacts would be properly mitigated in accordance with the conditions stipulated in the 404 and 401 permits. Compensatory mitigation for wetland impacts

would be accomplished through purchase of credits from an approved wetland mitigation bank that serves Harrison County. Proof of purchase of mitigation bank credits from the approved mitigation bank would be submitted to the USACE and MDMR prior to commencement of construction.

Secondary wetland impacts would be avoided using appropriate BMPs during construction, and through implementation of a MDEQ – approved post-construction Stormwater Management Plan. The stormwater plan would be submitted and approved as part of the MDEQ Section 401 water quality certification for the project (public comments on the 401 certification started August 30, 2010.)

The pipeline alignments between Back Bay and the Ocean Expo complex site follow existing utility easements, mostly along road ROWs. These disturbed and maintained easements and ROWs do not contain wetlands, except for a small area along the proposed terminus of the 12-inch return water line. The return water pipeline would be constructed on the existing wastewater treatment plant outfall line trestle, and no wetland impacts would occur with pipeline construction.

4.3 Upland Vegetative Community

The project site would be cleared to accommodate construction of the facility. Forested upland habitat in the project site consists primarily of water oak, red maple, and Chinese tallow. Appropriate BMPs to avoid negative water quality impacts due to sedimentation will be implemented and maintained during and after construction.

4.4 Endangered and Threatened Species

No species currently listed by the USFWS for Harrison County were observed during site surveys (as previously described). Most protected species in the region are motile, migratory, and are not endemic only to the affected area. No designated critical habitat exists at the project site. The USFWS was contacted by letter of June 17, 2010, regarding this project (Appendix C). The USFWS responded by letter dated June 28, 2010, with the determination that no federally listed species occur on the proposed Ocean Expo complex site at Interstate 10. The MS Department of Fisheries, Wildlife, and Parks, on July 13, 2010, advised MDMR that the project likely poses no threat to listed species or their habitat if BMPs are followed.

4.5 Cultural Resources

No significant cultural resources were found on the proposed project site during the cultural resource assessment (as previously described). During construction, all appropriate actions would be followed with respect to preserving cultural resources, if unexpectedly discovered. The MDAH was contacted by letter of May 19, 2010, regarding this project (Appendix C), and was provided a copy of the CRA report for the Ocean Expo complex site. The MDAH responded by e-mail dated May 27, 2010,

concurring with the report determination that no cultural resources are likely to be affected by the proposed project.

The THPO was contacted by letter (via e-mail) of June 1, 2010, regarding this project (Appendix C). To date, no response has been received. Therefore, concurrence is assumed.

4.6 Air, Noise, and Water Environments

Construction-related air emissions would be temporary. Construction-related emissions would cause localized and minor alterations to air quality, due to exhaust from diesel- and gasoline-powered equipment and dust. Construction activities would produce noise levels similar to the 85dB level at 100 feet generated by typical construction activities, which could affect nearby sensitive noise receptors, such as residents to the south of the project site.

Prior to and during project implementation, MDEQ water quality certification coverage would be retained under the State's Storm Water Construction General Permit (MSR10) to discharge storm water associated with construction activity including clearing, grading, excavating or other land disturbance activity disturbing more than 5 acres.

Appropriate BMPs to avoid negative water quality impacts will be implemented and maintained during and after construction. BMPs will be properly installed and maintained to prevent the movement of sediment off-site and into adjacent drainage and wetland areas. Fill material and excavation areas will have side slopes of at least 3:1 (horizontal: vertical), and will be immediately seeded, stabilized, and maintained. In the event of any BMP failure, corrective action will be taken immediately.

The Ocean Expo facility would withdraw and discharge one to two percent of its seawater supply each day from and into Back Bay, totaling approximately 10,000 to 20,000 GPD. The salinity of discharged return water would be approximately 15 to 20 parts per thousand (ppt), which is within the range of average annual salinities in Back Bay (5 to 20 ppt). Discharged return water is highly unlikely to have a measurable impact on natural bay salinities in the vicinity of the outfall.

Supply water removal and discharge would require an NPDES permit from the Mississippi Department of Environmental Quality (MDEQ). The existing IMMS facility on the Industrial Seaway in Gulfport has an NPDES permit (No. MS0060933) for discharged water that has the following limitations:

Flow – Report MGD
BOD – 10 mg/l
Ammonia Nitrogen – 2.0 mg/l
Total Suspended Solids – 30 mg/l
Fecal Coliform – 200 colonies/100 ml

pH – 6.0-9.0 Standard Units

The NPDES permit that will be required for the proposed Ocean Expo facility would likely include, but not necessarily be limited to, these same parameters and effluent values. IMMS already has experience in meeting those parameters and values in the existing facility in Gulfport; therefore, problems with meeting the requirements of the new NPDES permit for Ocean Expo are not expected. Adherence to the NPDES permit limitations for the proposed project will preclude significant adverse water quality impacts of return water discharged into Back Bay.

4.7 EFH Assessment

This assessment includes an evaluation of project and cumulative effects, the action agency's evaluation of those effects, and any mitigation proposed. The Ocean Expo project would have minor effects on the Back Bay area identified as EFH. Adherence to the NPDES permit limitations for discharge of return water will preclude significant adverse impacts to water column and benthic EFH in Back Bay. Impacts to bay bottom, intertidal marsh, and submerged aquatic vegetation and federally managed species will also be minimized by compliance with the NPDES permit limitations. Those minimal impacts are also addressed elsewhere in this supplemental EA (including Sections 3.4 and 3.7). We consider these impacts to be minimal on an individual project and cumulative effects basis. This assessment was based on informal guidance to the NOAA grants federal program officer from NOAA Habitat Conservation personnel (personal communication, D. Dale, NOAA Habitat Conservation office, St. Petersburg, FL).

4.8 Environmental Justice

As indicated by the other sections of this environmental assessment, the proposed project would have no significant adverse environmental impacts. The data in Section 3.14 indicates that the proposed project would have no significant disproportionate adverse environmental impacts on minority and low-income people in the area.

5.0 MITIGATION MEASURES

The list below includes all mitigation measures to be adopted by the responsible entity to eliminate or minimize adverse environmental impacts. All remaining items required for environmental clearance will be completed and documented prior on-site construction activities. Mitigation measures include:

- Compensatory mitigation for 0.58 acres of wetland impacts of the proposed project will be accomplished through purchase of credits from an approved wetland mitigation bank that serves Harrison County. Proof of purchase of mitigation bank credits from the approved mitigation bank will be submitted to the USACE and MDMR prior to commencement of construction.

- Adherence to the NPDES permit limitations for the discharge of return water from the Ocean Expo facility into Back Bay.

- During project implementation, appropriate BMPs must be properly installed and maintained to prevent the movement of sediment off-site and into adjacent waters and wetland areas.

- All fill material and excavation areas must have side slopes of at least 3:1 (horizontal: vertical), and must be immediately seeded, stabilized, and maintained.

- In the event of any BMP failure, corrective action must be taken immediately.

Ocean Expo will comply with all conditions of the USACE Section 404 wetland permit, MDMR Coastal Consistency, and MDEQ Section 401 water quality certification for the proposed project.

MDMR determined that the project is consistent with MCP, subject to the following conditions:

1. Approximately 0.58 acres of non-tidal wetland should be filled for the construction and installation of Ocean Expo.
2. The applicant shall purchase the appropriate number of mitigation credits to offset the 0.58-acre impact to non-tidal wetlands;
3. Prior to the commencement of construction, proof of purchase form the approved mitigation bank within the service area (as determined by the Mitigation Bank Interagency Review Team) must be submitted to this office.
4. No construction debris or unauthorized fill materials shall be allowed to enter coastal wetlands or waters;
5. BMPs shall be utilized during all phases of construction; and
6. Vegetated wetlands outside of the 0.58-acre fill areas shall not be impacted.

The 404 permit has not yet been issued, but will be obtained prior to construction. Based on similar past projects in the Mississippi coastal zone, it is expected that the above bulleted items (listed as mitigation measures) would be the 404 permit conditions.

6.0 AGENCY CONSULTATION

The following agencies and organizations were contacted by letter requesting project review during the preparation of this supplemental EA:

- U.S. Fish and Wildlife Service, Jackson Field Office
- Mississippi Department of Archives and History
- THPO, Mississippi Band of Choctaw Indians
- USACE, Mobile District

- MDMR
- MDEQ

In accordance with applicable local, state, and federal regulations, the applicant is responsible for acquiring any necessary permits prior to commencing construction at the proposed project site. Based on the information contained in this supplemental EA, the action does not threaten a violation of federal, state, or local law or requirements imposed for the protection of the environment.

7.0 LITERATURE CITED

Council on Environmental Quality (CEQ) regulations implementing NEPA (Title 40 of the United States Code of Federal Regulations [CFR], Parts 1500-1508 http://www.mnrg.gov/meetings/2005cimpacts/pdfs/CEQ.pdf

Farmland Protection Policy Act regulations, 7 CFR 658.2(a), definition of "farmland" http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=874f80cb75e25870746d48b4840afe65&rgn=div8&view=text&node=7:6.1.3.6.28.0.13.2&idno=7

Federal Emergency Management Agency (FEMA) Provisional Topographic Elevation Contour Maps-Harrison County (Appendix A) http://www.fema.gov/hazard/flood/recoverydata/katrina/katrina_ms_harrison.shtm#topographicmaps

Federal Emergency Management Agency (FEMA) FIRM Map Panel 284 (Number 28047C0284G) dated March 16, 2009 (Appendix A)

Gulf of Mexico Fishery Management Council (GMFMC), 1998. Generic Amendment for Addressing Essential Fish Habitat Requirements in the Following Fishery Management Plans of the Gulf of Mexico: Shrimp Fishery of the Gulf of Mexico, United States Waters, Red Drum Fishery of the Gulf of Mexico, Reef Fishery of the Gulf of Mexico, Coastal Migratory Resources (Mackerels) in the Gulf of Mexico and South Atlantic, Stone Crab Fishery of the Gulf of Mexico, Spiny Lobster Fishery of the Gulf of Mexico and South Atlantic, and Coral and Coral Reefs of the Gulf of Mexico. Gulf of Mexico Fishery Management Council, Tampa, Florida, 238 pp. +app.

Mississippi Development Authority, 2006. Community Profile for D'Iberville, MS, Prepared by the Mississippi Development Authority.

National Environmental Policy Act (NEPA) of 1969 http://ceq.hss.doe.gov/nepa/regs/nepa/nepaeqia.htm

NOAA Administrative Order 216-6, Environmental Review Procedures for Implementing the National Environmental Policy Act. http://www.corporateservices.noaa.gov/~ames/NAOs/Chap_216/naos_216_6.html

Phase I Cultural Resources Assessment, Barry A. Vittor & Associates, Inc (Appendix E)

Phase I Environmental Site Assessment, Moran Engineering (Appendix F)

United States Department of Agriculture (USDA) Web Soil Survey
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

United States Census Bureau: http://factfinder.census.gov/home/saff/main.html?_lang=en

United States Fish and Wildlife Service (USFWS) Mississippi Ecological Services website, 2010. List of threatened and endangered species.
http://www.fws.gov/mississippiES/endsp.html

Appendix A – Maps and Figures

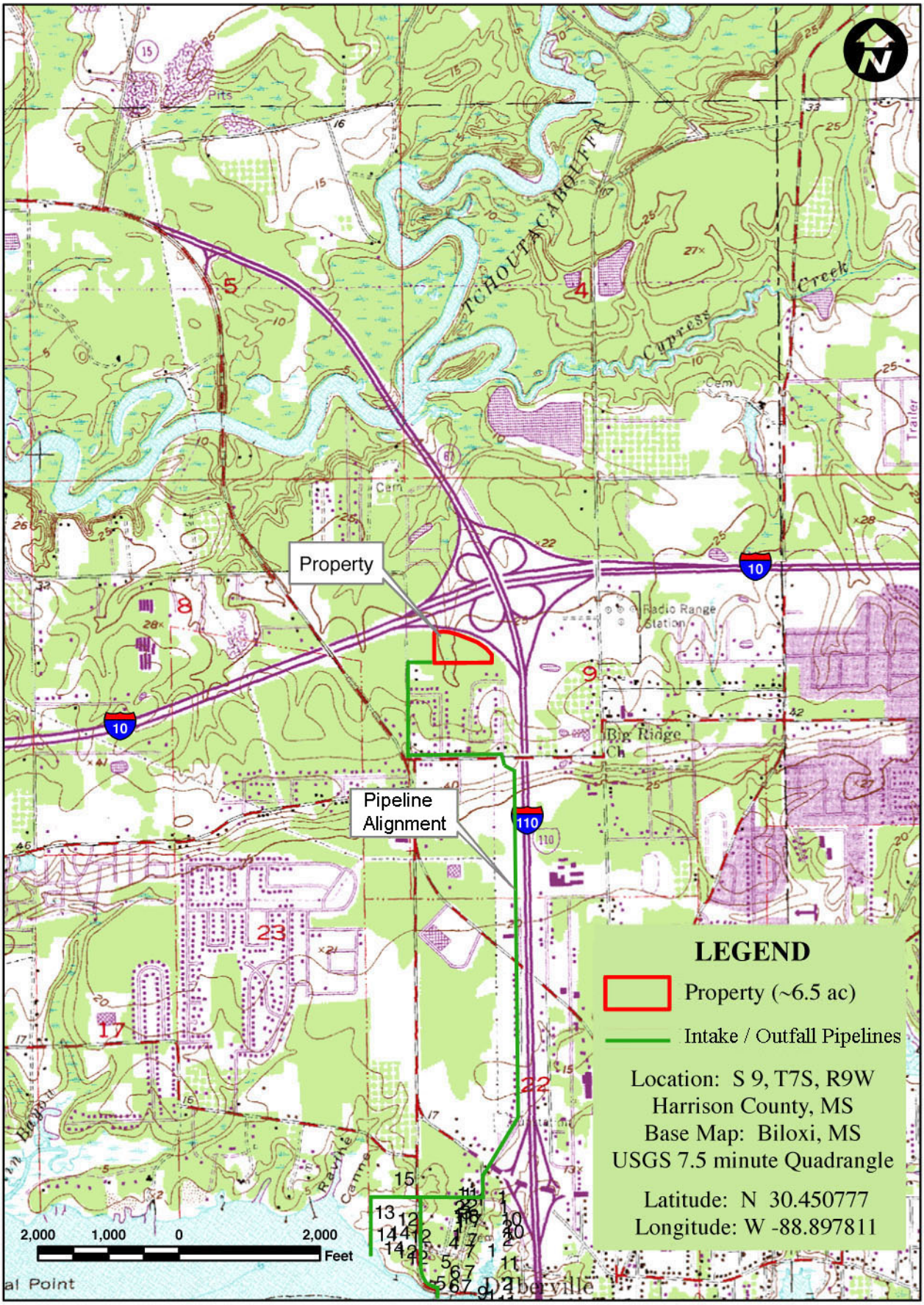


FIGURE 1. Location of the proposed Ocean Expo project, in D'Iberville, Mississippi.

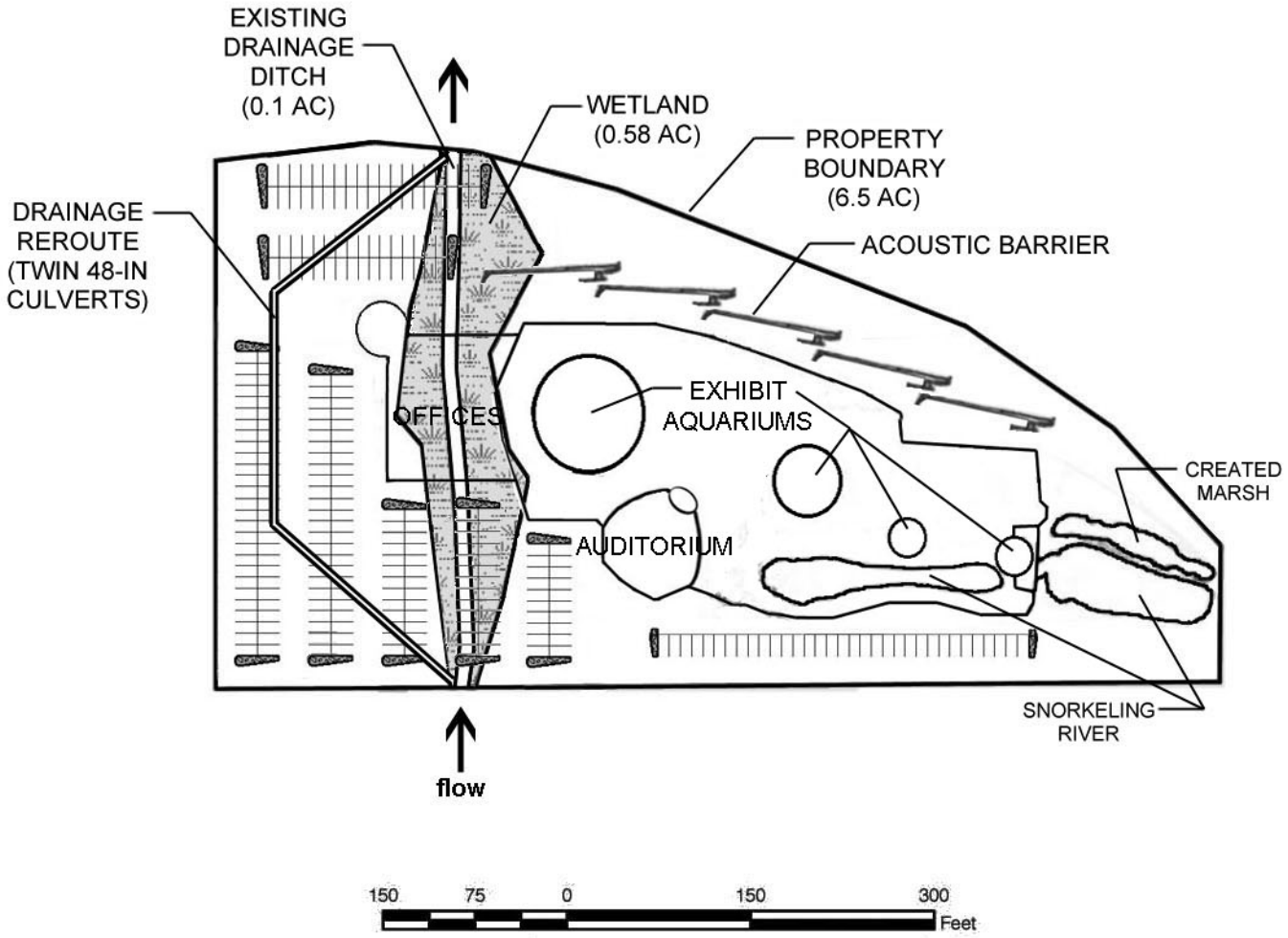


FIGURE 2. Site plan for the Ocean Expo, in D' Iberville, Mississippi.

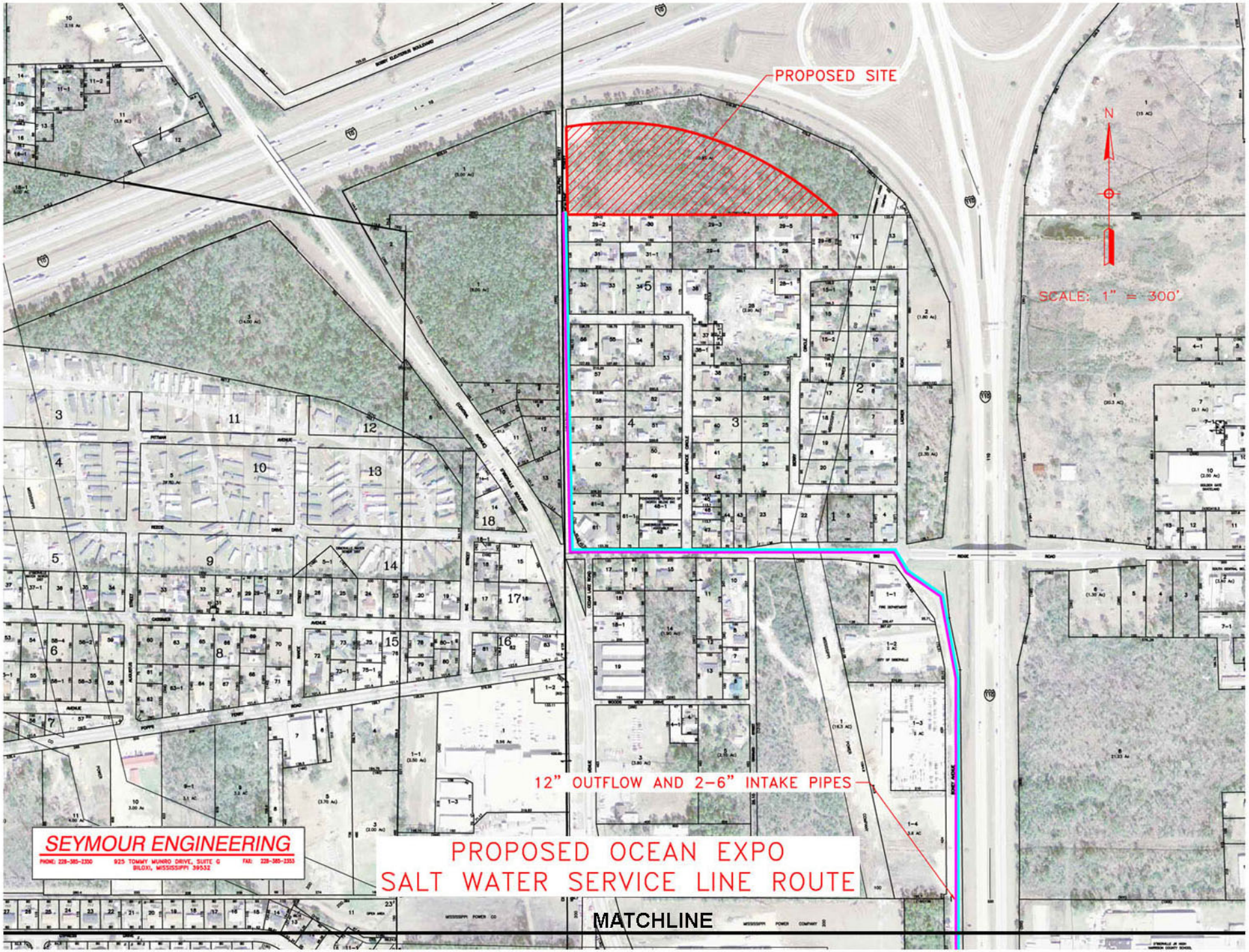


FIGURE 3A. Proposed water service line route for Ocean Expo.

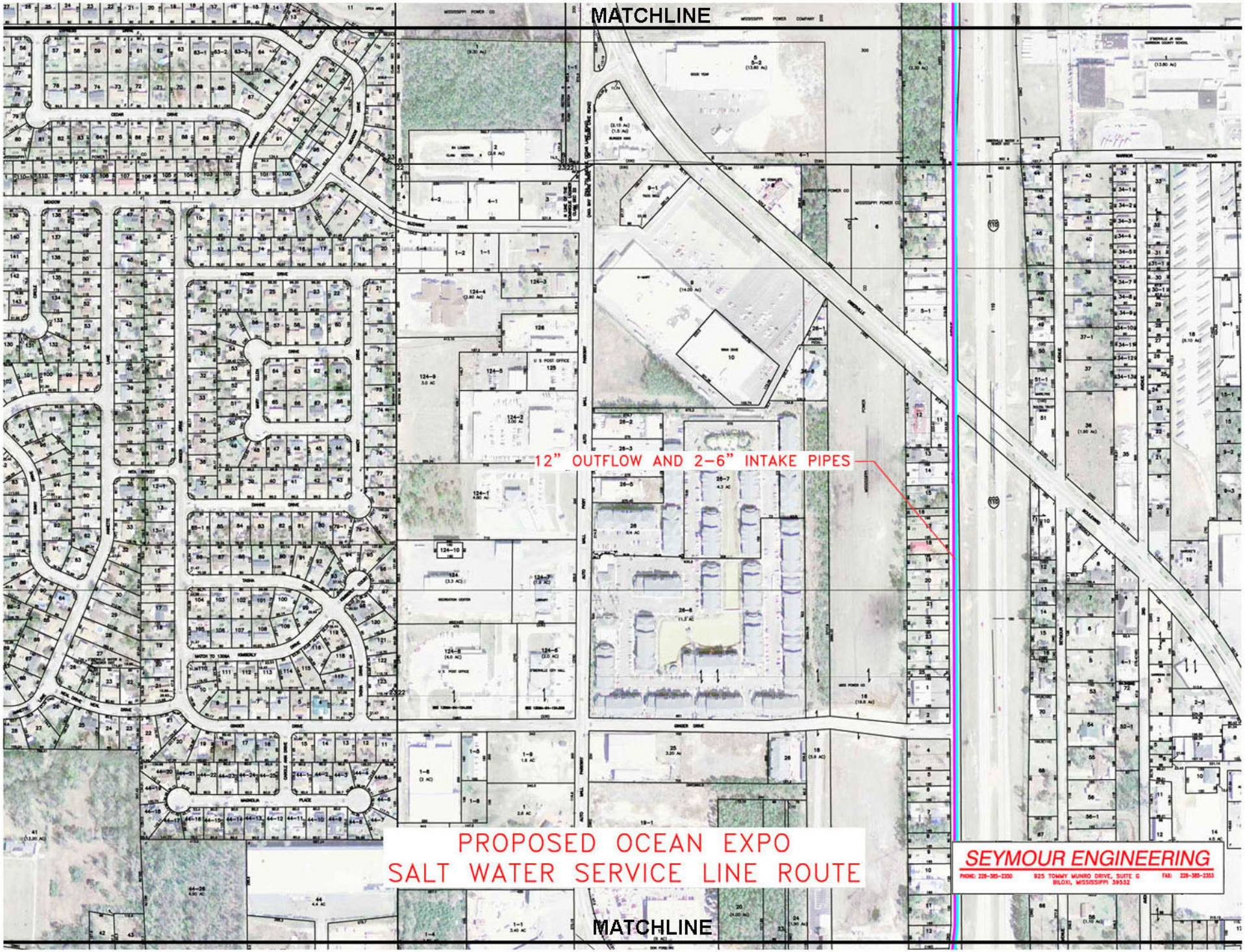


FIGURE 3B. Proposed water service line route for Ocean Expo.

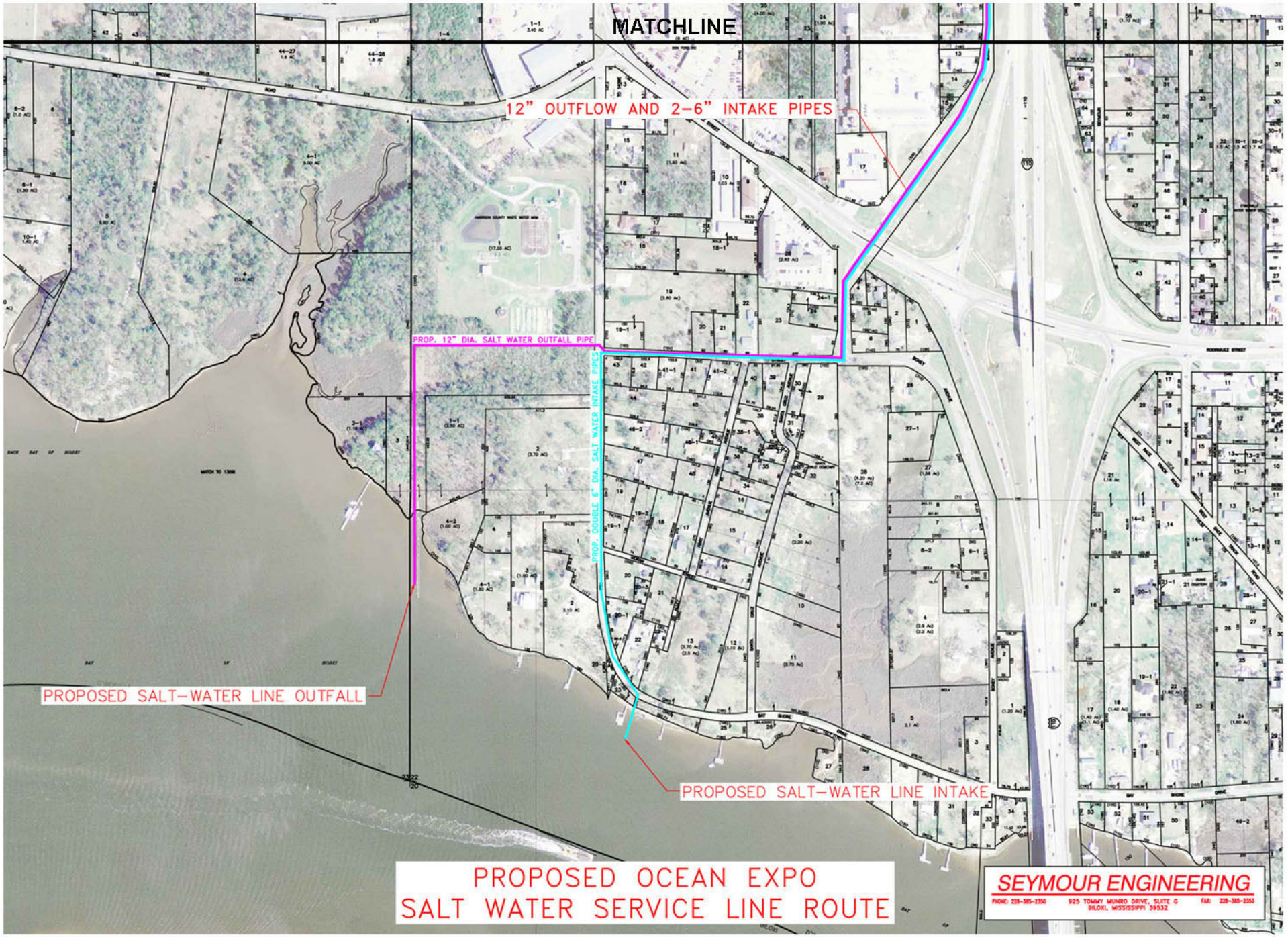


FIGURE 3C. Proposed water line service route, including intake and outfall locations, for Ocean Expo.

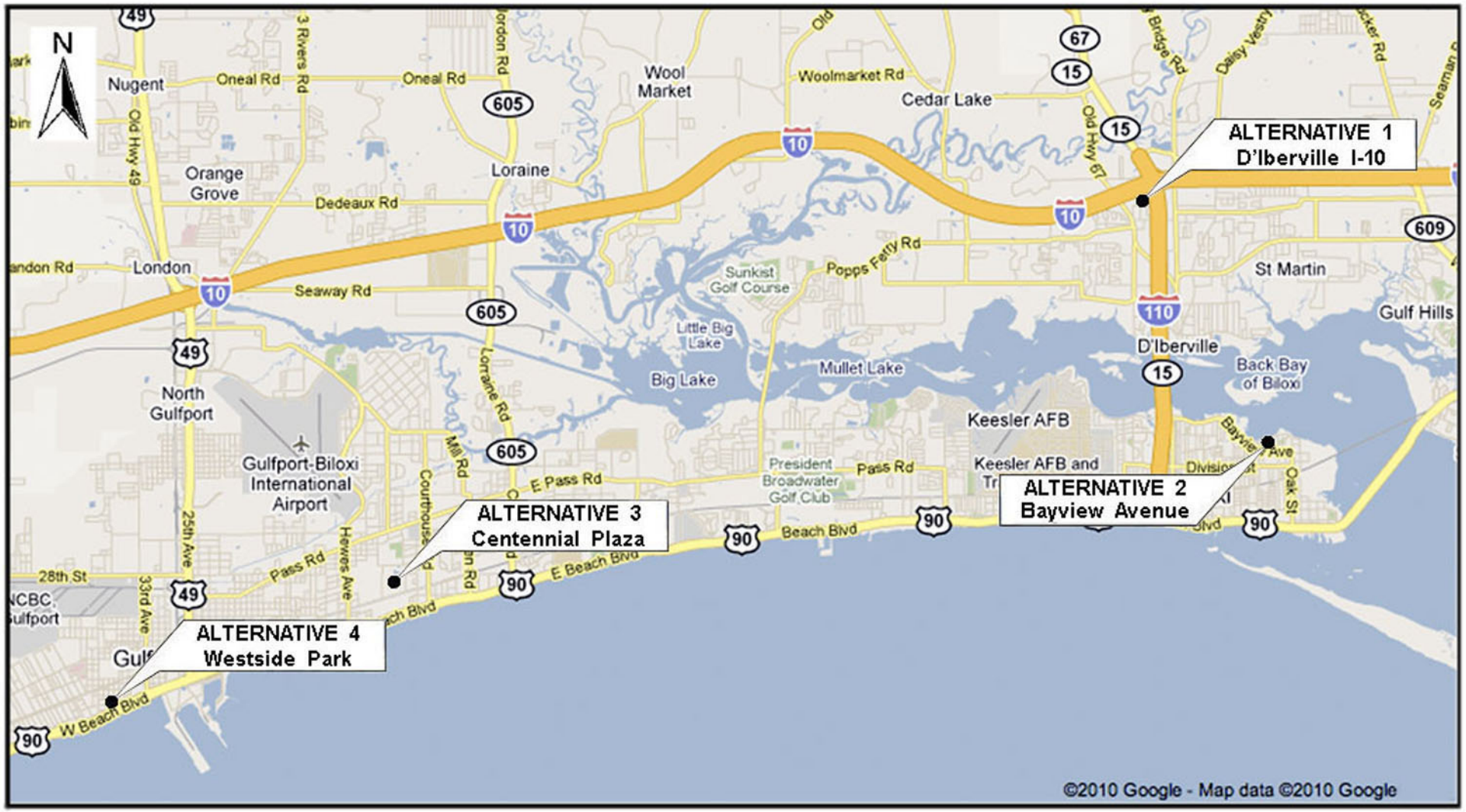
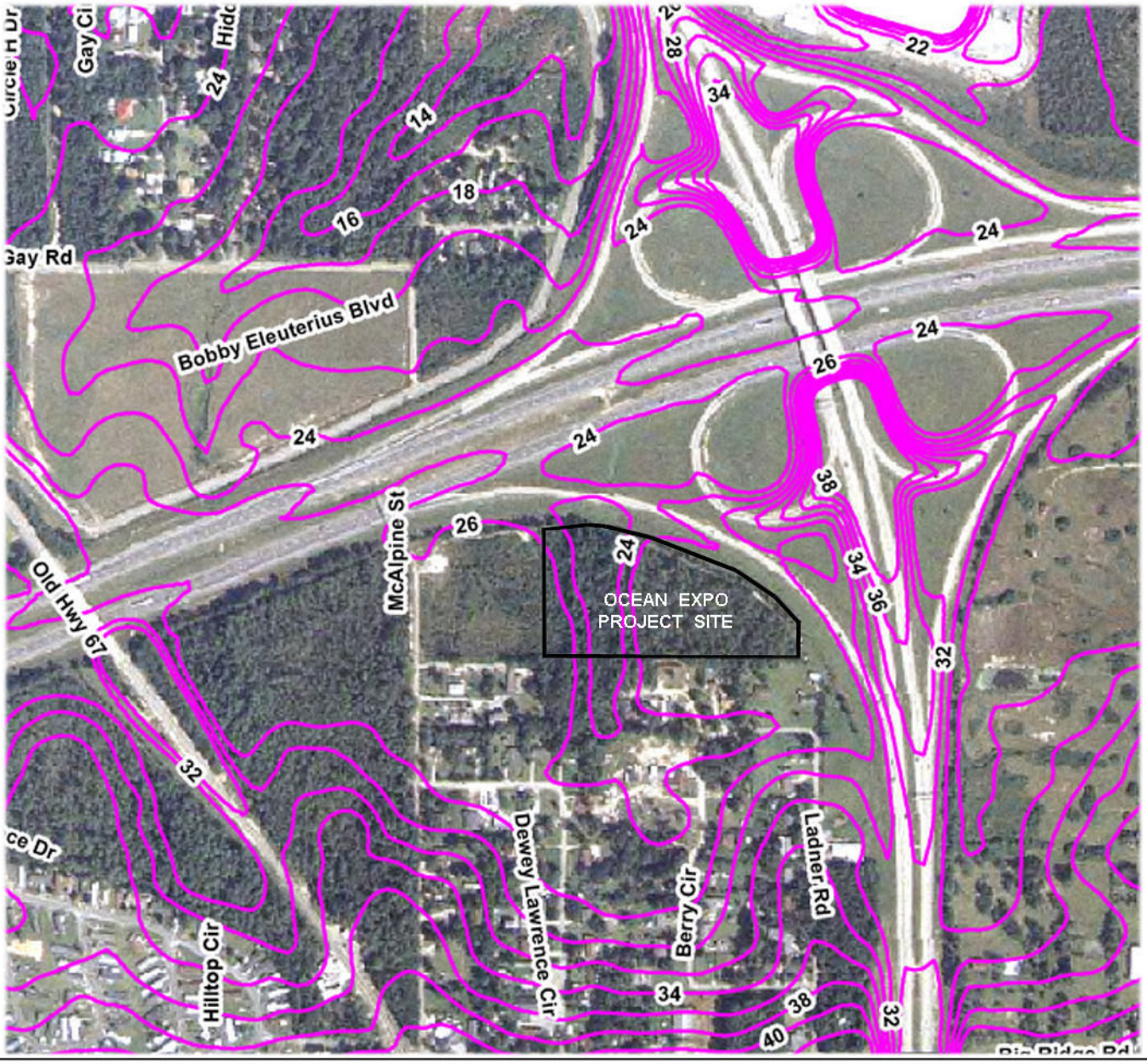


FIGURE 4. Alternative project site locations evaluated for the Ocean Expo project.



PROVISIONAL TOPOGRAPHIC ELEVATION CONTOUR MAP

FEMA

Harrison and Jackson Counties, MS

Date of Map: December 15, 2005

Map Number: MS-K25

NOAA

OVERVIEW MAP

LEGEND

- State Boundary
- County Boundary
- Topographic Contours[1,2] (Contour Interval = 2 feet)

Data Sources:

Aerial Imagery: *USDA, National Agriculture Imagery Program, 2004*

Topographic Data: *The NOAA Coastal Services Center purchased the Hancock County and Jackson County data from EarthData International for and in coordination with the State of Mississippi. The State of Mississippi purchased the Harrison County data from EarthData International, and permitted these data to be used by FEMA in the Hurricane Katrina recovery mapping effort.*

FOR ADVISORY PURPOSES ONLY

Elevation contours presented on this map are preliminary and do not replace elevations determined by a certified surveyor or engineer.

For more information on advisory flood elevations and available maps, please see www.fema.gov/hazards/floods/recoverydata/katrina_index.shtm

Notes:

[1] Measured in feet relative to the North American Vertical Datum of 1988.

[2] These data have not been verified and may contain errors. Elevation contours may not represent the true ground surface in some locations. This is due to artifacts of LIDAR data collection, such as trees and buildings, and/or erroneous point data. The final verified data will be available in late December 2005 or January 2006 from the NOAA Coastal Services Center.
Please check the following link for availability of the final data: http://www.csc.noaa.gov/crs/tcm/missions.html

TOPOGRAPHIC DATA PRESENTED IN THESE MAPS ARE PROVISIONAL AND HAVE NOT BEEN VERIFIED

For insurance rating purposes, refer to the currently effective Flood Insurance Rate Map (FIRM), available from your local government or the FEMA Map Service Center (1-800-358-9616/ http://msc.fema.gov)

FIGURE 5. Provisional Topographic Elevation Contour Map prepared by FEMA.

FIGURE 6. FEMA FIRM showing the location of the proposed Ocean Expo project.

FIGURE 7. Soils on the proposed Ocean Expo project site (Source: USDA Web Soil Survey).

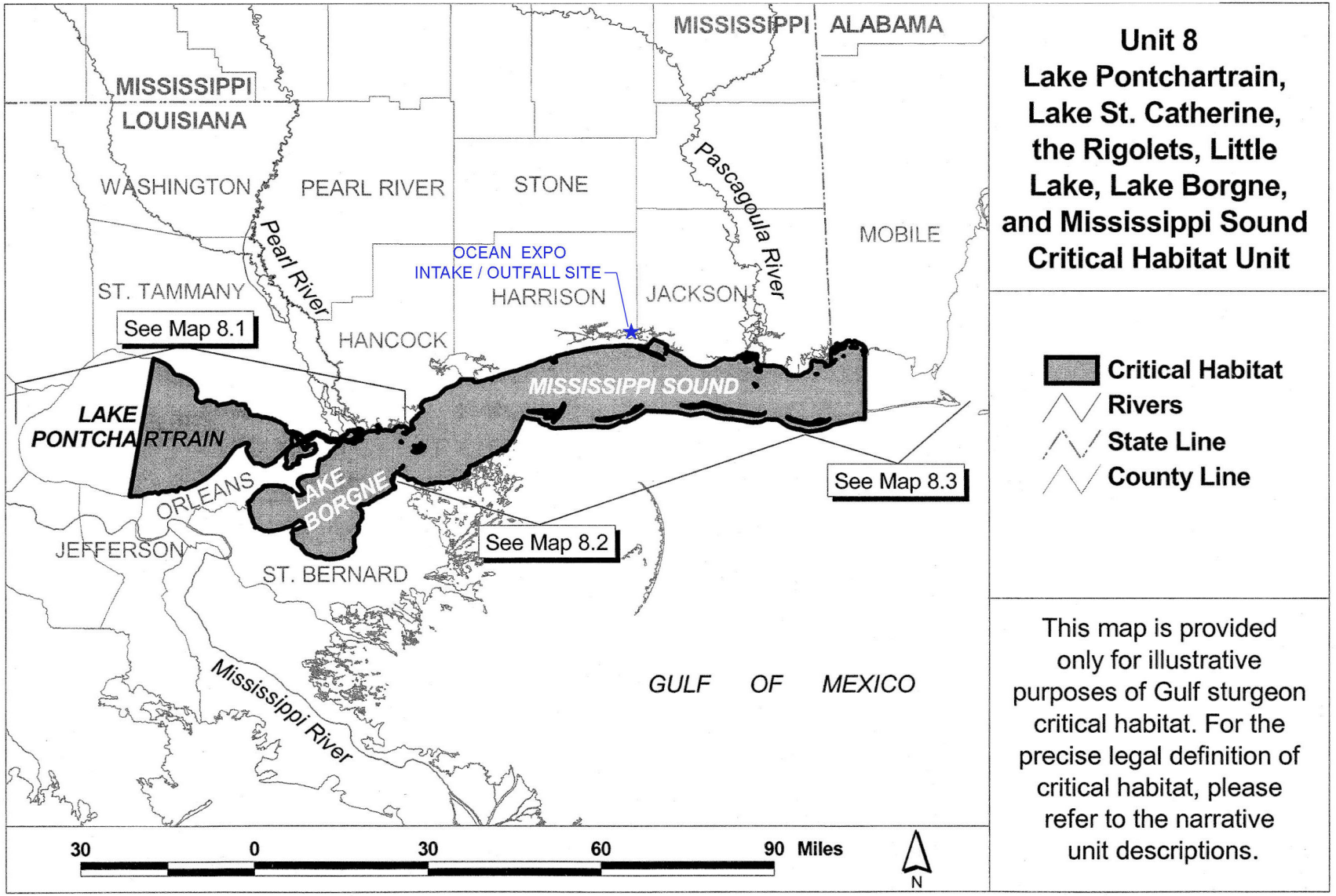


FIGURE 8. Location of the proposed intake and return water pipelines as they relate to Gulf sturgeon critical habitat.

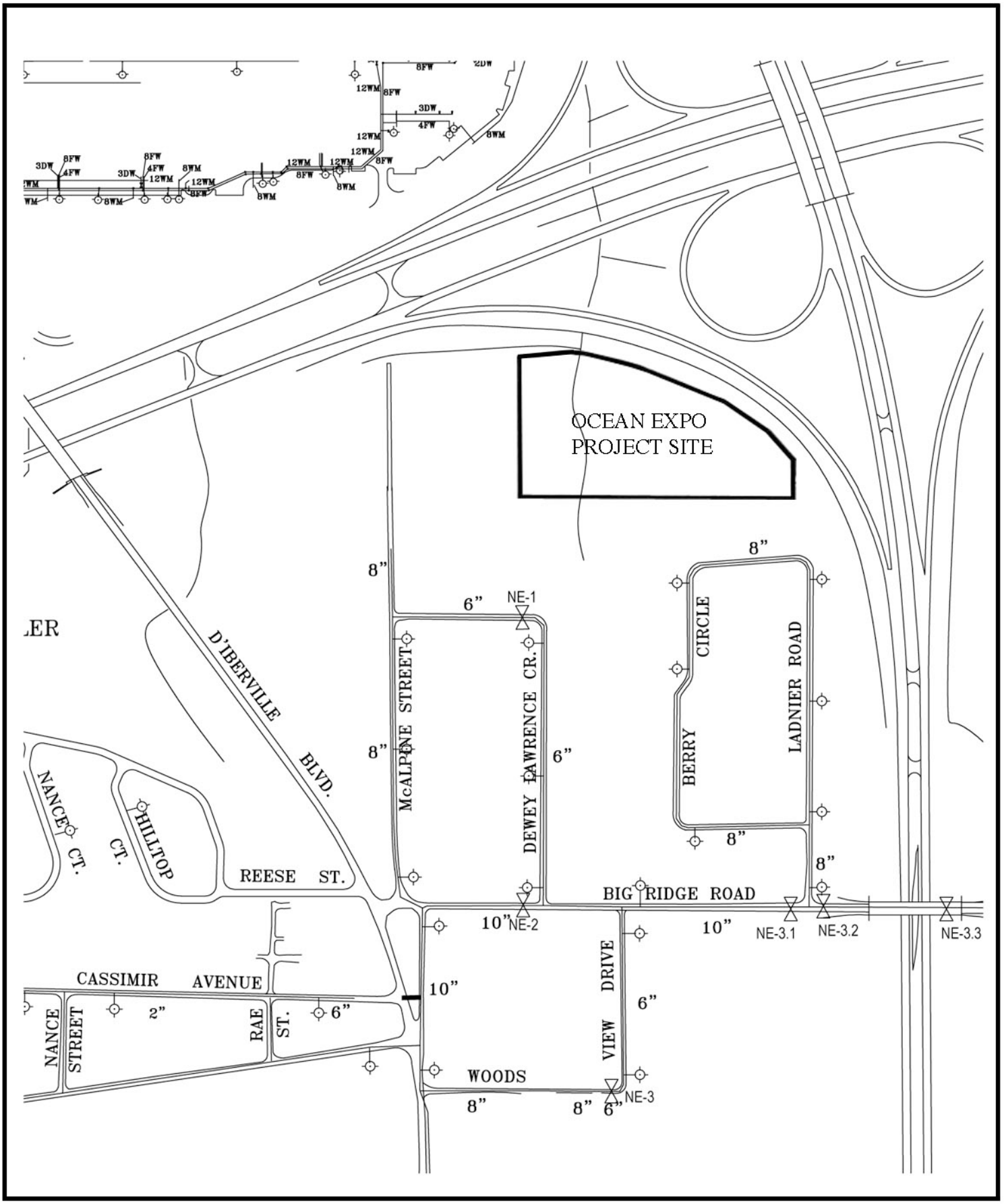


FIGURE 9. Existing water lines in the vicinity of the proposed Ocean Expo project site.

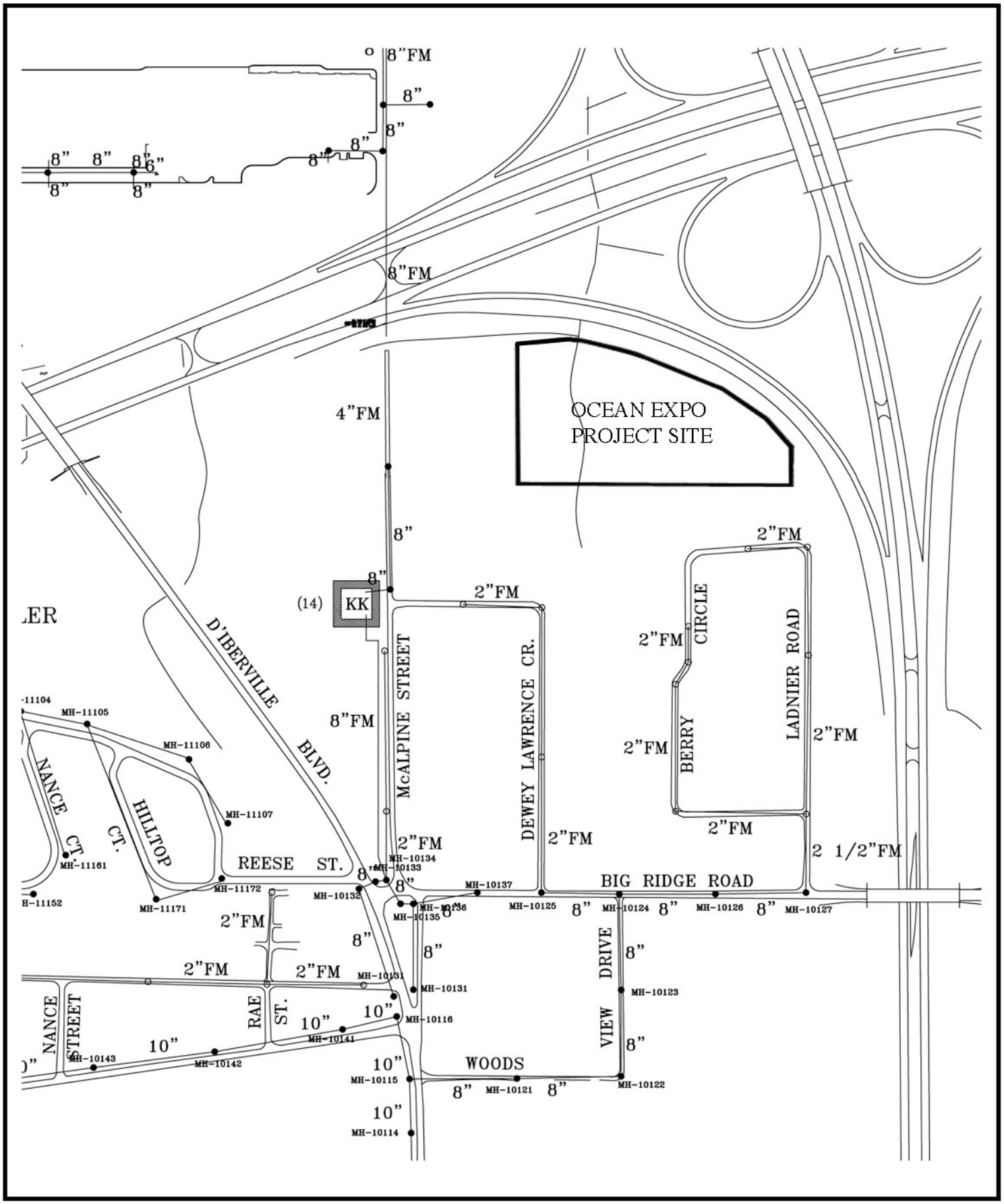


FIGURE 10. Existing sewer lines in the vicinity of the proposed Ocean Expo project site.

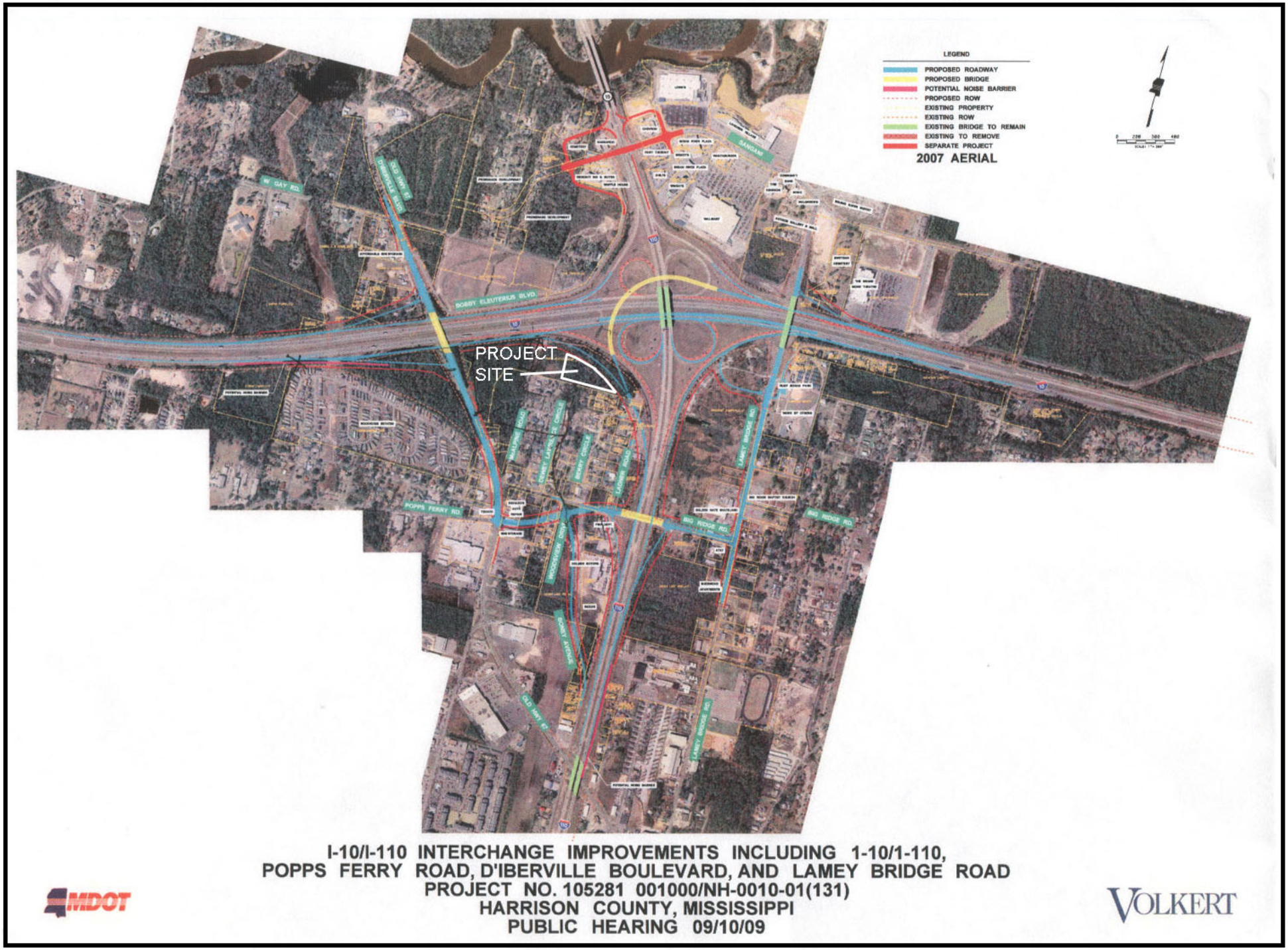


FIGURE 11. Planned roadway improvements in the vicinity of the Ocean Expo project site.

Appendix B – Alternative Site Evaluation Matrix

OCEAN EXPO ALTERNATIVE SITES – REVIEW PANAL SCORING SHEET					
	D'IBERVILLE	BILOXI	GULFPORT		
CRITERIA	**I-10**	**Bayview Avenue**	**Centennial Park**	**Westside Park**	**EXPLANATION**
Land – Site Characterization / Location					Aspects of the land that the city and / or developer is providing for Ocean Expo
Visibility from Main Roadways / Intersection	10	7	2	7	Can the current site be seen directly from existing interstates and highways?
Elevation	10	2	9	1	Will the site need to be raised to meet FEMA and state regulations?
Wetlands / Land Usability	8	6	10	10	Is the land contiguous and does it contain wetlands or unusable portions?
Contiguousness	8	8	6	7	Does the land have a minimum of 6 acres and is it connected to current development?
Signage	9	9	7	7	Will there be any restrictions of allowable signage including directional information?
Ingress & Egress	8	6	4	6	Is there access to major roads; Convenient for traffic?
Current Amenities – Tourism / Business					What does the city and / or developer presently have at the site; Amenities nearby?
Retail	9	5	1	3	Retail and shopping stores currently open and running
Lodging	6	8	2	6	Hotel and condo space available; rentals
Family Entertainment	5	7	6	6	Family-friendly amenities that are part of the city's tourism draw
Gaming / Adult Entertainment	3	10	4	6	Casinos and other entertainment such as golf
Dinning	7	9	5	6	Restaurants
Museums / Art Galleries	3	8	4	6	Permanent museums and art galleries established in the city
Fair / Exhibits / Events	5	7	5	7	Routine / annual events (festivals, fairs) held within the city

OCEAN EXPO ALTERNATIVE SITES – REVIEW PANAL SCORING SHEET (CONTINUED)					
	D'IBERVILLE	BILOXI	GULFPORT		
CRITERIA	**I-10**	**Bayview Avenue**	**Centennial Park**	**Westside Park**	**EXPLANATION**
Incentives for Ocean Expo					Currently the proposed site does not have these items but the City / developer is willing and agreed to provide and their cost
Water / Sewer Connection	10	8	10	10	Connections to City water and sewer
Utilities	9	9	9	9	Electricity and natural gas connections
Saltwater Access	10	7	5	7	Provide access through major waterways (Gulf, bays, canals)
Roadways	10	10	8	9	Access to facility from major interstate and / or highways
Side Walks and Pavements	8	8	5	5	Boardwalks, sidewalks, access paths
Landscaping	8	8	5	8	Provide an area already landscaped both for the facility and the surrounding areas
Marina Access	6	6	1	6	Boat and docking areas for facility use and ecological tours
Permits	10	10	9	9	
Parking					Parking areas
Surface	9	9	9	9	
Multilevel	10	10	5	5	
CTA Route / Parking Garage	10	10	8	2	
Master Plan					Is the City / developer starting or planning in the near future amenities or facilities in the development area?
Future Development	9	8	4	7	Have a current plan developed and actual commitments with funding and amenities?
Developer Credentials	10	8	2	2	Has the developer worked with other cities before and successfully completed projects?
Architect	9	9	2	2	Has the current architect worked with the City / developer on other successful commercial projects?
Development Concept	10	6	5	4	Are the master plan elements and business realistic and how far are the elements from coming to fruition?
Timelines	5	3	5	4	Are any of the items in the master plan already constructed or coming to fruition?

OCEAN EXPO ALTERNATIVE SITES – REVIEW PANAL SCORING SHEET (CONTINUED)					
	D'IBERVILLE	BILOXI	GULFPORT		
CRITERIA	**I-10**	**Bayview Avenue**	**Centennial Park**	**Westside Park**	**EXPLANATION**
Funding / Assistance					Ability and willingness of the City to provide its full support to raise additional funding through various sources
Grant Assistance	10	8	7	7	
TIFF / Go Zone Bonds	10	9	1	1	
Private Funding Assistance			3	3	
Property Taxes	--	--	--	--	
Insurance Assistance	1	7	1	1	
Taxes / Imposed Fees					Taxes and fees imposed by the City on the Ocean Expo project
Admission Fee	4	8	1	1	
Property Taxes	N/A	N/A	N/A	N/A	
City Politics / Community Support					Rank the willingness of the City's stakeholders to assist, support, and help Ocean Expo succeed
Council Support	10	7	8	8	
Mayor Support	10	8	6	6	
Business Council Support	8	8	6	6	
Public Support	8	8	7	7	
Overall Rating					Overall ranking based on point totals from the ranking criteria
Total (370 Maximum)	295	284	198	212	
Percent of Maximum	80	77	54	57	
Average Criterion Rating	**7.97**	**7.68**	**5.35**	**5.73**	
Consultant Opinion / Recommendation	First	Second	Third	Third	

Recommendation: D'Iberville represents the optimal location

- Exceptional public / private cooperation and teaming
- Exceptional visibility and traffic access
- Best construction conditions (elevations, soils, flooding potential)
- Excellent City-furnished and co-developer incentives
- Location is in a dynamic and growing area
- Lowest insurance and maintenance costs
- Excellent master plan, with high likelihood of success

Biloxi

- Good synergy with existing casinos, museums, restaurants
- Poor construction site with high insurance costs
- Fair access to retail areas
- Average city-furnished incentives
- Master plan is incomplete and reliance on casinos may cause delays
- Fair level of City support

Gulfport (both sites)

- Likelihood of sustained City support is uncertain
- Both sites area isolated from active development of complimentary facilities (especially hotel, retail)
- Both sites have poor tourist visibility and access
- Incentives presented are less attractive compared to other sites
- Centennial Plaza site has poor road access but good construction conditions and lower insurance costs
- Centennial Plaza site offers no access to marina or docking facilities
- Westside site is largely in a velocity zone
- Both sites have good family activities nearby

Appendix C – Agency Consultation

BARRY A. VITTOR & ASSOCIATES, INC.
ENVIRONMENTAL RESEARCH & CONSULTING
8060 Cottage Hill Road Mobile, Alabama 36695
Phone (251) 633-6100 Fax (251) 633-6738

Mr. Ray Aycock
Field Supervisor
U.S. Fish and Wildlife Service, Jackson Field Office
6578 Dogwood View Parkway, Suite A
Jackson, MS 39213

June 17, 2010

Dear Mr. Aycock:

The Institute for Marine Mammal Studies (IMMS), a 501 (C) (3) non-profit organization, has submitted a request for National Oceanic and Atmospheric Administration (NOAA) federal financial assistance to construct Ocean Expo in D'Iberville, Mississippi. The funding would be used to construct Ocean Expo as a state-of- the-art aquarium and one-of-a-kind learning center that will provide both students and the general public an opportunity to learn about nature and marine mammals.

The proposed location for Ocean Expo is a 6.5-acre site in Harrison County, within the boundaries of the City of D'Iberville (see Figure 1). The site is located south of Interstate 10 and west of Interstate 110, outside the 100-year floodplain.

Vittor & Associates inspected the proposed project location and surrounding area in April 2010. Upland habitat consists of an overstory of water oak (*Quercus nigra*), red maple (*Acer rubrum*), and Chinese tallow (*Triadica sebifera*). An understory is mainly wax myrtle (*Myrica cerifera*), inkberry (*Ilex glabra*), and yaupon (*Ilex vomitoria*), with some Chinese privet (*Ligustrum sinense*), large gallberry (*Ilex coriacea*), and persimmon (*Diospyros viginiana*). Broom sedge (*Andropogon virginicus*) is a common herbaceous plant on the site.

A drainage easement lies within the 6.5-acre project site (Figure 2), and conveys stormwater runoff to the north toward the Tchoutacabouffa River. A 0.58-acre wetland area associated with the drainageway consists primarily of Chinese tallow, sweetbay magnolia (*Magnolia virginiana*), and red maple, with a Chinese privet understory. Herbaceous wetland plants include alligator weed (*Alternanthera philoxeroides*), soft rush (*Juncus effusus*), and spike rush (*Elocharis* sp). WRAP analysis indicates that the wetland is low quality, primarily because of recent disturbance, domination by invasive vegetation, and development surrounding the site.

Vittor & Associates inspected the proposed project site and adjacent areas for the presence of threatened or endangered species on April 26, 2010. Target species for the site survey included gopher tortoise, red-cockaded woodpecker, Louisiana quillwort, black pine snake, Mississippi gopher frog, and eastern indigo snake.

No federal-protected species were observed on or near the project site. No individuals of quillwort or suitable habitat for quillwort were encountered. Suitable habitat for gopher tortoise does not exist within or adjacent to the project site, and no tortoises or their burrows were observed during the survey. No trees suitable for red-cockaded woodpecker were found, and its foraging habitat does not exist on the project site. No indigo snake, black pine snake, or gopher frog were observed during the survey. Suitable black bear habitat does not exist within or adjacent to the project site. No bald eagles were observed during site surveys.

Vittor & Associates will produce an environmental assessment (EA) for this proposed project. In compliance with the National Environmental Policy Act of 1969, as amended, we request that your agency review its jurisdiction within the project area. If you have any questions or need additional information, please contact me by telephone at 251.605.2880 or electronic mail at tthibaut@bvaenviro.com.

Sincerely

Tim Thibaut

Tim Thibaut
Senior Program Manager

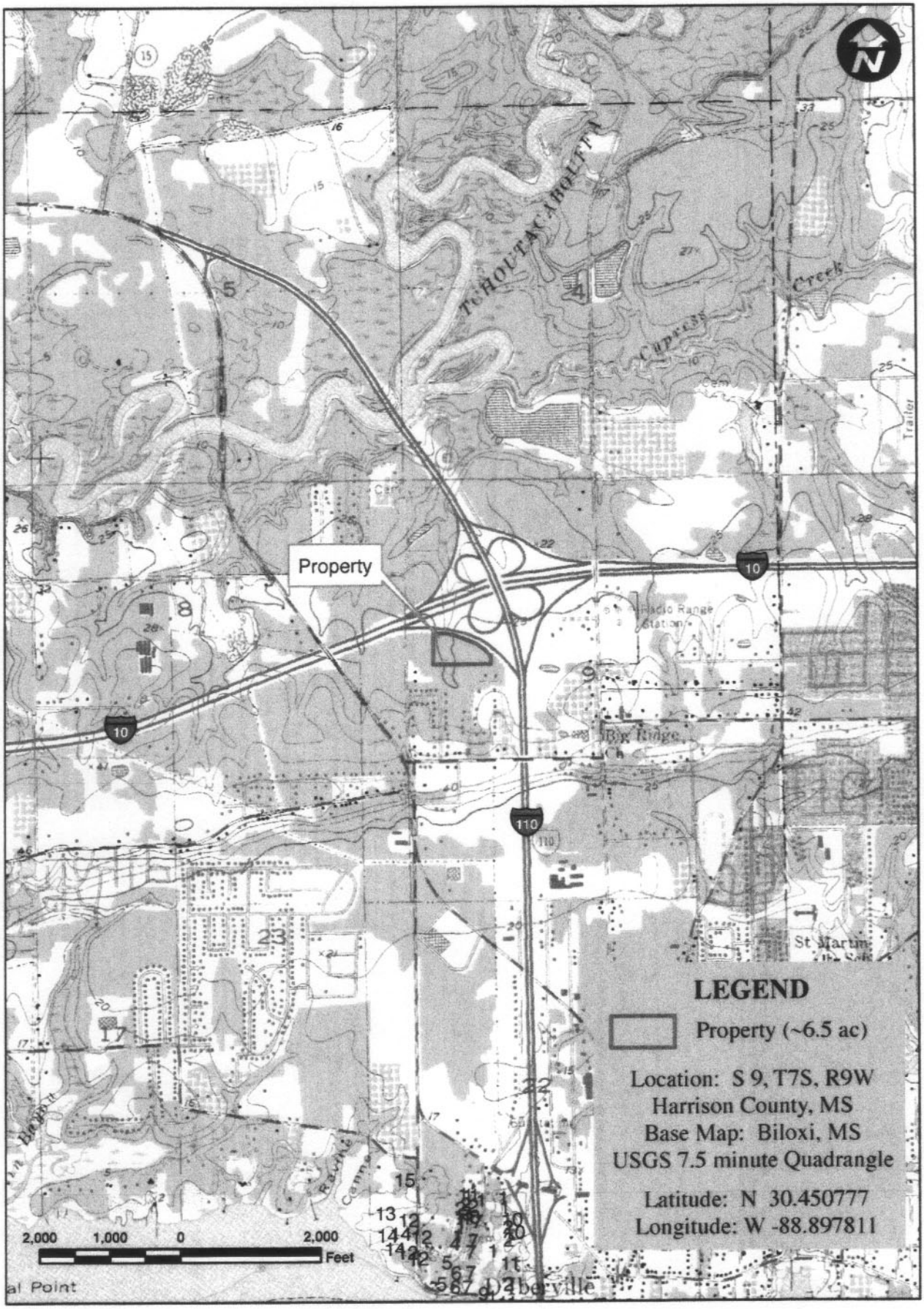


FIGURE 1. Location of the proposed Ocean Expo project, in D' Iberville, Mississippi.

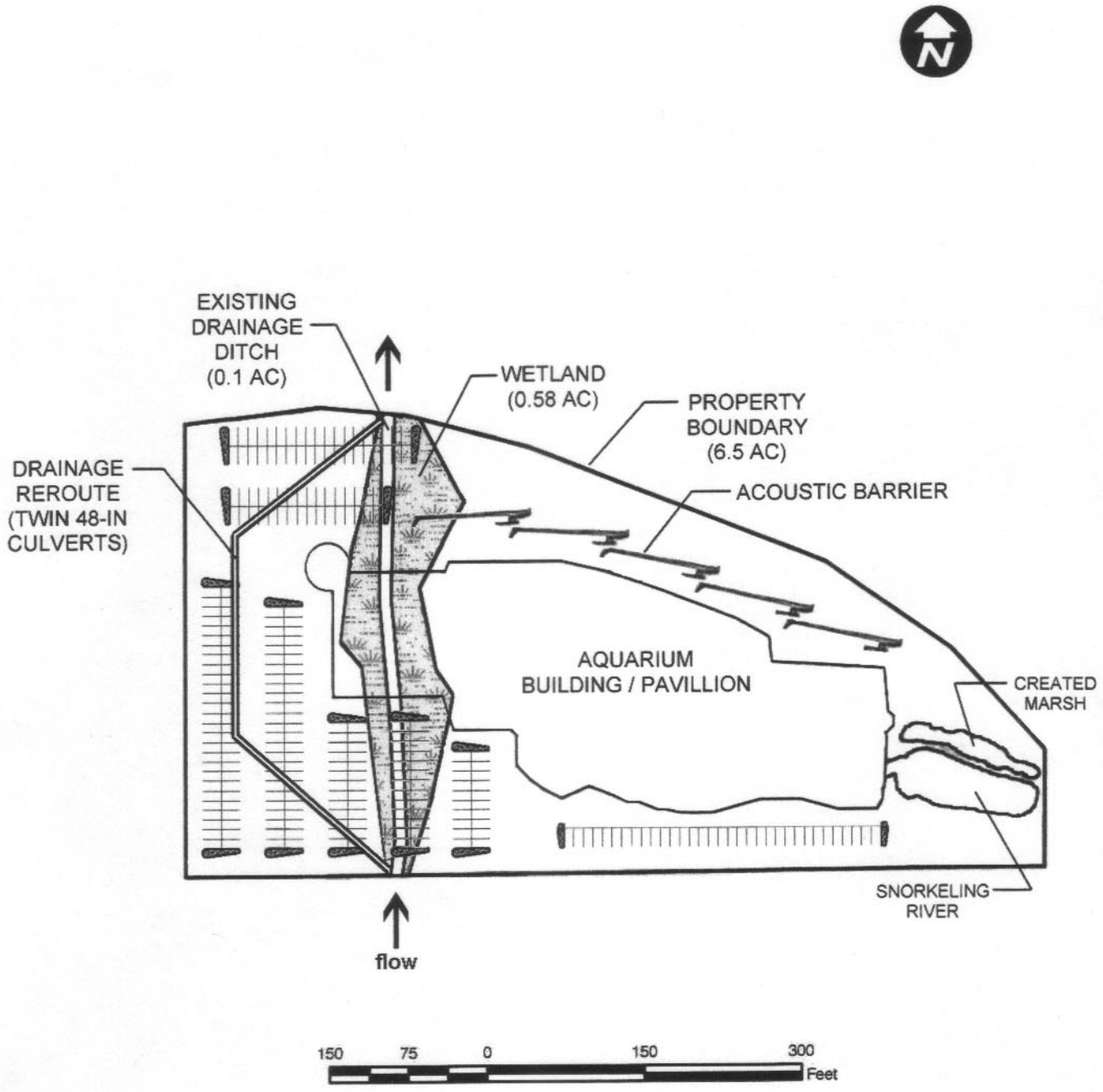


FIGURE 2. Site plan for the Ocean Expo, in D'Iberville, Mississippi.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Mississippi Field Office
6578 Dogwood View Parkway, Suite A
Jackson, Mississippi 39213

June 28, 2010

Mr. Tim Thibaut
Barry A. Vittor & Associates
8060 Cottage Hill Road
Mobile, Alabama 36695

Dear Mr. Thibaut:

The Fish and Wildlife Service (Service) has received your letter dated June 17, 2010, regarding the proposed Ocean Expo project in Harrison County, Mississippi. Our comments are submitted in accordance with the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Based on the information provided in your report, the Service concurs with your findings that there are no federally listed species on the subject site. This concludes informal Section 7 consultation under the ESA.

If you have any questions, please contact David Felder, telephone: (601) 321-1131.

Sincerely,

for Stephen M. Ricks
Field Supervisor
MS Field Office

BARRY A. VITTOR & ASSOCIATES, INC.
ENVIRONMENTAL RESEARCH & CONSULTING
8060 Cottage Hill Road Mobile, Alabama 36695
Phone (251) 633-6100 Fax (251) 633-6738

COPY

May 19, 2010

Jim Woodrick
State Historic Preservation Officer
Mississippi Department of Archives and History
P.O. Box 571
Jackson, Mississippi 39205-0571
(601) 576-6940

RE: Phase I CRA of a Proposed Development Southwest of the I-10/I-110 Interchange in D'Iberville, Harrison County, Mississippi.

Dear Mr. Woodrick,

Enclosed please find 2 copies of "A Phase I Cultural Resources Assessment of a Proposed Development Southwest of the I-10/I-110 Interchange in D'Iberville, Harrison County, Mississippi" prepared by Barry A. Vittor & Associates, Inc. No further testing is recommended for this project.

As always, if there are any questions or concerns do not hesitate to give us a call or send an email.

Best Regards,

Jason A. Gardner, M.A., RPA
Archaeology Program Manager
jgardner@bvaenviro.com

CC: Dr. Barry Vittor

------Original Message------
From: Jim Woodrick
To: jgardner@bvaenviro.com
Sent: May 27, 2010 11:01 AM
Subject: Phase I CRA of development in D'Iberville

Jason:

Just finished preparing our concurrence with your CRA report for the development at I-10/I-110 in D'Iberville, and just thought I'd let you know that our reviewer made a point of telling me that the depiction of the test pits in the report was excellent and should serve as a model for all reports. Always nice to hear something good when it comes along, I think, so just thought you'd want to know.

Regards,

Jim Woodrick
MDAH / MS SHPO

Sent via BlackBerry from T-Mobile

BARRY A. VITTOR & ASSOCIATES, INC.
ENVIRONMENTAL RESEARCH & CONSULTING
8060 Cottage Hill Road Mobile, Alabama 36695
Phone (251) 633-6100 Fax (251) 633-6738

Kenneth H. Carleton
Tribal Historic Preservation Officer
Mississippi Band of Choctaw Indians
P.O. Box 6257
Choctaw, Mississippi 39350

June 17, 2010

Dear Mr. Carleton:

The Institute for Marine Mammal Studies (IMMS), a 501 (C) (3) non-profit organization, has submitted a request for National Oceanic and Atmospheric Administration (NOAA) federal financial assistance to construct Ocean Expo in D'Iberville, Mississippi. The funding would be used to construct Ocean Expo as a state-of- the-art aquarium and one-of-a-kind learning center that will provide both students and the general public an opportunity to learn about nature and marine mammals. The proposed location for Ocean Expo is a 6.5-acre site in Harrison County, within the boundaries of the City of D'Iberville (see Figure 1). The site is located south of Interstate 10 and west of Interstate 110, outside the 100-year floodplain.

Vittor & Associates performed a cultural resources assessment of the project site in May 2010. The CRA report is attached. This CRA included a review of the archaeological literature (state site files), historic literature, and records and an on-site survey with subsurface testing.

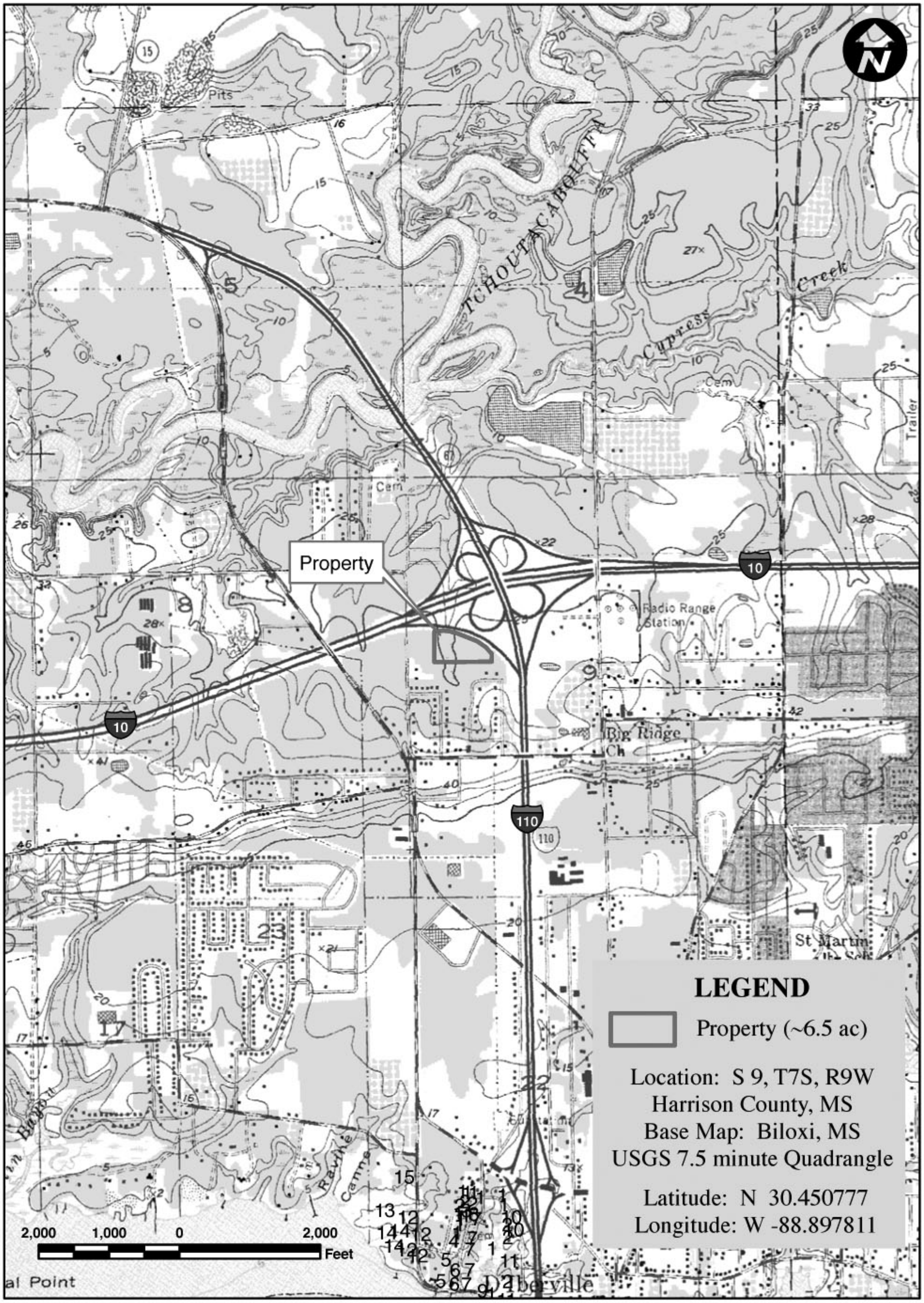
The Mississippi State Site File indicates that there are four previously recorded archaeological sites within one mile of the project area. None of these sites would be affected by the proposed project. Prior to the cultural resources assessment, the list of Mississippi Landmarks and the National Register of Historic Places was reviewed. No previously identified structures or sites that are currently listed as Mississippi Landmarks or listed on the National Register of Historic Places are located within the research area or within a one-mile radius of the proposed project area.

An on-site pedestrian survey was conducted of the entire project site. Shovel tests were excavated at standard intervals (30 and 60 meters) when possible and at judgmental intervals. A total of 45 tests were excavated in areas that were not wetlands. The tests measured approximately 30 centimeters in diameter and were excavated to sterile subsoil. Wetlands were visually inspected. However, no shovel tests were excavated in the wetland areas due to the extreme saturation of the soil, which did not typically allow for prehistoric human occupation. No historic features were observed in the wetlands. Other than modern trash, no artifacts, historic structures, or archaeological sites were found on the property.

Vittor & Associates will produce an environmental assessment (EA) for this proposed redevelopment project. In compliance with the National Environmental Policy Act of 1969, as amended, we request that your agency review its jurisdiction within the project. If you have any questions or need additional information, please contact me by telephone at 251.605.2880 or electronic mail at tthibaut@bvaenviro.com.

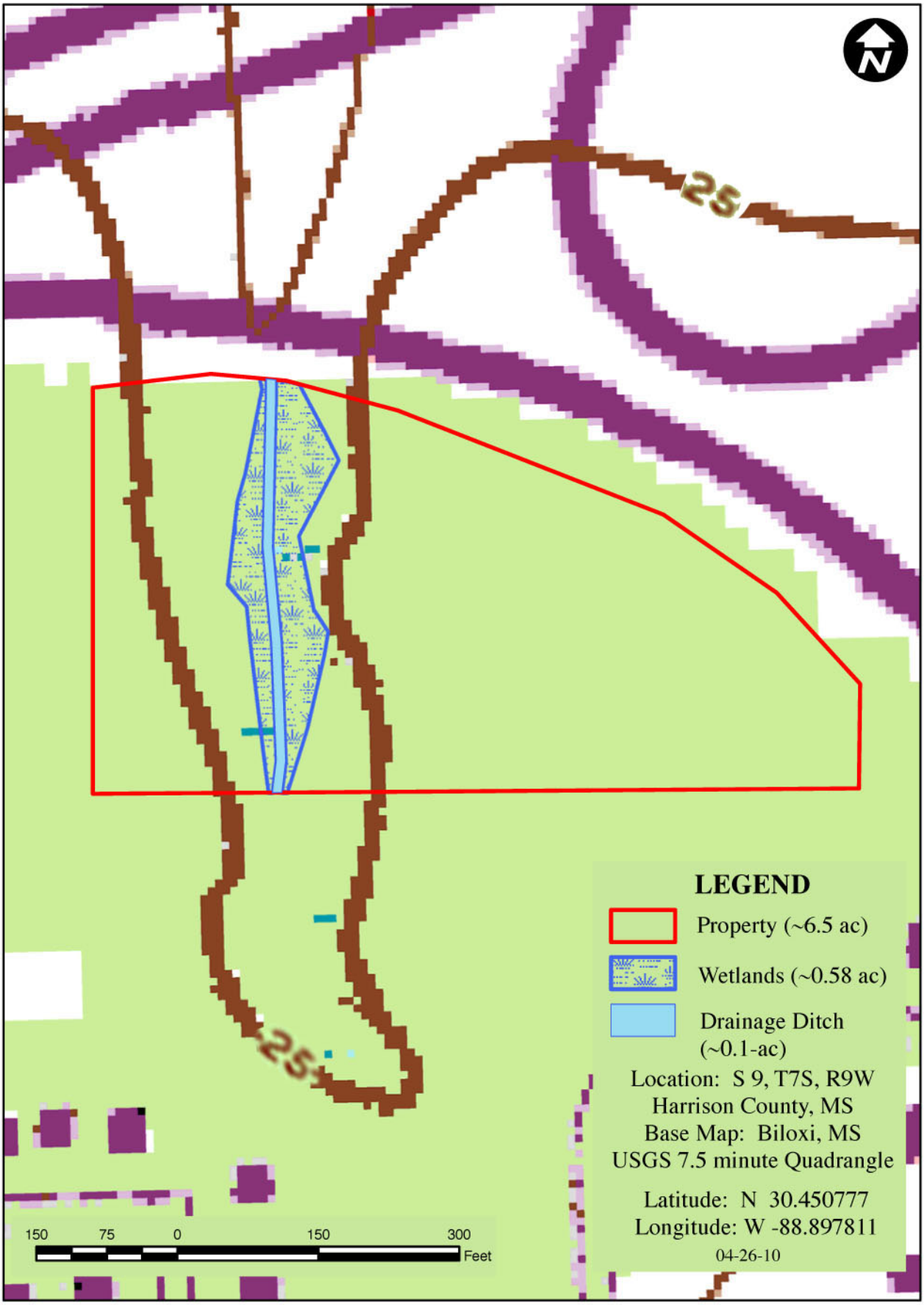
Sincerely

Tim Thibaut
Senior Program Manager



Property
LEGEND
Property (~6.5 ac)
Location: S 9, T7S, R9W
Harrison County, MS
Base Map: Biloxi, MS
USGS 7.5 minute Quadrangle
Latitude: N 30.450777
Longitude: W -88.897811
2,000 1,000 0 2,000
Feet
TCHOUTACABOUFFA
Cypress Creek
Radio Range Station
Big Ridge Ch
St Martin
D'Iberville
Pits
Cem
Trailer

Appendix D – Wetland Delineation


25
25
LEGEND
Property (~6.5 ac)
Wetlands (~0.58 ac)
Drainage Ditch
(~0.1-ac)
Location: S 9, T7S, R9W
Harrison County, MS
Base Map: Biloxi, MS
USGS 7.5 minute Quadrangle
Latitude: N 30.450777
Longitude: W -88.897811
04-26-10
150 75 0 150 300
Feet

WETLAND DETERMINATION DATA FORM- Atlantic and Gulf Coastal Plain Region

Project/Site: Ocean Expo **City/County:** Harrison **Sampling Date:** 04/26/10
Applicant/Owner **State:** MS **Sampling Point:** UPL
Investigator(s): Matthew Stowe & Josh Everett **Section, Township, Range:** S9, T7S, R9W
Land (Hillslope, terrace, etc.): Some Hillslope **Local relief (concave, convex, none):** Convex **Slope (%):**
Subregion (LRR or MLRA): **Lat:** 30.451303 **Long:** -88.897894 **Datum:**
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____ **Soil** ____ **or Hydrology** ____ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes X No
Are Vegetation ____ **Soil** ____ **or Hydrology** ____ **naturally problematic?** (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes		No	X	**Is the Sampled Area within a Wetland** Yes ____ No X
Wetland Hydrology Present?	Yes		No	X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) (LRR U)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral test (D5)

Field Observations:

Surface Water Present?	Yes	____	No	X	Depth (Inches):
Water Table Present?	Yes	____	No	X	Depth (Inches):
Saturation Present? (includes capillary fringe)	Yes	____	No	X	Depth (Inches):

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: UPL

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Quercus nigra*		Yes	FAC
2. *Acer rubrum*		Yes	FAC
3. *Triadica sebifera*		Yes	FAC
4. *Prunus serotina*		No	FAC U
5. *Quercus virginiana*		No	FAC U+
6. *Liquidambar styraciflua*		No	FAC +
7.			
	=	Total Cover	

Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=	Total Cover	

Shrub Stratum (Plot size:)			
1. *Myrica ceifera*		Yes	FAC +
2. *Ilex galbra*		Yes	FAC W
3. *Ilex vomitoria*		Yes	FAC
4. *Ligustrum sinense*		No	FAC
5. *Ilex coriacea*		No	FAC W
6. *Diospyros virginiana*		No	FAC
7.			
	=	Total Cover	

Herb Stratum (Plot size:)			
1. *Andropogon virginicus*		Yes	FAC-
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	=	Total Cover	

Woody Vine Stratum (Plot size:)			
1. *Rubus argutus*		Yes	FAC U+
2. *Gelsemium sempervirens*		Yes	FAC
3.			
4.			
5.			
	=	Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 7 **(A)**

Total Number of Dominant Species Across All Strata: 8 **(B)**

Percent of Dominant Species That are OBL, FACW, or FAC: 87% **(A/B)**

Prevalence index worksheet:

Total % Cover of:			Multiply by:
OBL species		x1=	
FACW species	2	x2=	4
FAC species	5	x3=	15
FACU species	3	x4=	14
UPL species		x5=	
Column Totals:	10	(A)	31 (B)

Prevalence Index = B/A= 2.0

Hydrophytic Vegetation Indicators:

- X **Dominance Test is >50%**
- X **Prevalence index is ≤3.0[1]**
- ___ **Problematic Hydrophytic Vegetation[1] (Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft. (1 m) in height.

Woody vine – All woody vines, regardless of height

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: UPL

Project Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10 yr 5/8						Sandy Fill	
8-18	10 yr 4/2						Sandy	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) (LRR P, T, U)
- ___ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- ___ Muck Presence (A8) (LRR U)
- ___ 1 cm Muck (A9) (LRR P, T)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (MLRA 150A)
- ___ Sandy Mucky Mineral (S1) (LRRR O)
- X Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR P, S, T, U)
- ___ Polyvalue Below Surface (S8) (LRR S, T, U)
- ___ Thin Dark Surface (S9) (LRR S, T, U)
- ___ Loamy Mucky Mineral (F1) (LRR O)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (LRR U)
- ___ Depleted Ochric (F11) (MLRA 151)
- ___ Iron-Manganese masses (F12) (LRR O, P, T)
- ___ Umbric Surface (F3) 9LRR P, T, U)
- ___ Delta Ochric (F17) (MLRA 15)
- ___ Reduced Vertic (F18) (MLRA 150A, 150B)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR O)
- ___ 2 cm Muck (A10) (LRR S)
- ___ Reduced Vertic (F18) (outside MLRA 150A,B)
- ___ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM- Atlantic and Gulf Coastal Plain Region

Project/Site: Ocean Expo **City/County:** Harrison **Sampling Date:** 04/26/10
Applicant/Owner **State:** MS **Sampling Point:** WET 1
Investigator(s): Matthew Stowe & Josh Everett **Section, Township, Range:** S9, T7S, R9W
Land (Hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** None **Slope (%):**
Subregion (LRR or MLRA): **Lat:** 30.451375 **Long:** -88.898348 **Datum:**
Soil Map Unit Name: **NWI classification:**
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____ **Soil** ____ **or Hydrology** ____ **significantly disturbed?** **Are "Normal Circumstances" present?** Yes X No
Are Vegetation ____ **Soil** ____ **or Hydrology** ____ **naturally problematic?** (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes	X	No	**Is the Sampled Area within a Wetland**	Yes X No
Wetland Hydrology Present?	Yes	X	No		

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required: check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- X Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) (LRR U)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X FAC-Neutral test (D5)

Field Observations:

Surface Water Present?	Yes	X	No	____	**Depth (Inches):**	12"
Water Table Present?	Yes	____	No	X	**Depth (Inches):**	
Saturation Present? (includes capillary fringe)	Yes	____	No	X	**Depth (Inches):**	

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: WET 1

Tree Stratum (Plot size:_____)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Triadica sebifera*		Yes	FAC
2. *Magnolia virginiana*		Yes	FAC W+
3. *Acer rubrum*		Yes	FAC
4. *Quercus nigra*		No	FAC
5. *Nyssa biflora*		No	OBL
6.			
7.			
	=	Total Cover	
Sapling Stratum (Plot size:_____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=	Total Cover	
Shrub Stratum (Plot size:_____)			
1. *Ligustrum sinense*		Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	=	Total Cover	
Herb Stratum (Plot size:_____)			
1. *Alternanthera philoxeroides*		No	OBL
2. *Juncus effusus*		No	FAC W+
3. *Eleocharis sp.*		No	N-I
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	=	Total Cover	
Woody Vine Stratum (Plot size: _____)			
1. *Ampelopsis arborea*		Yes	FAC+
2. *Polygonum sp*		No	N-I
3. *Woodwardia areolata*		No	OBL
4. *Rubus sp.*		No	N-I
5. *Smilax sp.*		No	N-I
	=	Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 5 **(A)**

Total Number of Dominant Species Across All Strata: 5 **(B)**

Percent of Dominant Species That are OBL, FACW, or FAC: 100% **(A/B)**

Prevalence index worksheet:

Total % Cover of:			Multiply by:	
OBL species	3	**x1=**	3	
FACW species	2	**x2=**	4	
FAC species	5	**x3=**	15	
FACU species		**x4=**		
UPL species		**x5=**		
Column Totals:	10	**(A)**	22	**(B)**

Prevalence Index = B/A= 2.2

Hydrophytic Vegetation Indicators:

X **Dominance Test is >50%**

X **Prevalence index is ≤3.0[1]**

___ **Problematic Hydrophytic Vegetation[1] (Explain)**

[1] **Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.**

Definitions of Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft. (1 m) in height.

Woody vine – All woody vines, regardless of height

Hydrophytic Vegetation Present? **Yes** X **No** ___

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET 1

Project Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10 yr 2/2						Sandy Muck	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) (LRR P, T, U)
- ___ 5 cm Mucky Mineral (A7) (LRR P, T, U)
- X Muck Presence (A8) (LRR U)
- ___ 1 cm Muck (A9) (LRR P, T)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) (MLRA 150A)
- X Sandy Mucky Mineral (S1) (LRRR O)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR P, S, T, U)
- ___ Polyvalue Below Surface (S8) (LRR S, T, U)
- ___ Thin Dark Surface (S9) (LRR S, T, U)
- ___ Loamy Mucky Mineral (F1) (LRR O)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- X Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (LRR U)
- ___ Depleted Ochric (F11) (MLRA 151)
- ___ Iron-Manganese masses (F12) (LRR O, P, T)
- ___ Umbric Surface (F3) 9LRR P, T, U)
- ___ Delta Ochric (F17) (MLRA 15)
- ___ Reduced Vertic (F18) (MLRA 150A, 150B)
- ___ Piedmont Floodplain Soils (F19) (MLRA 149A)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (LRR O)
- ___ 2 cm Muck (A10) (LRR S)
- ___ Reduced Vertic (F18) (outside MLRA 150A,B)
- ___ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ___ Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

Wetland Rapid Assessment Procedure

☐ Check one

☒ Existing Conditions ☐ Proposed Conditions (WRAP)

Application Number	Project Name	Date	Evaluator	Wetland Type
	Ocean Expo	04/26/10	M. Stowe & J. Everett	

Land Use:

FLUCCS Code: Description:

Wildlife Utilization (WU): 0.5

Wetland Canopy (O/S): 0.5

Wetland Ground Cover (GC): 0.5

Habitat Support/Buffer

Buffer type	(Score) X	(% of area)	=Sub Totals
I-10	1.5	60	0.9
Residential	1.5	30	0.45
Undevel.	2	10	0.20

TOTAL: 1.55

Field Hydrology (HYD): 1.0

WQ Input & Treatment (WQ)*: 1.425

Land use Category (LU)

Land use Category	(Score) X	(% of area)	=Sub Totals
I-10	1.0	60	0.6
Residential	2.0	30	0.6
Undeveloped	1.5	10	0.15

(LU) TOTAL: 1.35

Pretreatment Category (PT)

Pretreatment Category	(Score) X	(% of area)	=Sub Totals
Wetland Treatment	1.5	100	1.5

PT TOTAL: 1.5

WRAP Score: 0.30

Wildlife Utilization (WU) 0.5	Minimal usage by invertebrates or small turtles. No usage by mammals or birds of large reptiles. Sparse upland forage Commercial land surrounding site
Wetland Canopy (O/S) 0.5	Less than 10% canopy Greater than 75% invasive species No roosting habitat for birds
Wetland Ground Cover (GC) 0.5	No more than 10% ground cover Very recent drainage maintenance clearing Greater than 75% invasive species
Habitat Support/Buffer 1.55	60% of wetland has an upland buffer of less than 300' wide cut-off by Interstate 10 30% of wetland has an upland buffer less than 300' wide cut-off by a subdivision 10% of wetland has an upland buffer greater than 300' wide cut-off by Interstate 10
Field Hydrology (HYD) 1.0	Wetland fringes a ditch that flows north into another ditch along I-10
WQ Input & Treatment (WQ)1.425	Land Use: 60% Interstate; 30% Residential; 10% Undeveloped Pine Plantation Water Quality Pretreatment: Wetland is part of treatment

Appendix E – Cultural Resources Assessment

A PHASE I CULTURAL RESOURCES ASSESSMENT OF A PROPOSED DEVELOPMENT SOUTHWEST OF THE I-10/I-110 INTERCHANGE IN D'IBERVILLE, HARRISON COUNTY, MISSISSIPPI

Barry A. Vittor & Associates, Inc.
Environmental Research and Consulting

A PHASE I CULTURAL RESOURCES ASSESSMENT OF A PROPOSED DEVELOPMENT SOUTHWEST OF THE I-10/I-110 INTERCHANGE IN D'IBERVILLE, HARRISON COUNTY, MISSISSIPPI

LEAD FEDERAL AGENCY

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May 2010

Introduction

This report describes a cultural resources assessment (archaeological and historical survey) of a proposed development immediately southwest of the Interstate 10 and Interstate 110 interchange in D'Iberville, Harrison County, Mississippi. The project will be located in Section 9, Township 7 South, Range 9 West (U.S.G.S. Biloxi 7.5' quadrangle) (Figure 1). Principal Investigator for this project is Jason A. Gardner, RPA. Project elevation is 25 feet above mean sea level. The project will include 6.5 acres of undeveloped property.

The objectives for this project were to identify any cultural resources that would be impacted by the proposed development. No archaeological or historic sites were located.

Methodology for Assessment

The assessment conforms to the guidelines established by the State Historic Preservation Officer, Mississippi Department of Archive & History, Jackson. The assessment included a state site file search, historic literature search and an on-site survey with subsurface testing. The United States Army Corps of Engineers, Mobile District is considered the lead federal agency for this project.

Project Description

The proposed project will include the relocation of an existing stormwater drain to facilitate development of the 6.5 acre property. The Area of Potential Effects (APE) is considered the entire project area. There should be no additional visual or auditory effects to the surrounding area once construction is completed.

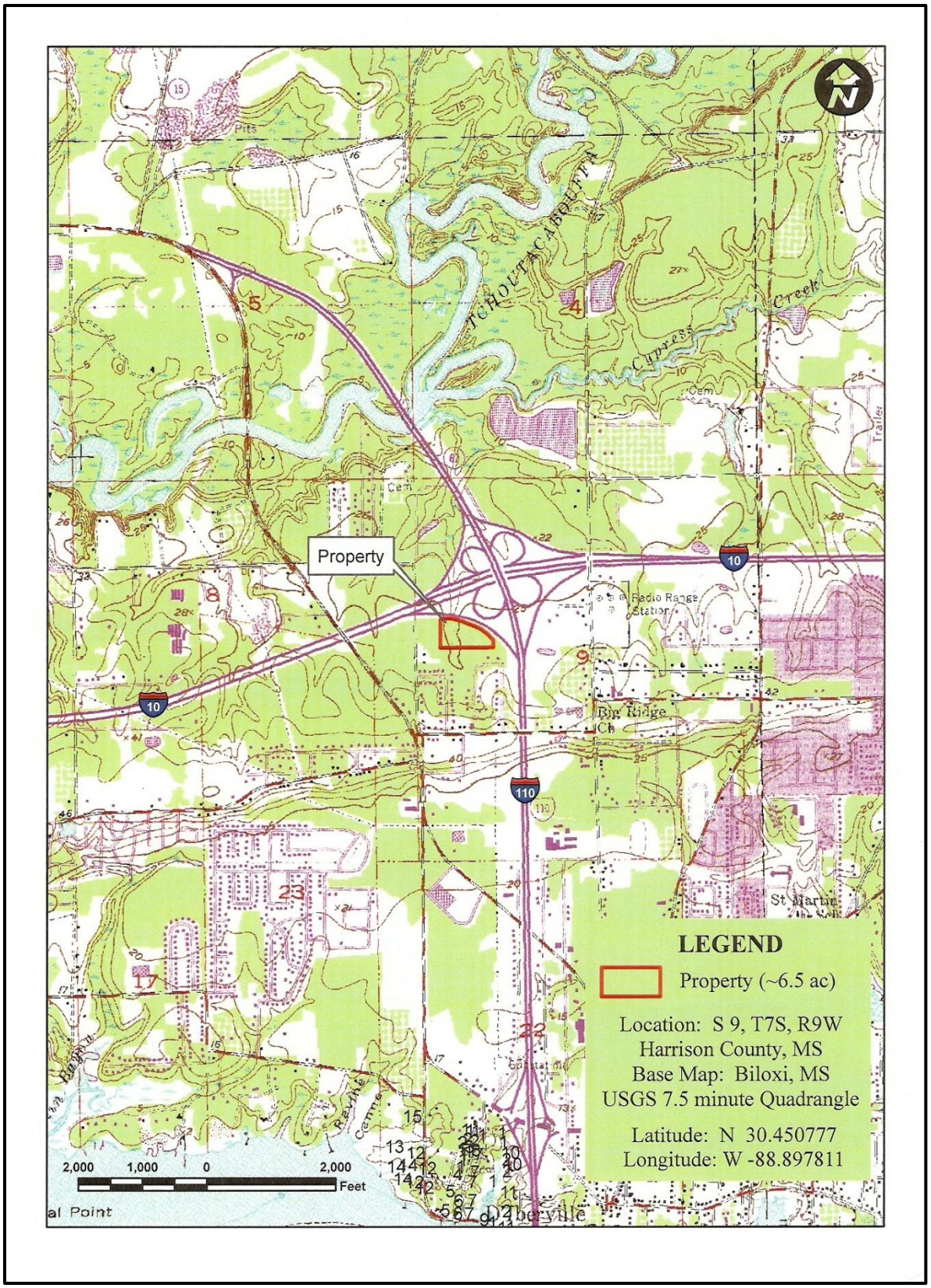

Figure 1. Project Location (Project boundaries depicted are approximate).

Archaeological and Historical Literature Search

Numerous cultural resources assessments have been conducted within one mile of the proposed development. These surveys are detailed in the following table:

Table 1. Previous Surveys Within One Mile of the Project Area

Author(s)	Date of Survey	Report Title	Survey Methods/Coverage	Resources Located
Aaron S. Fogel and Sara A. Hahn	2009	"A Phase I Cultural Resources Survey for the Proposed Road Improvement Project, Interstate 10-Interstate 110 Interchange, Harrison and Jackson Counties, Mississippi"	Surface survey & shovel tests/553.87 acres	None
James Lauro	1998	"Cultural Resource Survey of Approximately Thirty Acres, Harrison County, Mississippi"	Unknown/~30 acres	None
James Lauro	1999	"Cultural Resource Survey of Forty Acre Tract of Land, Harrison County, Mississippi"	Surface survey & shovel tests/40 acres	None
James Lauro	2002	"Cultural Resource Survey of Fifty-three Acres, Harrison County, Mississippi"	Surface survey & shovel tests/53 acres	None
James Lauro	2003	"Cultural Resource Survey of Approximately 31 Acres, Harrison County, Mississippi"	Surface survey & shovel tests/31 acres	None
James Lauro	2006	"Cultural Resource Survey of Approximately 66 Acres, Jackson County, Mississippi	Surface survey & shovel tests/66 acres	None
James Lauro	2008	"Phase I Cultural Resource Survey of the D'Iberville Waterfront Wastewater System Improvements Project S22, Harrison County, Mississippi"	Surface survey & shovel tests/approx. 20 acres	None
James Lauro	2008	"Phase I Cultural Resource Survey of Proposed D'Iberville Regional Wastewater Treatment Facility and Transmission Station Project S20, Harrison County, Mississippi"	Surface survey & shovel tests/112 acres	None
James Lauro	2009	"Phase I Cultural Resource Survey of the Central Avenue to Bay Shore Drive Improvements, Harrison County, Mississippi"	Surface survey & shovel tests/approx. 1 acre	None
C. Baxter Mann, Jr.	1997	"A Cultural Resource Survey of a Proposed Homesite and Possible Future Pier to be Located in Harrison County, Mississippi"	Surface survey & shovel tests/< ½ acre	None
C. Baxter Mann, Jr.	1997	"A Cultural Resource Survey of the Proposed Cypress Creek Subdivision (105 Acres) to be Located in Harrison County, Mississippi"	Surface survey & shovel tests/105 acres	None
Cyril B. Mann	1994	"A Cultural Resource Survey of Proposed Spoil Pile Sites in Harrison County, Mississippi"	Unknown	None
Cyril B. Mann, Jr.	1995	"A Cultural Resource Survey of a Proposed Development to be Located in Harrison County, Mississippi"	Surface survey & shovel tests/90 acres	None
Cyril B. Mann, Jr.	1996	"A Cultural Resource Survey of a Proposed Development to be Located in Harrison County, Mississippi"	Surface survey & shovel tests/90 acres	None
Robert E. Reams	2005	"A Phase I Cultural Resources Assessment of a Proposed Project near Gay Road, Harrison County, Mississippi"	Surface survey & shovel tests/22 acres	None
Robert E. Reams	2006	"A Phase I Cultural Resources Assessment of a New Residential Development off of Lamey Bridge Road, Harrison County, Mississippi"	Surface survey & shovel tests/4 acres	None
Robert E. Reams	2007	"Cultural Resource Survey of Area near I-10/I-110 Interchange, Harrison County, Mississippi"	Surface survey & shovel tests/66 acres	None
Robert E. Reams	2007	"Cultural Resource Survey of Magnolia Bluff Plantation Subdivision, Harrison County, Mississippi"	Surface survey & shovel tests/13 acres	22Hr985 & historic bridge (no site no.)
Robert E. Reams	2008	"Cultural Resources Survey of Area Northwest of I-10/I-110 Interchange, Harrison County, Mississippi"	Surface survey & shovel test/3 acres	None
Noel R. Stowe	2008	"A Phase I Cultural Resources Assessment of Proposed Improvements to Popps Ferry Road in Harrison County, Mississippi"	Surface survey & shovel tests/5 acres	None

The Mississippi State Site File indicates that there are four previously recorded archaeological sites within one mile of the project area. Table 2 provides the details of each of these sites if known. None of these sites will be affected by the proposed project.

Table 2. Previously Recorded Sites within One Mile of the Project Area

Site #/Name	Cultural Affiliation	NRHP eligibility	Recorded by:
22Hr523 "Wilde Site"	Unknown	Unknown	R.A. Marshall/1970
22HR863	Unknown	Unknown	Unknown
22Hr985 "Nitak Hullo Nukfish"	Early and Middle Woodland	Considered ineligible	Robert Reams/2007
22Hr1000 "Wells Mulholland Cemetery"	Historic	Unknown	Dale Greenwell/1990

Prior to the cultural resources assessment, the list of Mississippi Landmarks and the *National Register of Historic Places* was reviewed. No previously identified structures or sites that are currently listed as Mississippi Landmarks or listed on the *National Register of Historic Places* are located within the research area or within a one mile radius of the proposed project area.

Environment

The proposed project is located immediately southwest of the Interstate 10 and Interstate 110 interchange in D'Iberville, Mississippi. It is bounded on the north and east by the interchange including on and off ramps, on the south by a residential area, and on the west by a small pine plantation and McAlpine Road. The surrounding area is mostly residential with associated infrastructure such as roads and driveways. Vegetation in the project includes an overstory of planted pines, pin oaks, Chinese tallow, sweet gum, and red maple, and an understory of privet hedge, yaupon, wax myrtle, persimmon, gallberry, titi, muscadine, and French mulberry. The project drains north into an unnamed tributary of the Tchoutacabouffa River. Wetlands comprise approximately 0.58 acres or approximately 9% of the entire project area. A stormwater drainage ditch runs through the center of the project and comprises approximately 0.1 acres of the entire project area. Past disturbances in the project area include logging activities, clearing, and erosion. Soils are described as mostly sandy and silty loams with sandy loam subsoils, and are classified into the Latonia loamy sand association with 0-2% slopes and the Harleston fine sandy loam association with 0-2% slopes. Both of these soil classifications are well drained to moderately well drained.

Figure 2. View of Project Area to the East.

Figure 3. View of Project Area to the North.

Figure 4. View of Project Area to the South.

On Site Survey and Field Methods

On April 30, 2010, Jason Gardner and Gerald Ollhoft conducted an on-site pedestrian survey of the entire project. Shovel tests were excavated at standard intervals (30 and 60 meters) when possible and at judgmental intervals. A total of 45 tests were excavated in areas that were not wetlands. The tests measured approximately 30 centimeters in diameter and were excavated to sterile subsoil. All soil was screened through 6.5 mm (¼") hardware cloth. All shovel test profiles were flagged, plotted on a map, recorded in the field and backfilled.

Wetlands were visually inspected. However, no shovel tests were excavated in the wetland areas due to the extreme saturation of the soil which did not typically allow for prehistoric human occupation. No historic features were observed in the wetlands.

Other than modern trash, no artifacts, historic structures, or archaeological sites were found on the property.

Curation

All field notes, photographs, and a copy of this report will be curated at the Erskine Ramsay Archaeological Repository at Moundville, Alabama. A copy of this report will be kept on file at Barry A. Vittor & Associates, Inc., Mobile, Alabama.

Summary and Recommendations

This report describes a cultural resources assessment of a proposed development southwest of the I-10 and I-110 Interchange in D'Iberville, Harrison County, Mississippi. This assessment included a review of the archaeological literature (state site files), historic literature and records and an on-site survey with subsurface testing. In summary, no archaeological sites were located. No further archaeological testing is recommended for this project. If there are any questions about this report, please contact Barry A. Vittor & Associates, Inc.

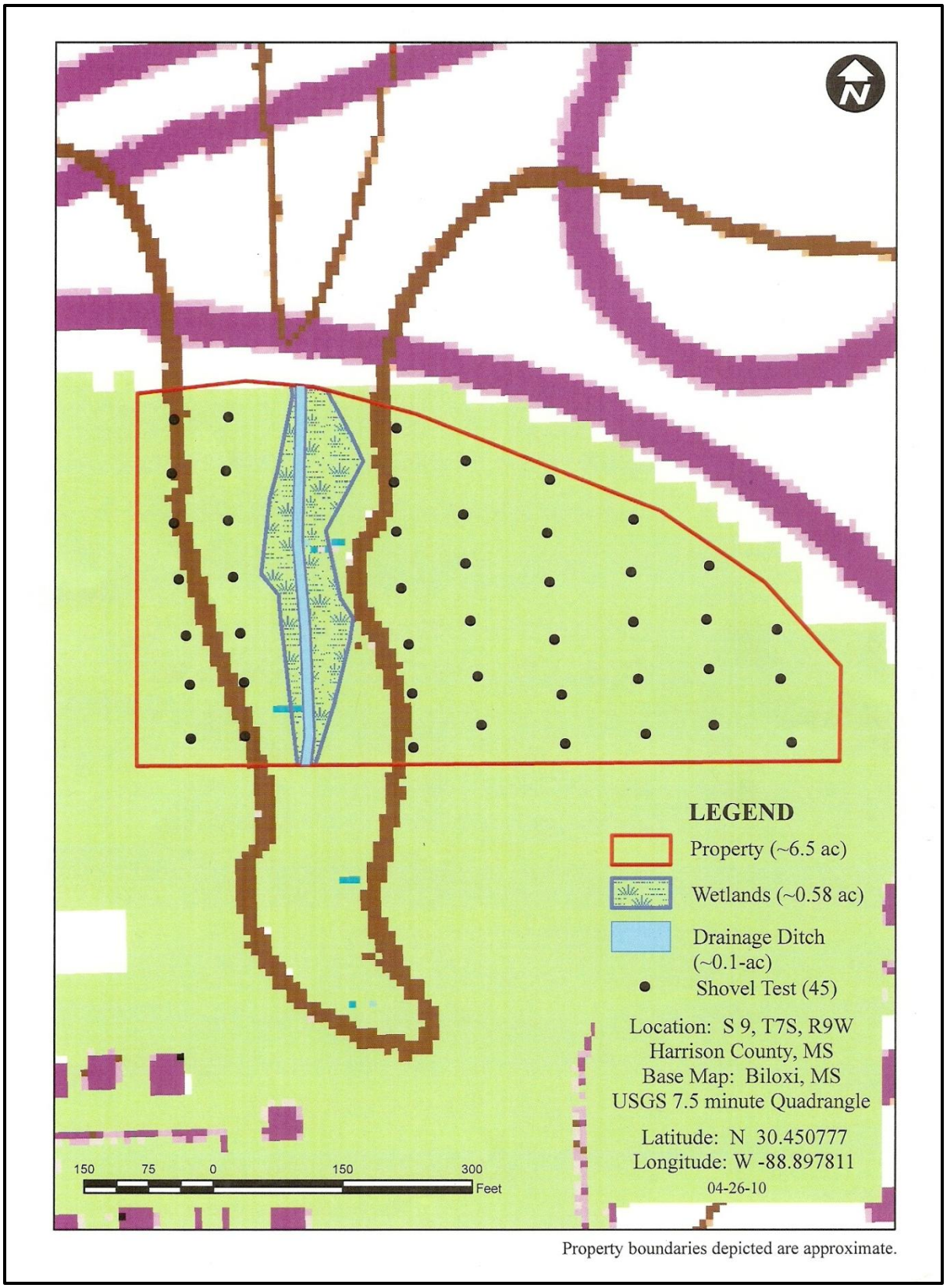

Figure 5. Shovel Test Locations

REFERENCES CITED

Fogel, Aaron S. and Sara A. Hahn

2009 A Phase I Cultural Resources Survey for the Proposed Road Improvement Project, Interstate 10-Interstate 110 Interchange, Harrison and Jackson Counties, Mississippi. Coastal Environments, Inc. Prepared for Volkert & Associates, Inc. Report on file at the Mississippi Department of Archives and History, Jackson.

Lauro, James

1998 Cultural Resource Survey of Approximately Thirty Acres, Harrison County, Mississippi. Archaeology Mississippi, Inc. Prepared for Envirosouth. Report on file at the Mississippi Department of Archives and History, Jackson.

1999 Cultural Resource Survey of Forty Acre Tract of Land, Harrison County, Mississippi. Archaeology Mississippi, Inc. Prepared for Envirosouth. Report on file at the Mississippi Department of Archives and History, Jackson.

2002 Cultural Resources Survey of Fifty-three Acres, Harrison County, Mississippi. Archaeology Mississippi, Inc. Prepared for Envirosouth. Report on file at the Mississippi Department of Archives and History, Jackson.

2003 Cultural Resources Survey of 31 acres, Harrison County, Mississippi. Archaeology Mississippi, Inc. Prepared for Moran, Seymour, & Associates, Inc. Report on file at the Mississippi Department of Archives and History, Jackson.

2006 Phase I Cultural Resources Survey of Approximately 66 acres, Jackson County, Mississippi. Archaeology Mississippi, Inc. Prepared for Moran Engineering, PLLC. Report on file at the Mississippi Department of Archives and History, Jackson.

2008 Phase I Cultural Resources Survey of the D'Iberville Waterfront Wastewater System Improvements Project S22, Harrison County, Mississippi. Archaeology Mississippi, Inc. Prepared for Waggoner Engineering. Report on file at the Mississippi Department of Archives and History, Jackson.

2008 Phase I Cultural Resources Survey of Proposed D'Iberville Regional Waterfront Wastewater System Improvements Project S20, Harrison County, Mississippi. Archaeology Mississippi, Inc. Prepared for Waggoner Engineering. Report on file at the Mississippi Department of Archives and History.

2009 Phase I Cultural Resources Survey of the Central Avenue to Bay Shore Drive Improvement, Harrison County, Mississippi. Mississippi Archaeology, Inc. Prepared for Seymour Engineering, Inc. Report on file at the Mississippi Department of Archives and History, Jackson.

Mann, C. Baxter

1997 A Cultural Resource Survey of a Proposed Homesite and Possible Future Pier to be Located in Harrison County, Mississippi. Mann & Associates. Prepared for Envirosouth. Report on file at the Mississippi Department of Archives and History, Jackson.

1997 A Cultural Resource Survey of the Proposed Cypress Creek Subdivision (105 Acres) to be Located in Harrison County, Mississippi. Mann & Associates. Prepared for Envirosouth. Report on file at the Mississippi Department of Archives and History,

Jackson.

Mann, Cyril B.
1994 A Cultural Resource Survey of Proposed Spoil Pile Sites in, Harrison County, Mississippi. Prepared for Brown & Mitchell, Inc. Report on file at the Mississippi Department of Archives and History, Jackson.
1995 A Cultural Resource Survey of a Proposed Development to be Located in Harrison County, Mississippi. Prepared for Knesal Engineering Services, Inc. Report on file at the Mississippi Department of Archives and History, Jackson.
1996 A Cultural Resource Survey of a Proposed Development to be Located in Harrison County, Mississippi. Prepared for Knesal Engineering, Inc. Report on file at the Mississippi Department of Archives and History, Jackson.

Reams, Robert
2005 A Phase I Cultural Resources Assessment of a Proposed Project near Gay Road, Harrison County, Mississippi. Prepared for Envirosouth. Report on file at the Mississippi Department of Archives and History, Jackson.
2006 A Phase I Cultural Resources Survey of a New Residential Development off of Lamey Bridge Road, Harrison County, Mississippi. Prepared for Envirosouth. Report on file at the Mississippi Department of Archives and History, Jackson.
2007 Cultural Resource Survey of Area near I-10/I-110 Interchangem, Harrison County, Mississippi. Piney Woods Archaeological Services. Prepared for Envirosouth. Report on file at the Mississippi Department of Archives and History, Jackson.
2007 Cultural Resource Survey of Magnolia Bluff Plantation Subdivision, Harrison County, Mississippi. Piney Woods Archaeological Services. Prepared for Joe Gill Consulting, LLC. Report on file at the Mississippi Department of Archives and History, Jackson.
2008 Cultural Resources Survey of Area Northwest of I-10/I-110 Interchange, Harrison County, Mississippi. Piney Woods Archaeological Services. Prepared for EnviroSouth. Report on file at the Mississippi Department of Archives and History, Jackson.

Stowe, Noel R. and Rebecca Stowe
2008 A Phase I Cultural Resources Assessment of Proposed Improvements to Popps Ferry Road in Harrison County, Mississippi. Archaeological Services, Inc. Prepared for Neel-Schaffer. Report on file at the Mississippi Department of Archives and History, Jackson.

APPENDIX A

PROJECT PHOTOGRAPHS

View of Wetland Area in Southern Portion of Project Area.

View of Trail in Project Area, View to the West.

APPENDIX B

SHOVEL TEST DESCRIPTIONS

Provenience	Pos/Neg	Depth (cm)	Soil Profile
CRS 001	Neg	35	0-10cm gray-brown 10YR 5/2 sandy loam, 10-35cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 002	Neg	30	0-30cm mottled reddish-orange 5YR 6/8 silty clay subsoil
CRS 003	Neg	30	0-15cm dark gray 10YR 4/1 mucky loam, 15-30cm pale brown 10YR 6/3 mucky loam subsoil w/oxidation mottling
CRS 004	Neg	40	0-20cm brown 10YR 5/3 silty sand, 20-40cm yellow 10YR 7/6 silty sand subsoil
CRS 005	Neg	35	0-10cm mottled brown 10YR 5/3, gray 10YR 5/1, and yellow 10YR 7/6 sandy loam, 10-35cm pale yellow 10YR 7/8 sandy subsoil
CRS 006	Neg	40	0-20cm brown 10YR 5/3 silty sand, 20-40cm yellow 10YR 7/6 silty sand subsoil
CRS 007	Neg	45	0-10cm gray-brown 10YR 5/2 sandy loam, 10-40cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 008	Neg	35	0-10cm gray-brown 10YR 5/2 sandy loam, 10-35cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 009	Neg	35	0-15cm gray-brown 10YR 5/2 sandy loam, 15-35cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 010	Neg	30	0-10cm brown 10YR 5/3 sandy loam, 10-30cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 011	Neg	30	0-15cm brown 10YR 5/3 sandy loam, 15-30cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 012	Neg	35	0-15cm brown 10YR 5/3 sandy loam, 15-35cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 013	Neg	40	0-20cm brown 10YR 5/3 silty sand, 20-40cm yellow 10YR 7/6 silty sand subsoil
CRS 014	Neg	40	0-15cm brown 10YR 5/3 sandy loam, 15-40cm yellow 10YR 7/6 silty sand subsoil
CRS 015	Neg	25	0-10cm gray-brown 10YR 5/2 sandy loam, 10-25cm yellow 10YR 7/6 silty sand subsoil
CRS 016	Neg	30	0-10cm gray-brown 10YR 5/2 sandy loam, 10-30cm yellow 10YR 7/6 silty sand subsoil

CRS 017	Neg	40	0-20cm gray-brown 10YR 5/2 sandy loam, 20-40cm yellow 10YR 7/6 silty sand subsoil
CRS 018	Neg	40	0-10cm gray-brown 10YR 5/2 sandy loam, 10-40cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 019	Neg	30	0-10cm gray-brown 10YR 5/2 sandy loam, 10-30cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 020	Neg	35	0-15cm gray-brown 10YR 5/2 sandy loam, 15-35cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 021	Neg	40	0-20cm gray-brown 10YR 5/2 sandy loam, 20-40cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 022	Neg	40	0-15cm gray-brown 10YR 5/2 sandy loam, 15-40cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 023	Neg	35	0-15cm gray-brown 10YR 5/2 sandy loam, 15-35cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 024	Neg	30	0-10cm brown 10YR 5/3 sandy loam, 10-30cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 025	Neg	35	0-10cm brown 10YR 5/3 sandy loam, 10-35cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 026	Neg	40	0-15cm brown 10YR 5/3 sandy loam, 15-40cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 027	Neg	40	0-10cm brown 10YR 5/3 sandy loam, 10-40cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 028	Neg	30	0-15cm brown 10YR 5/3 sandy loam, 15-30cm yellowish-brown 10YR 5/6 sandy loam subsoil
CRS 029	Neg	35	0-15cm brown 10YR 5/3 sandy loam, 15-35cm yellow 10YR 7/6 silty sand subsoil
CRS 030	Neg	35	0-15cm brown 10YR 5/3 sandy loam, 15-35cm yellow 10YR 7/6 silty sand subsoil
CRS 031	Neg	30	0-15cm brown 10YR 5/3 sandy loam, 15-30cm yellow 10YR 7/6 silty sand subsoil
CRS 032	Neg	40	0-15cm gray-brown 10YR 5/2 sandy loam, 15-30cm brown 10YR 5/3 sandy loam, 30-40cm yellowish-brown 10YR 5/6 sandy loam subsoil

CRS 033	Neg	30	0-15cm dark gray 10YR 4/1 mucky loam, 15-30cm pale brown 10YR 6/3 mucky loam subsoil w/oxidation mottling
CRS 034	Neg	35	0-10cm dark gray 10YR 4/1 mucky loam, 15-35cm pale brown 10YR 6/3 muck loam subsoil
CRS 035	Neg	40	0-15cm dark gray 10YR 4/1 mucky loam, 15-40cm pale brown 10YR 6/3 muck loan subsoil-wet
CRS 036	Neg	45	0-20cm dark gray 10YR 4/1 loam, 20-45cm pale brown 10YR 6/3 mucky loam subsoil-wet
CRS 037	Neg	25	0-25cm pale brown 10YR 6/3 mucky loam subsoil-wet
CRS 038	Neg	20	0-20cm pale brown 10YR 6/3 mucky loam subsoil-wet
CRS 039	Neg	35	0-15cm dark gray 10YR 4/1 mucky loam, 15-35cm pale brown 10YR 6/3 muck loam subsoil-wet
CRS 040	Neg	40	0-20cm brown 10YR 5/3 silty sand, 20-40cm yellow 10YR 7/6 silty sand subsoil
CRS 041	Neg	30	0-20cm brown 10YR 5/3 silty sand, 20-30cm yellow 10YR 7/6 silty sand subsoil
CRS 042	Neg	30	0-15cm brown 10YR 5/3 silty sand, 15-30cm yellow 10YR 7/6 silty sand subsoil
CRS 043	Neg	45	0-20cm brown 10YR 5/3 silty sand, 20-45cm yellow 10YR 7/6 silty sand subsoil
CRS 044	Neg	40	0-20cm brown 10YR 5/3 silty sand, 20-40cm yellow 10YR 7/6 silty sand subsoil
CRS 045	Neg	35	0-15cm brown 10YR 5/3 silty sand, 15-35cm yellow 10YR 7/6 silty sand subsoil

Appendix F – Phase 1 Environmental Site Assessment

PHASE I ENVIRONMENTAL SITE ASSESSMENT

of

20.0 +/- ACRES LOCATED IN THE SOUTHWEST QUADRANT OF I-10/I-110, D'IBERVILLE, MS IN PARTS OF SECTION 8, 9, TOWNSHIP 7 SOUTH, RANGE 9 WEST, HARRISON COUNTY, MS

FOR

RAMCO DEVELOPMENT, LLC
1101 AUTOMALL PARKWAY
D'IBERVILLE, MISSISSIPPI 39540

PREPARED BY

MORAN ENGINEERING, PLLC
ENGINEERS-PLANNERS-SURVEYORS-ENVIRONMENTAL
249 BEAUVOIR ROAD
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PHONE (228) 388-1950
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October, 2006

EXECUTIVE SUMMARY

A Phase I Environmental Site Assessment of the Subject 20.0 +/-acres of property located in the southwest quadrant of the intersection of I-10 and I-110, D'Iberville, MS, was undertaken to determine, to the extent feasible, the likelihood of an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into a structure on the property or into ground, groundwater or surface of the property. The assessment was performed at the request of RAMCO Development, LLC. The assessment revealed the following:

- Based on state, federal and local databases which were researched by Environmental Data Resources, Inc., there is one (1) leaking underground storage tank, (LUST site), and one (1) site with an underground storage tank (USTs) found within ASTM search distances of the subject site.

- There were no oil sheen nor any unusually stained soils or stressed vegetation observed during the site visit at this subject property, at the time this property was inspected by the inspection personnel of Moran Engineering, P.L.L.C.

- Past ownership's of the subject property revealed that there is no apparent past or pending conditions which appear to impose an environmental threat to the subject property.

- Review of historical aerial topographic maps of the subject site and surrounding properties showed no evidence of past land uses which could have environmentally threatened the subject property.

- The site walkover revealed the existence of isolated dumping, including two (2) automobile tires, however, close observation of these area did not reveal any stained soil or petroleum product, or other environmentally harmful substances.

Based on the information collected during the period of study and the review of both past and present uses of the subject property, Moran Engineering, P.L.L.C. has determined that the environmental conditions at the subject property appear to represent a **LOW RISK** at present time provided that a minimal amount of remedial action is undertaken to remove and properly dispose of the items previously mentioned.

Respectfully submitted,

MORAN ENGINEERING, P.L.L.C.

Terry Moran, Jr., P.E.
Principal Engineer/Senior Environmental Engineer

TABLE OF CONTENTS

COMMON REGULATORY AND TECHNICAL ACRONYMS

ACBM	Asbestos Containing Building Materials
AHERA	Asbestos Hazard Emergency Response Ace
AST	Above Ground Storage Tank
ASTM	American Society for Testing and Materials
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability and Information System
DOT	Department of Transportation
DUS	Delegated Underwriting Service
EPA	Environmental Protection Agency
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
LPST	Leaking Petroleum Storage Tank
LRST	Leaking Registered Storage Tank
LUST	Leaking Underground Storage Tank
NPL	National Priority List
O & M	Operations and Maintenance Program
PCB	Polychlorinated Biphenyl
PLM	Polarized Light Microscopy
PST	Petroleum Storage Tank
RCRA	Resource Conservation Recovery Act
RCRIS	Resource Conservation Recovery Information System
RST	Registered Storage Tank
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UST	Underground Storage Tank
ALTA	American Land and Title Association

PHASE I ENVIRONMENTAL SITE ASSESSMENT OF THE 20.0 +/-ACRES LOCATED AT SOUTHWEST QUADRANT OF I-10/I-110, SECTIONS 8, 9, TOWNSHIP 7 SOUTH, RANGE 9 WEST, HARRISON COUNTY, MISSISSIPPI

1.0 INTRODUCTION

The following report summarizes the results of a Phase I Environmental Site Assessment (ESA) of a subject 20.0 +/- acres of property located within the city limits of D'Iberville, MS. The assessment was conducted by Moran Engineering, P.L.L.C., Biloxi, Mississippi as requested by the corporation known as RAMCO Development, LLC.

Moran Engineering, P.L.L.C. has prepared this report as its instrument of service which includes limited research, a review of specified and reasonably ascertainable listings and a site reconnaissance to identify "recognized environmental conditions"in general accordance with the American Society for Testing and Materials (ASTM) Standard E1527. Moran Engineering, P.L.L.C. ESA was performed in accordance with generally accepted practices of the profession undertaken in similar studies at the same time and in the same geographical area, and Moran Engineering, P.L.L.C. observed that degree of care and professionalism generally practiced by the profession under similar circumstances and conditions.

This study and report has been prepared on behalf of and for the exclusive use of the entitled corporation known as RAMCO Development, LLC and its assigns, solely for its use and reliance in the environmental assessment of this site. With the consent of RAMCO Development, LLC , Moran Engineering, P.L.L.C. may be available to contract with other parties to develop findings and opinions related specifically to such other parties' unique risk management concerns related the subject property.

1.01 PURPOSE

The purpose of the Phase I - ESA is to determine, to the extent feasible, recognized environmental conditions associated with the property being investigated. The site assessment was performed in accordance with the "Standard Practice for Environmental Site Assessment Phase I Environmental Assessment Process, American
Society for Testing and Materials E1527 and with the intent of complying with commonly accepted practices necessary to conduct "all pertinent inquiry into the previous ownership and uses of the property" under CERCLA/SARA (42 USC 9601) (35) (B).

Moran Engineering, P.L.L.C.
Phone 228-388-1950
Fax 228-388-1971

This ESA did not include any inquiry with respect to methane, formaldehyde, endangered species, wetlands, subsurface investigation activities or other services or potential conditions or features not specifically identified and discussed herein. In those instances where additional services or service enhancements are included in the report as requested or authorized by the client, specific limitations attendant to those services are presented in the text of the report.

The findings and opinions conveyed in this report are based upon information obtained at a specific date from a variety of sources listed herein, and which Moran Engineering, P.L.L.C. believes are reliable. Nevertheless, Moran Engineering, P.L.L.C. cannot and does not warrant the authenticity or reliability of the information sources such as databases.

This report is not a comprehensive site characterization or regulatory compliance audit. The opinions presented in this report are based upon findings derived from a site visit, and a review of specified records and sources. Specifically, Moran Engineering, P.L.L.C. does not and cannot represent that the target property contains no hazardous or toxic materials, products, or other latent conditions beyond that observed by Moran Engineering, P.L.L.C. during its assessment. Additionally, the services herein shall in no way be constructed, designed or intended to be relied upon as legal interpretation or advice.

1.20 SCOPE OF SERVICES

In accordance with the notice to proceed from RAMCO Development, LLC. Moran Engineering, P.L.L.C. performed site walk-over observations, noted uses of adjoining properties, interviewed personnel and conducted a search of readily available historical and regulatory records. More specifically, the scope of services included the following:

Geological Information-A review was made of available published geological and groundwater information found in the Soil Conservation Service and Geological Survey of Mississippi for the site vicinity.

Historical Information Review-Courthouse deed research, review of historical aerial topographic maps, and atlas maps were also evaluated for onsite, adjacent, and up-gradient land use.

Regulatory Records Review-Federal, state and local regulatory agency records including but not necessarily limited to the National Priorities List (NPL), the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), Resource Conservation and Recovery Act Information System (RCRIS), Emergency Response Notifications System (ERNS), Mississippi registered Underground Storage Tanks (UST) and Leaking Underground Storage Tanks (LUST), Mississippi Solid Waste Facilities/Landfill Sites (SWF/LS) were evaluated for on-site, adjoining property, and gradient land use and regulatory compliance.

Site Reconnaissance-Visual observations of the site and adjoining properties were performed in order to detect any past and present physical and topographic features; the presence of gaseous odors, toxic material, oil sheens, and potential surface entry into the subsurface. Also included in the site visit, was the observation for any indications of leaks, spills or disposal indicated by surface run-off, soil and pavement conditions and vegetation conditions.

Appendix A contains a vicinity map and site plan of the subject property. Appendix B contains photographs of the subject site and adjacent properties.

2.0 SITE INFORMATION

The site information presented in this section of the report describes the existing site, its boundaries, and general site characteristics. Also included in this section is a brief discussion relating to any existing utilities at this subject property, flood zone data, geological information, and a brief discussion of the past ownership of the subject property.

2.1 GENERAL SITE CHARACTERISTICS

In general terms the target property is an isolated, undeveloped tract of land surrounded by development on all sides. The property abuts a single family subdivision along the south property line and I-10 right of way runs along the north property line, I-I10 along the eastern perimeter and state Highway 67 runs along the western margin.

The target site is undeveloped and varies between being thickly wooded in areas to being partially wooded. The property is further characterized as having a drainage ditch that runs through the property in the eastern one-third area. The

drainage ditch drains to the north and under U. S. Interstate Highway I-10. The shape of the property is similar to that of a half circle, for a complete view of the property this report includes a boundary survey drawing which can be found in Appendix A.

2.2 SITE UTILITIES

The subject site has all the typical utilities associated with a residential development. Below is a listing of utility improvements observed at or near the subject location:

1. Water and Sewer-service from City of D'Iberville
2. Electrical-service from Mississippi Power
3. Telephone-service from Bell South
4. Natural Gas-Reliant Energy-Entex
5. Trash-Waste Management, Inc.
6. Cable TV-Cable One

2.3 GEOLOGY

The soil survey map from the United States Department of Agriculture, Soil Conservation Service, for Harrison County, Mississippi was referenced to obtain information to the existing types of soil found at the subject site. Based on the review of the published reference source, the following types of soils are known to exist at this site:

SOIL TYPE	LOCATION
Latonia loamy sand, (Lt.)	Western two-thirds portion
Harleston fine sandy loam (HIA)	Eastern third portion
Plummer loamy sand (Pm)	Western area

A brief description of these soils are depicted as follows:

The Latonia soil series is a well drained soil on low ridges and in upland regions. This soil type has a permeability rated as moderate, and an available water capacity which is rated medium. The surface water runoff is rated slow.

The construction of roads and streets, in Latonia soils has been rated as having only slight limitations, and has a moderate limitation for commercial buildings and light industries.

The Harleston fine sandy loam is a moderately well drained soil on ridgetops, around heads of drainageways, and on side slopes. This soil is strongly acid or very strongly acid. Permeability is moderate, and available water capacity is medium. The runoff is slow.

This soil is rated as being moderate for supporting traffic on local roads and streets, also it has been rated as having a medium bearing capacity, due to wetness, for support of commercial buildings and light industries.

There is apparent drainage or small ditches that traverses the site in a north-south direction located in the western area of the target site. The soil survey has mapped this area as being the Plummer loamy sand (Pm).

The Plummer loamy sand consist of poorly drained soils that have a thick surface layer over loamy materials. This soil is poorly drained soil on wet flats and in drainageways. Slopes are 0 to 2 percent. The available water capacity is low, and the surface runoff is slow.

The soil survey has rated the Plummer loamy sand as being severely limited, due to wetness and flooding, for support of commercial buildings and local roads and streets.

2.4 SURFACE WATER DRAINAGE/FLOOD ZONES

The USGS and the Harrison County Base Map indicate elevations of the target site vary between 30 to 15 feet above mean sea level. The subject property in general slopes towards Interstate I-10. For groundwater flow information consult the Goecheck Version 2.1 Summary of the EDR-Radius Map Report, found in Appendix C.

According to the Federal Insurance Administration, Official Flood Hazard Map, Community-Panel Number 285255 0205E, Revised 8/4/88, all of the target site is located in Flood Zone designation C. Flood Zone C is defined as areas which have minimal flooding.

2.5 HISTORY

Extensive court house research was conducted by Moran Engineering, P.L.L.C. in the preparation of the ALTA/ACSM Land Title Survey of the subject property. Accordingly, Moran Engineering, P.L.L.C. court house research determined that

the land use dating back to 1940 and earlier for the subject property was for agricultural purposes, or the land was undeveloped. There was no indication of industrial activity associated with the site constituting the subject 20.0 +/- acres target site.

3.0 FEDERAL, STATE, AND LOCAL RECORDS REVIEW

The necessity of the records review is to obtain and review public records that may be useful in determining any recognized environmental conditions on the property or within an appropriate "Search Distance" of the property(s). For the purposes of this report, the term "Search Distance" shall be the recommended "Search Distance" Specified by ASTM 1527 and shall be measured from the nearest property line. To accomplish this, and EDR Radius Map Report of existing environmental records pertaining to activities within the same zip code as the site being assessed was requested from Environmental Data Resources, Inc., of Southport, Connecticut. A copy of this report is shown in Appendix C.

3.1 NATIONAL PRIORITIES LIST REVIEW (SEARCH DISTANCE 1.0 MILE)

A review was made of the USEPA National Priorities List (NPL), a negative finding was found according to the records search conducted by Environmental Data Resources, Inc.

3.2 CERCLIS REVIEW (SEARCH DISTANCE 0.5 MILE)

A review was made of the U.S. Environmental Protection Agency's comprehensive Environmental Response, Compensation, and Liabilities Act (CERCLA) Information System, no sites of which were found within the search distance according to records searched by Environmental Data Resources, Inc.

3.3 RCRA/RCRIS-TSD FACILITIES LIST REVIEW (SEARCH DISTANCE 1.0 MILE)

A review of Resource Conservation and Recovery Act (RCRA), Resource Conservation and Recovery Information system (RCRIS) for sites that treat, store, and/or dispose of hazardous waste was conducted, no sites of which were located within the search distance.

3.4 ERNS LIST REVIEW (SEARCH DISTANCE SUBJECT PROPERTY AND ADJOINING PROPERTY)

A review of the Emergency Response Notification System (ERNS) records that pertain to reported releases of oil and hazardous substances was conducted and none were found within the search distance.

3.5 SWF/LS LIST REVIEW (SEARCH DISTANCE 0.5 MILE)

A review of the state solid waste facilities and landfills (SWF/LS) records was conducted and none were found within the search distance.

3.6 STATE UNCONTROLLED SITE LIST REVIEW (SEARCH DISTANCE 1.0 MILE)

The Department of Environmental Quality has on record a list of Uncontrolled Sites that are under investigation. The Uncontrolled Site List is a list of properties where existing data indicates a potential adverse impact to human health and the
environment. In many cases, these sites are listed on the CERLCA Data Base List and are being evaluated for NPL Listing. A review of the state uncontrolled site list was conducted and none were reported within the search distance.

3.7 LUST LIST REVIEW (SEARCH DISTANCE 0.5 MILE)

In accordance with the Mississippi Underground Storage Tank Act of 1988, and EPA regulations, the Office of Pollution Control maintains a list of Leaking Underground Storage Tanks (LUST). One (1) LUST site was found within the search distance from the subject property. The Eagle Mart AMOCO #16, 4008 Popps Ferry Road, D'Iberville, Ms. 39532 had a leaking underground storage tank release on or about October 1, 1996.

3.8 UST LIST REVIEW (SEARCH DISTANCE 0.25 MILE)

The Office of Pollution Control also maintains a list of registered Underground Storage Tanks (UST). A review of this list was conducted, the subject property was found to be within the search distance of one (1) reported site with underground storage tanks. A complete listing of underground storage tanks in the area of the subject site can be found in Appendix C.

4.0 SITE RECONNAISSANCE

A site walkover by Moran Engineering, P.L.L.C. was made on October 12, 2006. During the site reconnaissance photographs of the subject property were taken for documentative purposes, also uses of the adjacent properties were noted as well as any noteworthy condition documented. The completed transaction screen questionnaire which was completed by inspector personnel can be found in Appendix D.

4.1 GENERAL SITE CONDITIONS

Walk-over observations of the target site revealed that the property in general was **"free"** of debris or possible environmental contamination. There were a few areas that showed signs of past dumping, however, close inspection of these areas showed no evidence of stained soils or petroleum product or other potentially environmentally harmful conditions. In general the site is forested with tall pine, which varies from being densely forested to areas that are open meadow.

4.2 BUILDINGS

The site contains no structures or man made buildings.

4.3 PETROLEUM PRODUCT STORAGE

No petroleum is stored or observed on target site.

4.4 OTHER CONDITIONS

This section left blank intentionally.

4.5 USES OF ADJOINING PROPERTY

DIRECTION FROM PROPERTY	GENERAL USAGE
North	I-10 Right of Way
West	Hwy 67 Right of Way
East	I-110 Right of Way
South	Subdivision

5.0 FINDINGS AND CONCLUSIONS

Moran Engineering, P.L.L.C has performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Standard E 1527. This assessment based on site reconnaissance, interviews conducted, and based on records which have been searched, recommend that the subject site does not warrant further investigation.

6.0 LIMITATIONS

This report and its findings were developed in accordance with generally accepted professional principles, and as outlined in the Standard Practice for Environmental Site Assessments, Phase I Environmental Site Assessment Process (ASTM E 1527).

This Phase I Environmental Site Assessment did not include sampling. These conclusions are solely based on the evidence of the records that were searched and in no way qualify or quantify the extent of any hazardous materials or toxic substances that may be detected via further sampling and analysis. This reports accuracy is limited also by the accuracy of the testimony given of those questioned in the performance of this assessment.

7.0 REFERENCES AND SOURCES OF INFORMATION

The following is a list of references and public records used in preparing this Phase I Environmental Site Assessment.

7.1 ENVIRONMENTAL SOURCES

EPA National Priorities List
EPA CERCLIS Data Base
EPA RCRA Generators List
EPR RCA/TSO Facilities
EPA ERNS List
DEQ Uncontrolled Sites List
DEQ LUST List

Finding of No Significant Impact for the September 2010 Amendment to Center for Marine Education and Research - Ocean Expo Complex: Supplement to the March 2005 Environmental Assessment

National Marine Fisheries Service

Proposed Action

This supplemental environmental assessment (EA) identifies, describes, and evaluates potential impacts to the environment that are associated with the proposed construction of Ocean Expo, an education and conservation center proposed for D'Iberville, Mississippi (MS). The Institute for Marine Mammal Studies (IMMS) of Gulfport, MS, a 501 (C) (3) non-profit organization, is proposing Ocean Expo as a state-of-the-art aquarium and one-of-a-kind learning center that will provide both students and the general public an opportunity to learn about nature and marine mammals.

The IMMS obtained approval under award number NA03NMF4690390 for the Center for Marine Education and Research with FY03 funding of $2,423,000, with an FY04 supplement of $2,718,359, for a total of $5,141,359. In March 2005, National Oceanic and Atmospheric Administration (NOAA) approved an EA for the Center for Marine Education and Research which did not address any construction sites within the boundaries of the City of D'Iberville. In February 2009, the Center for Marine Education and Research in Gulfport was completed.

IMMS also obtained approval under award number NA05NMF4691158 for an approximately 9,000 square (sq) feet (ft) complex (Ocean Expo Complex) as part of the Center for Marine Education and Research. In 2006, Award NA05NMF4691158 was amended to add approximately 8,000 sq ft to the Ocean Expo complex for a new total of approximately 17,000 sq ft. Hurricane Katrina unexpectedly prevented the construction of the complex. The original site, located at Westside Park, became unusable after Hurricane Katrina because of subsequent building costs associated with the site location in the velocity zone of the 100-year floodplain. IMMS has since found several different Ocean Expo sites which are described in the document.
In May 2009, IMMS requested, and NOAA approved, a no-cost award period extension until November 30, 2011. All of the construction will be completed using the federal funding received through 2009 under award number NA05NMF4691158.

IMMS identified four alternatives as potentially suitable sites for construction of Ocean Expo. The four sites were fully evaluated to determine the most practicable alternative. The primary criteria for evaluating the alternatives were developed based upon the project purpose and need, as well as other land use and environmental factors important in projects of this nature. The analysis revealed that Alternative Sites 2, 3, and 4 do not meet all of the proposed site evaluation criteria as well as the site of the proposed action (Alternative 1). Of the four alternative sites, Alternative Site 1 (D'Iberville) best meets the purpose and need criteria, as well as environmental and land use criteria. The site has high visibility and traffic access, low flooding potential and insurance costs, minimal

environmental impacts, and is in a dynamic and growing area of D'Iberville. The City of D'Iberville has issued IMMS a 99-year, renewable lease for the site.

The (Alternative 1) 6.5-acre Ocean Expo project site is located in Harrison County, MS, within the boundaries of the City of D'Iberville. The site is located south of Interstate 10 and west of Interstate 110. The components of Ocean Expo would include: aquariums, an aviary, interactive exhibits, multimedia presentations, a marine education center, an auditorium, and an inside (artificial) riverine display tank display. An existing drainage easement would be re-routed, and drainage would be conveyed through two 48-inch culverts. Seawater for exhibit aquariums and holding tanks would be taken from Back Bay, and conveyed through two 6-inch pipelines north to the Ocean Expo site. Return water changed out from exhibit and holding aquariums would be conveyed back toward Back Bay through a 12-inch pipeline, mostly along the same alignment as the water supply lines. The return water would be discharged into Back Bay under the requirements of the National Pollutant Discharge Elimination System (NPDES) permit to be obtained from the Mississippi Department of Environmental Quality (MDEQ). The outfall would be located on the existing trestle supporting the City of D'Iberville wastewater treatment plant outfall line.

The project would fill 0.58 acres of low-quality wetlands associated with an existing drainage easement, and must secure a U.S. Army Corps of Engineers (USACE) Section 404 wetland permit prior to project implementation. Direct wetland impacts would be properly mitigated in accordance with the conditions stipulated in the permit. Compensatory mitigation for wetland impacts would be accomplished through purchase of credits from an approved wetland mitigation bank that serves Harrison County.

Secondary wetland impacts would be avoided using appropriate best management practices (BMPs) during construction, and through implementation of a MDEQ – approved post-construction Stormwater Management Plan. The stormwater plan would be submitted and approved as part of the MDEQ water quality certification for the project.

Supply water removal from Back Bay and discharge of return water will require a NPDES permit from the MDEQ. Prior to and during project implementation, MDEQ water quality certification coverage would be retained under the State's Storm Water Construction General Permit (MSR10) in order to discharge storm water associated with construction activity including clearing, grading, excavating or other land disturbance activity disturbing more than five acres.

National Oceanic and Atmospheric Administration (NOAA) Administrative Order 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality (CEQ) regulations at 40 CFR 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination

with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

1) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat (EFH) as defined under the Magnuson-Stevens Act and identified in Fishery Management Plans (FMPs)?

Response: A number of estuarine and marine habitats have been identified as EFH in the Gulf of Mexico FMPs. The supplemental EA contains an EFH assessment, including an evaluation of project and cumulative effects, the action agency's evaluation of those effects, and any mitigation proposed. The Ocean Expo project would have minor effects on the Back Bay area identified as EFH. Adherence to the NPDES permit limitations for discharge of return water will preclude significant adverse impacts to water column and benthic EFH in Back Bay. Impacts to bay bottom, intertidal marsh, and submerged aquatic vegetation and federally managed species will also be minimized by compliance with the NPDES permit limitations. Those minimal impacts are also addressed elsewhere in the supplemental EA. IMMS considers these impacts to be minimal on an individual project and cumulative effects basis. This assessment was based on informal guidance to the NMFS grants program officer from NOAA Habitat Conservation personnel (personal communication, D. Dale, NOAA Habitat Conservation office, St. Petersburg, FL).

In this regard, the proposed action is not expected to cause substantial damage to the ocean and coastal habitats and/or EFH as defined under the Magnuson-Stevens Act and identified in FMPs.

2) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

Response: Upland habitat in the 6.5-acre project site consists of an overstory of water oak (*Quercus nigra*), red maple, and Chinese tallow, with fewer black cherry (*Prunus serotina*), live oak (*Quercus virginiana*), and sweetgum (*Liquidambar styraciflua*). An understory is mainly wax myrtle (*Myrica cerifera*), ink berry (*Ilex glabra*), and yaupon (*Ilex vomitoria*), with some Chinese privet, large gallberry (*Ilex coriacea*), and persimmon (*Diospyros viginiana*). Dominant herbaceous plants are mainly broom sedge (*Andropogon virginicus*).

A 0.58-acre wetland area associated with the existing drainage easement consists primarily of Chinese tallow (*Triadica sebifera*), sweetbay magnolia (*Magnolia virginiana*), and red maple (*Acer rubrum*), with a Chinese privet (*Ligustrumsinense*) understory. Herbaceous wetland plants include alligator weed (*Alternanthera philoxeroides*), soft rush (*Juncus effusus*), and spike rush (*Elocharis* sp). Past disturbances in the project area include logging activities, clearing, and erosion. Converting that habitat to the proposed use is still not expected to substantially impact biodiversity or ecosystem function of the project area.

3) Can the proposed action reasonably be expected to have a substantial adverse impact on public health or safety?

Response: Construction will be conducted using practices that will not cause significant adverse impacts. Construction-related air emissions would be temporary. Construction-related emissions would cause localized and minor alterations to air quality, due to exhaust from diesel- and gasoline-powered equipment and dust. Construction activities would produce noise levels similar to the 85dB level at 100 feet generated by typical construction activities, which could affect nearby sensitive noise receptors, such as residents to the south of the project site.

Prior to and during project implementation, MDEQ water quality certification coverage would be retained under the State's Storm Water Construction General Permit (MSR10) to discharge storm water associated with construction activity including clearing, grading, excavating or other land disturbance activity disturbing more than 5 acres.

Appropriate BMPs will be implemented and maintained during and after construction to avoid negative water quality impacts. BMPs will be properly installed and maintained to prevent the movement of sediment off-site and into adjacent drainage and wetland areas. Fill material and excavation areas will have side slopes of at least 3:1 (horizontal: vertical), and will be immediately seeded, stabilized, and maintained. In the event of any BMP failure, corrective action will be taken immediately.

The research and educational activities of the IMMS will not adversely affect human health because most activity will occur either in a classroom or in a restricted laboratory environment. The educational activities will inform the public of traits of marine mammals, and will have no adverse impact on public health or safety.

4) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species?

In accordance with Section 7 of the Endangered Species Act of 1973, the project area was evaluated for the potential occurrences of federal-listed threatened and endangered species. The U.S. Fish and Wildlife Service's (USFWS) Mississippi Ecological Services website was utilized as a reference on the current listing for Harrison County, which includes the endangered (E) and threatened (T) species listed below. Additional designations are as follows: (C) indicates Candidate, (CH) indicates that critical habitat is designated.

T - Louisiana black bear *Ursus americanus luteolus*
TCH- Gulf sturgeon *Acipenser oxyrhynchus desotoi*
TCH- Piping Plover *Charadrius melodus*
T - Gopher tortoise *Gopherus polyphemus*
T - Green turtle *Chelonia mydas*
T - Loggerhead turtle *Caretta caretta*
E - Kemp's ridley *Lepidochelys kempii*

E- Mississippi gopher frog *Rana capito sevosa*
E - Louisiana quillwort *Isoetes louisianensis*
E - Alabama red-bellied turtle *Pseudemys alabamensis*
E - Leatherback turtle *Dermochelys comacea*
E - West Indian manatee *Trichechus manatus*
E - Red-cockaded woodpecker *Picoides borealis*
C - Black pine snake *Pituophis melanoleucus* spp. *lodingi*

Vittor & Associates inspected the proposed project site and adjacent areas for the presence of threatened or endangered species. Pedestrian surveys of the Ocean Expo complex site were performed on April 26, 2010. Target species for the site survey were selected based on current knowledge of individual species' distributions and their specific habitat requirements. Many of the listed species would not be affected by the proposed project, including sea turtles and Gulf sturgeon. Critical habitat for the threatened Gulf sturgeon was designated in 2003 in Mississippi Sound, but critical habitat does not extend to the Back Bay of Biloxi, where supply intake and outfall pipelines would be located. The nearest critical habitat designated for piping plover is at Deer Island, located in Mississippi Sound. Therefore, critical habitat would not be impacted, since the activities are not located in, and would not affect, Mississippi Sound (including Deer Island).

Species selected as targets for the site surveys included gopher tortoise, red-cockaded woodpecker, Louisiana quillwort, black pine snake, and Mississippi gopher frog. No federal-protected species were observed on or near the project site. No individuals of quillwort or suitable habitat for quillwort were encountered. Suitable habitat for gopher tortoise does not exist within or adjacent to the project site, and no tortoises or their burrows were observed during the survey. As previously indicated, no piping plover habitat occurs at the site. No trees suitable for red-cockaded woodpecker were found, and its foraging habitat does not exist on the project site. No indigo snake, black pine snake, or gopher frog were observed during the survey. Suitable black bear habitat does not exist within or adjacent to the project site.

The pipeline alignments between Back Bay and the Ocean Expo complex site follow existing utility easements, mostly along road rights-of-way. These disturbed and maintained easements and right of ways (ROWs) do not contain habitat for any ESA-listed species.

The American bald eagle (*Haliaeetus leucocephalus*) was delisted in 2007 but nesting eagles and their nest trees are still protected under the Bald and Golden Eagle Protection Act. No bald eagle potential nests, however, were observed during site surveys or during a site visit on August 19, 2010, with NOAA's grant program officer.

The USFWS was contacted by letter of June 17, 2010, regarding this project. The USFWS responded by letter dated June 28, 2010, with the determination that no federally listed species occur on the proposed Ocean Expo complex site at Interstate 10.

The MS Department of Fisheries, Wildlife, and Parks, on July 13, 2010, advised the MS Department Of Marine Resources (MDMR) that the project likely poses no threat to listed species or their habitat if BMPs are followed.

Based on the above information, the action is not expected to adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act (ESA) of 1973.

5) Are significant social or economic impacts interrelated with natural or physical environmental effects?

Response: The March 2005 environmental assessment describes the socioeconomic resources of the project area and provides demographic data for Harrison County and the City of Gulfport. The revisions to the construction do not change the applicability of that data. The new project will change the visual characteristic of the project area. However, the managed area where the project will be constructed has no human residents such that the changes are not expected to be significant. The construction project will generate additional, short-term employment that will provide socioeconomic benefits. The supplemental EA analyzed socioeconomic and demographic data for the project area to determine if disproportionately high or adverse human health or environmental effects on minority or low-income communities would occur within the project site, as a result of the proposed project. The data results indicate that Ocean Expo will cause no disproportionately high or adverse human health or environmental effects on minority or low-income communities within the project site.

Based on this information, the proposed action will provide socioeconomic benefits without significant, adverse social or economic impacts.

6) Are the effects on the quality of the human environment likely to be highly controversial?

Response: IMMS has completed the Center for Marine Education and Research in Gulfport, MS. That project did not generate controversy. The new construction is similar to that other project. The new Ocean Expo site is not expected to be substantively different in effects on the human environment, compared to the construction analyzed in the March 2005 environmental assessment. The Ocean Expo construction methods will be highly similar to those methods used for the facility in Gulfport. Therefore, controversy is not expected as a result of the construction of Ocean Expo in D'Iberville.

7) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, EFH, or ecologically critical areas?

Response: Section 106 of the National Historic Preservation Act (NHPA) of 1966, 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 (ACHP) an opportunity to comment on Federal Projects that will have an effect on historic properties 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 (NRHP). If adverse effects on historic, archaeological, or cultural properties are identified, then agencies must attempt to avoid, minimize, or mitigate these impacts to resources considered important in our nation's history. Federal emergency response actions operate under a programmatic agreement with State Historic Preservation Officers to take into account historic properties when planning and conducting emergency response actions. The Mississippi Department of Archives and History (MDAH) collects, preserves, and provides access to the archival resources of the state, and oversees statewide programs for historic preservation.

A cultural resource assessment (CRA) of the Ocean Expo complex site was conducted in 2010. This assessment included a review of the archaeological literature (state site files), historic literature and records and an on-site survey with subsurface testing.

The Mississippi State Site File indicates that there are four previously recorded archaeological sites within one mile of the project area. None of these sites would be affected by the proposed project. Prior to the cultural resources assessment, the list of Mississippi Landmarks and the National Register of Historic Places was reviewed. No previously identified structures or sites that are currently listed as Mississippi Landmarks or listed on the National Register of Historic Places are located within the research area or within a one-mile radius of the proposed project area.

An on-site pedestrian survey was conducted of the entire project site. Shovel tests were excavated at standard intervals (30 and 60 meters) when possible and at non-standard intervals as needed. A total of 45 tests were excavated in areas that were not wetlands. The tests measured approximately 30 centimeters in diameter and were excavated to sterile subsoil. Wetlands were visually inspected. However, no shovel tests were excavated in the wetland areas due to the extreme saturation of the soil, which did not typically allow for prehistoric human occupation. No historic features were observed in the wetlands. No artifacts (other than modern trash), historic structures, or archaeological sites were found on the property.

The pipeline alignments between Back Bay and the Ocean Expo complex site follow existing utility easements, mostly along road rights-of-way. These disturbed and maintained easements were reviewed and found to not contain significant cultural resources.

The MDAH was contacted by letter of May 19, 2010, regarding this project, and was provided a copy of the CRA report for the Ocean Expo complex site. The MDAH responded by email dated May 27, 2010, concurring with the report determination that no cultural resources are likely to be affected by the proposed project.

The designated Tribal Historic Preservation Officer (THPO) must also be consulted, due to the potential for projects occurring on, or affecting historic properties on, their tribal lands. The THPO was contacted by letter (via email) of June 1, 2010, regarding this project. To date, no response has been received. Therefore, concurrence is assumed.

The project would fill 0.58 acres of low-quality wetlands associated with an existing drainage easement, and must secure a USACE Section 404 wetland permit and MDEQ Section 401 water quality certification prior to project implementation. Direct wetland impacts would be properly mitigated in accordance with the conditions stipulated in the 404 and 401 permits. Compensatory mitigation for wetland impacts would be accomplished through purchase of credits from an approved wetland mitigation bank that serves Harrison County. Proof of purchase of mitigation bank credits from the approved mitigation bank would be submitted to the USACE and MDMR prior to commencement of construction. The supplemental EA lists the anticipated Section 401 permit conditions that will be followed.

Secondary wetland impacts would be avoided using appropriate BMPs during construction, and through implementation of a MDEQ – approved post-construction Stormwater Management Plan. The stormwater plan would be submitted and approved as part of the MDEQ Section 401 water quality certification for the project.

The pipeline alignments between Back Bay and the Ocean Expo complex site follow existing utility easements, mostly along road rights-of-way. These disturbed and maintained easements and ROWs do not contain wetlands, except for a small area along the proposed terminus of the 12-inch return water line. The return water pipeline would be constructed on the existing wastewater treatment plant outfall line trestle, and no wetland impacts would occur with pipeline construction.

Based on the above information, the action is not expected to adversely affect farmland, park land, prime farmlands, wetlands, wild and scenic rivers, EFH, or ecologically critical areas. Therefore, no substantial impacts to unique areas are expected.

8) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

Response: IMMS's previous construction has not adversely affected the human environment and has not caused uncertainty or high risks. During the development of the project, care will be taken to minimize impacts to the overall character of the site. Clearing will be minimized, and IMMS will use vegetative buffers and native vegetative screening where possible. The proposed construction methods are very similar to those used in the construction completed by IMMS in Gulfport. Following construction, IMMS will use standardized educational and research protocols at Ocean Expo that are being successfully used at the existing research facility in Gulfport. In this regard, the facility is not expected to cause uncertainty or unknown or unique risks.

9) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

Response: The project is a relatively small area. The adverse impacts will still be short-term and minor, while the more significant cumulative impacts will still be beneficial in the long term. No other construction projects are expected inside the project area in the near future. No major construction projects are ongoing (or are expected in the near future) in the immediate vicinity of the project area. In that regard, no other activities need be combined (additively or synergistically) with the construction activities for analysis. Therefore, the effect on the project area's resources is limited to the construction activities detailed herein.

10) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

Response: A Cultural Resource Assessment (CRA) of the Ocean Expo complex site was conducted in 2010. This assessment included a review of the archaeological literature (state site files), historic literature and records and an on-site survey with subsurface testing.

The Mississippi State Site File indicates that there are four previously recorded archaeological sites within one mile of the project area. None of these sites would be affected by the proposed project. Prior to the cultural resources assessment, the list of Mississippi Landmarks and the National Register of Historic Places was reviewed. No previously identified structures or sites that are currently listed as Mississippi Landmarks or listed on the National Register of Historic Places are located within the research area or within a one-mile radius of the proposed project area.

An on-site pedestrian survey was conducted of the entire project site. No artifacts (other than modern trash), historic structures, or archaeological sites were found on the property.

The pipeline alignments between Back Bay and the Ocean Expo complex site follow existing utility easements, mostly along road rights-of-way. These disturbed and maintained easements were reviewed and found to not contain significant cultural resources.

The MDAH was contacted regarding this project, and was provided a copy of the CRA report for the Ocean Expo complex site. The MDAH responded by email dated May 27, 2010, concurring with the report determination that no cultural resources are likely to be affected by the proposed project.

The THPO was contacted regarding this project. To date, no response has been received. Therefore, concurrence is assumed.

11) Can the proposed action reasonably be expected to result in the introduction or spread of a non-indigenous species?

Response: Non-indigenous plants currently exist on the project site and in the surrounding area; however, construction of the facility will remove the existing invasive vegetation from the site. Maintenance of disturbed areas after construction will prevent the spread of invasive plants. The project (including the FY06-funded and FY09-funded construction) will convert an area of fairly low diversity to a building facility and will not cause the introduction or spread of such (non-indigenous) species.

12) Is the proposed action likely to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

Response: The site is located within the Gulfport-Biloxi urbanized area designated by the U.S. Census Bureau. The Ocean Expo site will not establish a precedent for future actions with significant effects and does not represent a decision in principle about a future consideration, based on the following information. Federal funding for this facility has already been approved. Since IMMS has already constructed the Center for Marine Education and Research, construction of the similar Ocean Expo does not create a new precedent. For example, IMMS has a current NPDES permit for water supply removal and discharge at its existing research facility, for which annual monitoring has determined no significant effects. Based on the information provided herein and in the supplemental EA, the Ocean Expo project is not expected to set new precedents or represent a new decision.

13) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?

Response: The construction and building criteria will be built in compliance with all applicable laws. 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. The supplemental EA lists the expected permits conditions that will be followed. Based on the information contained in the supplemental EA, the action does not threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

14) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

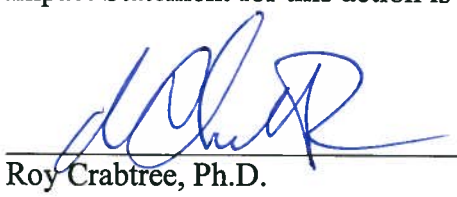
Response: This construction project does not involve fishing activities and therefore has no target (fish) species or non-target (fish) species. Therefore, the proposed action is reasonably not expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species.

15) Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.

Response: As indicated earlier in this document, the project, including the selection of the Ocean Expo site in D'Iberville, is not expected to have adverse impacts. Environmental consequences of the project were evaluated. That evaluation indicated no significant adverse impacts to cultural resources, species or habitats, water resources and quality, floodplains, air quality, utilities or services, traffic, or environmental justice. Since the primary purpose of the proposed action is to provide a facility to be used for marine mammal research, the new facilities will provide some benefits to understanding and management of those resources.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Supplemental Environmental Assessment prepared for the Amendment to Center for Marine Education and Research - Ocean Expo Complex, it is hereby determined that the Amendment to Center for Marine Education and Research - Ocean Expo Complex will not significantly impact the quality of the human environment as described above and in the Supplemental Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement for this action is not necessary.



Roy Crabtree, Ph.D.
Regional Administrator
Southeast Region
National Marine Fisheries Service

9/22/2010
Date