Appendix H

Public and Agency Coordination

Appendix H1

Agency Coordination

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701
(727) 824-5317; Fax 824-5300
http://sero.nmfs.noaa.gov

May 11, 2010 F/SER46:MT

Colonel Byron G. Jorns
District Engineer, Mobile District
Regulatory Division
Department of the Army, Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Colonel Jorns:

NOAA's National Marine Fisheries Service, Southeast Region, Habitat Conservation Division (NMFS) has reviewed public notice number SAM-2009-01768-DMY dated April 16, 2010. The applicant, Mississippi State Port Authority (MSPA), has requested a Department of the Army permit to dredge approximately 332 acres for new channel and harbor expansion and fill 700 acres of open water benthic habitat to construct new port facilities in Mississippi Sound, Harrison County, Mississippi. This proposal includes placing 38,400,000 cubic yards of fill material, removing 17,260,000 cubic yard of dredge material, and completing the fill of 84 acres authorized in a permit issued in 1998. The U.S. Army Corps of Engineers, Mobile District (Corps) has initiated consultation for potential adverse impacts to essential fish habitat (EFH). As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, NMFS provides the following comments and recommendations pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Project Area

Prior to 1991, the port facility occupied 286 acres in Mississippi Sound. In 1991, a 29-acre fill expansion was permitted (MS88-00954-L) for the purpose of accommodating existing and anticipated future container throughput for the next 50 years. In this configuration, the port covered 315 acres and supported break-bulk, bulk, container, commercial fishing, and gaming facilities (MSPA Gulfport Strategic Plan 1994). The permit issued in 1998 (MS96-02828-U) authorized filling of an additional 84 acres and dredging of 15 acres of Mississippi Sound for container and break-bulk handling and storage, and allowed relocation of the small craft harbor channel. The purpose of the 84-acre expansion was to provide rail interface for intermodal customers. This facility has not been constructed but remains a critical component of the 84-acre expansion. Sixty acres of the 84-acre fill are currently under construction and expected to be completed by November 2010. The remaining 24 acres will be filled shortly thereafter. When this area is filled, the MSPA property will occupy a total area of 399 acres of Mississippi Sound, a 26.6 percent increase over the 2005 footprint. The proposal now under consideration will

extend the port facility out into Mississippi Sound an additional 1.5 miles.

Impacts to Essential Fish Habitat
NMFS is concerned that filling an additional 616 acres of estuarine benthic habitat and water column and dredging an additional 332 acres of shallow estuarine bottoms to depths ranging from 32 to 36 feet, with perhaps a 4-foot over dredge allowance, would adversely impact EFH and other NMFS trust resources. The shallow unvegetated areas of Mississippi Sound are productive growth sites for macro- and microphytic algae, benthic diatoms, benthic dinoflagellates, polychaete worms, crustaceans, and mollusks (Livingston 1990). These benthic flora and fauna are important sources of food for a variety of fish and invertebrates that are of commercial, recreational, and ecological importance (Armstrong 1987). These habitats also provide essential forage, cover, spawning, and nursery areas for numerous commercially and recreationally important species (Christmas 1973). In addition to the direct impacts on fishery resources and habitats, on-site monitoring (MSPA Water Quality Monitoring Program 2001) has found that water quality within the small craft harbor and in the berthing area at West Pier is significantly degraded from May through September. Poor water quality conditions further impair the ecological value of project area habitats and their support of benthic and nektonic resources of Mississippi Sound.

Mississippi Sound is designated as EFH for the following federally managed species: red drum; Spanish mackerel; white, brown, and pink shrimp; Gulf stone crab; and several shark species. Categories of EFH that would be impacted by the project include sand and mud substrate and estuarine water column. Preliminary examination of the seasonal patterns of abundance suggests that at least one of the managed species is present in Mississippi Sound at all times of the year. Detailed information on federally managed fisheries and their EFH is provided in the 2005 Generic Amendment to the Fishery Management Plans for the Gulf of Mexico, prepared by the Gulf of Mexico Fishery Management Council (GMFMC). In addition to EFH designated for federally managed species, Mississippi Sound provides nursery and foraging habitats that support both forage and economically important marine fishery species such as black drum, spotted seatrout, southern flounder, gulf menhaden, bluefish, croaker, mullet, and blue crab. These estuarine-dependent organisms serve as prey for other fisheries managed under the Magnuson-Stevens Act by the GMFMC (e.g., mackerels, snappers, and groupers) and highly migratory species managed by NMFS (e.g., billfishes and sharks).

Compensatory mitigation
Within the sequential mitigation process, compensatory mitigation is proposed only after water-dependent projects have undergone an alternatives analysis that results in adequate avoidance and minimization of impacts. Evidence of such an analysis has not been provided to NMFS. As proposed, this project would likely require compensatory mitigation based on the resources present at this location. The public notice describes a conceptual approach for mitigation that would include coastal habitat restoration and enhancement, creation of nearshore reefs, deployment of derelict vessels within existing fish havens, enhancement of oyster reefs, management of coastal preserves, and acquisition of new properties for inclusion in the coastal preserve program.

This conceptual approach may constitute suitable mitigation options for such a project, but a

final determination would be based on the location and amount of acreage restored, protected, acquired or enhanced; likelihood of success, and the adequacy of contingency plans and adaptive management should mitigation measures fail to meet criteria for functionality.

Expanded EFH Consultation
The EFH provisions of the Magnuson-Stevens Act represent an integration of fishery management and habitat conservation by recognizing the dependence of healthy, productive fisheries on the availability of viable and diverse estuarine and marine ecosystems, with the goal of supporting the sustainable harvest of marine fisheries. Therefore, due to the size of the project and the nature and extent of probable direct and indirect impacts to EFH, NMFS requests that an expanded EFH consultation be conducted pursuant to 50 CFR Section 600.920(i).

As part of an expanded EFH consultation, NMFS recommends the Corps prepare an EFH assessment as described at 50 CFR 600.920(e). The EFH assessment must contain a description of the action; an analysis of the potential adverse effects of the action on EFH and the managed species; the federal agency's conclusions regarding the effects of the action on EFH, and proposed mitigation, if applicable. NMFS also recommends for this project the EFH assessment include additional information as appropriate, such as the results of an on-site inspection to evaluate the habitat and the site-specific effects of the project; the views of recognized experts on the habitat or species that may be affected; a review of pertinent literature and related information; an analysis of alternatives to the action, including alternatives that could avoid or minimize adverse effects on EFH.

Aquatic Resources of National Importance
Several of the marine resources identified herein that could be adversely affected by the project are considered to be of national economic importance pursuant to Section 906(e)(1) of the Water Resources Development Act of 1986 and, therefore, are designated as aquatic resources of national importance (ARNI). In accordance with Part IV, Section 3(a) of the Memorandum of Agreement between the Departments of Commerce and Army regarding Section 404(q) of the Clean Water Act, NMFS finds that placing an additional 616 acres of fill material and dredging of approximately 332 acres in Mississippi Sound may result in substantial and unacceptable impacts to ARNI.

Due to the scope of this project, an environmental impact statement (EIS) should be produced to analyze the potential impacts of the project as proposed and to present a set of feasible alternatives. An EIS should evaluate various construction alternatives beyond the 399-acre footprint as well as the no action alternative. Studies should be performed to characterize existing benthic communities within the areas to be dredged and filled, the adjacent areas and those within the existing channel and basin. Such studies would facilitate a comparative assessment of impacts and would assist in determining mitigation needs and options, if appropriate. In addition to habitat loss from the proposed expansion, water quality impacts must be thoroughly assessed. The 1998 permit incorporated mitigation measures to improve water quality in and around the port, but it is uncertain if these measures have been or are now being performed. An analysis of the results of the 1998 mitigation measures should be included in the EIS. A detailed plan addressing mitigation for unavoidable impacts should be provided.

In consideration of the significant direct impacts to estuarine habitats of Mississippi Sound, the probable indirect and cumulative impacts, the lack of information and analysis available at this time, and the need to ensure the conservation of EFH and dependent fishery resources, NMFS provides the following:

EFH Conservation Recommendations

1. The permit for filling 616 acres and excavating 332 acres of estuarine habitat in Mississippi Sound, as currently proposed, shall be denied.

2. Further consideration of any port expansion should require a thorough analysis of less environmentally damaging practicable alternatives and suitable mitigation options accomplished through the preparation of an EIS.

Please be advised the Magnuson-Stevens Act and the regulation to implement the EFH provisions (50 CFR Section 600.920) require the Corps to provide a written response to this letter. That response must be provided within 30 days and at least 10 days prior to final agency action. A preliminary response is acceptable if final action cannot be completed within 30 days. The Corps' final response must include a description of measures to be required to avoid, minimize, mitigate, or offset the adverse impacts of the activity. If the Corps' response is inconsistent with these EFH conservation recommendations, the Corps must provide an explanation of the reasons for not implementing those recommendations.

In addition, the project area lies within the known distribution and critical habitat of a federally listed species under the purview of NMFS. In accordance with the Endangered Species Act of 1973, as amended, the Corps' must review this proposal and determine whether the actions proposed may affect endangered or threatened species. Actions that may affect listed species should be reported to our Protected Resources Division at the letterhead address. If the Corps determines that the proposed activities may adversely affect any listed species, or destroy or adversely modify designated critical habitat, formal consultation must be initiated.

NMFS looks forward to working with the Corps in preparing the EIS and addressing these concerns. Please contact Mark Thompson of our Panama City Office at 904/234-5061 with questions regarding this EFH consultation.

Sincerely,

Miles M. Croom

Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

cc:
F/SER4
F/SER3
F/SER - Keys
cc: email
EPA Atlanta
FWS Jackson
MS DMR Biloxi
MS DEQ Jackson
GMFMC
GSMFC

NMFS - B Letter

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
(727) 824-5317; Fax 824-5300
http://sero.nmfs.noaa.gov

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JUN 03 2010 F/SER46:MT

RECEIVED
JUN 10

Colonel Byron G. Jorns
District Engineer, Mobile District
Regulatory Division
Department of the Army, Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Colonel Jorns:

This letter is in reference to the Department of the Army public notice number SAM-2009-01768-DMY dated April 16, 2010. The applicant, Mississippi State Port Authority (MSPA), has requested a Department of the Army permit to dredge approximately 332 acres for new channel and harbor expansion and fill 700 acres of open water benthic habitat to construct new port facilities in Mississippi Sound, Harrison County, Mississippi.

The NOAA's National Marine Fisheries Service (NMFS) has determined the direct impacts to over 1,000 acres of productive fishery habitat in Mississippi Sound represent significant and unacceptable adverse threats to essential fish habitat and other living marine resources of national economic importance: By letter dated May 11, 2010 (copy enclosed), NMFS recommended Department of the Army authorization not be granted for the project as proposed and an environmental impact statement be prepared for the project. This recommendation is based on the significant direct impacts to essential fish habitat, aquatic resources of national importance, and the supporting food webs of Mississippi Sound, as well as the potential adverse impacts to water quality in Mississippi Sound. NMFS also remains concerned by the lack of detailed information provided thus far to support a thorough project impact analysis and develop a mitigation plan for unavoidable impacts to NMFS trust resources.

Pursuant to Part IV.3(b) of the 1992 Clean Water Act 404(q) Memorandum of Agreement between the Department of Commerce and the Department of the Army, I have reviewed the findings of my staff and determined the proposed work would substantially and unacceptably impact aquatic resources of national importance as well as essential fish habitat and associated living marine resources. I request the Corps of Engineers fully consider the views and recommendations of NMFS in making a final decision concerning authorization of the proposed work. I also encourage continued efforts to resolve this matter at the field level and have requested my staff to continue cooperating in any related effort to this end.

RECEIVED
JUN 10 2010
By

Thank you for your consideration of NMFS' recommendations. Should you have any questions, please contact Mr. Mark Thompson at (850) 234-5061.

Sincerely,

Roy E. Crabtree, Ph.D.
Regional Administrator

Enclosure

cc: F/SER4
F/SER46
GMFMC

LITERATURE CITED

Armstrong, N.E. 1987. The ecology of open-bay bottoms of Texas: a community profile. U.S. Fish Wildl. Serv. Biol. Rep. 85(7.12): 104 p.

Christmas, J.Y. 1973. Cooperative Gulf of Mexico Estuarine Inventory and Study, Mississippi. State of Mississippi, Gulf Coast Research Laboratory, Ocean Springs, MS. 434 p.

Livingston, R.J. 1990. Inshore Marine Habitats In "Ecosystems of Florida" (R.L. Myers and J.J. Ewel, eds.) University Presses of Florida, Gainesville. pp. 549-573.

Mississippi State Port Authority at Gulfport, Strategic Plan. August 26, 1994. Vickerman, Zachary, Miller.

Mississippi State Port Authority Gulfport, Mississippi Annual Report Water Quality Monitoring Program. September 11, 2001. Brown & Mitchell, Inc. 11 p.

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority.

Mississippi Department of Environmental Quality
Attention: Florance Watson
Water Quality Branch Chief
P.O. Box 2261
Jackson, MS 39225

Dear Ms. Watson:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. The EIS will also help the U.S. Department of Housing and Urban Development (HUD) decide whether to provide a total of $570 million in funding for the proposed project under the Port of Gulfport Restoration Program. As such, the Mississippi Development Authority (MDA), acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Mississippi Department of Marine Resources
Attention: Ms. Jennifer Whittmann
Wetlands Bureau Deputy Director
1141 Bayview Avenue
Biloxi, Mississippi 39530

Dear Ms. Whittmann:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority (MDA), acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

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larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

Craig J. Litteken
Chief, Regulatory Division

Enclosures

T/L MS Coastal

CH/RD-C

CH/rd

FILE

Same Letter Sent To:

U.S. Environmental Protection Agency
Attention: Mr. Heinz Mueller
Chief of NEPA Program Office
61 Forsyth Street, SW
Atlanta Georgia 30303

Headquarters, Federal Highway Administration
Attention: Mr. Fred Skaer
Director, Office of Project Development and
Environmental Review
1200 New Jersey Avenue, SE
Washington, DC 20590

Mississippi Department of Environmental Quality
Attention: Ms. Florance Watson
Water Quality Branch Chief
Post Office Box 2261
Jackson, Mississippi 39225

Mississippi Department of Marine Resources
Attention: Ms. Jennifer Whittmann
Wetlands Bureau Deputy Director
1141 Bayview Avenue
Biloxi, Mississippi 39530

U.S. Department of agricultural-Forest Service
Attention: Mr. Joe Carbone
Ecosystem Management Coordination
1400 Independence Ave., SW
Mailstop: 1104
Washington, DC 20250-1104

U.S. Fish and Wildlife Service
Attention: Mr. Paul Necaise
Coastal Projects
6578 Dogwood View Parkway, Suite A
Jackson, Mississippi 32913

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority.

U.S. Environmental Protection Agency
Attention: Heinz Mueller
Chief of NEPA Program Office
61 Forsyth Street, SW
Atlanta GA 30303

Dear Mr. Mueller:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. The EIS will also help the U.S. Department of Housing and Urban Development (HUD) decide whether to provide a total of $570 million in funding for the proposed project under the Port of Gulfport Restoration Program. As such, the Mississippi Development Authority (MDA), acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

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MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority.

Headquarters, Federal Highway Administration
Attention: Fred Skaer
Director, Office of Project Development and
Environmental Review
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Mr. Skaer:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

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Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

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MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority.

U.S. Fish and Wildlife Service
Attention: Paul Necaise
Coastal Projects
6578 Dogwood View Parkway, Suite A
Jackson, MS 32913

Dear Mr. Necaise:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

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The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

National Marine Fisheries Service
Attention: Roy E. Crabtree, Ph.D.
Regional Administrator
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701

Dear Dr. Crabtree:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority (MDA), acting on behalf of HUD, has agreed to be a cooperating agency. Additionally, because of potential impacts to protected marine species and their habitat, this letter is intended to ascertain whether the National Marine Fisheries Service would be interested in participating in the EIS as a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility will be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Please reply at your earliest convenience to indicate whether your agency, or any of its services, bureaus, or offices, has interest in participating as a cooperating agency on this EIS. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

Craig J. Litteken
Chief, Regulatory Division

Enclosures

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DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

National Marine Fisheries Service
Attention: Mr. David L. Keys, CEP
NEPA Coordinator
Southeast Regional Office
261 13th Avenue South
St. Petersburg, Florida 33701

Dear Mr. Keys:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority (MDA), acting on behalf of HUD, has agreed to be a cooperating agency. Additionally, because of potential impacts to protected marine species and their habitat, this letter is intended to ascertain whether the National Marine Fisheries Service would be interested in participating in the EIS as a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility will be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Please reply at your earliest convenience to indicate whether your agency, or any of its services, bureaus, or offices, has interest in participating as a cooperating agency on this EIS. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

Craig J. Litteken
Chief, Regulatory Division

Enclosures

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DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority.

USDA Forest Service
Attention: Joe Carbone
Assistant Director-NEPA
Ecosystem Management Coordination
1400 Independence Ave., SW
Mailstop: 1104
Washington, DC 20250-1104

Dear Mr. Carbone:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. The EIS will also help the U.S. Department of Housing and Urban Development (HUD) decide whether to provide a total of $570 million in funding for the proposed project under the Port of Gulfport Restoration Program. As such, the Mississippi Development Authority (MDA), acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According

to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Governor Bill Anoatubby
The Chickasaw Nation
Post Office Box 1548
Ada, Oklahoma 74821-1548

Dear Governor Anoatubby:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Chairman Earl J. Barbry, Sr.
Tunica-Biloxi Tribe of Louisiana
Post Office Box 1589
Marksville, Louisiana 71351

Dear Chairman Barbry:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Chairman John Berrey
Post Office Box 765
Quapaw, Oklahoma 74363

Dear Chairman Berrey:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Chairman Colley Billie, Miccosukee
Tribe of Indians of Florida
Post Office Box 440021, Tamiami Station
Miami, Florida 33144

Dear Chairman Billie:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Governor George Blanchard
Absentee-Shawnee Tribe of Oklahoma
2025 S. Gordon Cooper Drive
Shawnee, Oklahoma 74801

Dear Governor Blanchard:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

Craig J. Litteken
Chief, Regulatory Division

Enclosures

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DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Mr. Carlos Bullock
Tribal Council Chairman
Alabama-Coushatta Tribe of Texas
571 State Park Road 56
Livingston, Texas 77351

Dear Mr. Bullock:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Mr. Kitcki Carroll, Executive Director
United Southern and Eastern Tribes
711 Stewarts Ferry Pike, Suite 100
Nashville, Tennessee 37214

Dear Mr. Carroll:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
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REPLY TO
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March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Chairman Mitchell Cypress
Seminole Tribe of Florida
6300 Stirling Road
Hollywood, Florida 33024

Dear Chairman Cypress:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Chairman Paul Darden
Chitimacha Tribe of Louisiana
Post Office Box 661
Charenton, Louisiana 70523

Dear Chairman Darden:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

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MOBILE DISTRICT, CORPS OF ENGINEERS
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REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Miko Beasley Denson
Mississippi Band of Choctaw Indians
Post Office Box 6010, Choctaw Branch
Choctaw, Mississippi 39350

Dear Miko Denson:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

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MOBILE DISTRICT, CORPS OF ENGINEERS
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MOBILE, AL 36628-0001

REPLY TO
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March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Principal Chief A.D. Ellis
Muscogee (Creek) Nation
Highway 75 Loop 56
Okmulgee, Oklahoma 74447-0580

Dear Principal Chief Ellis:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Principal Chief Leonard Harjo
Post Office Box 1498
Wewoka, Oklahoma 74884

Dear Principal Chief Harjo:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Principal Chief Michell Hicks
Eastern Band of the Cherokee Nation
Qualla Boundary
Post Office Box 455
Cherokee, North Carolina 28719

Dear Principal Chief Hicks:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Tiger Hobia, Mekko
Kialegee Tribal Town of the
Creek Nation of Oklahoma
Post Office Box 332
Wetumka, Oklahoma 74883

Dear Mekko Hobia:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

Martha Salomon

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority.

Jena Band of Choctaw Indians
Attention: Christine Norris
Chief
P.O. Box 14
Jena, LA 71342

Dear Chief Norris:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. The EIS will also help the U.S. Department of Housing and Urban Development (HUD) decide whether to provide a total of $570 million in funding for the proposed project under the Port of Gulfport Restoration Program. As such, the Mississippi Development Authority (MDA), acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Chief Gregory E. Pyle
Choctaw Nation of Oklahoma
Post Office Box 1210
Durant, Oklahoma 74702-1210

Dear Chief Pyle:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Chief Donald Rodgers
The Catawba Indian Nation
Post Office Box 188
Catawba, South Carolina 29704

Dear Chief Rodgers:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Chairman Buford Rolin
Poarch Band of Creek Indians
5811 Jack Springs Road
Atmore, Alabama 36502-5025

Dear Chairman Rolin:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

George Scott, Mekko
Thlopthlocco Tribal Town
Post Office Box 188
Okemah, Oklahoma 74859

Dear Mekko Scott:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Chairman Kevin Sickey
Coushatta Tribe of Louisiana
Post Office Box 99
Elton, Louisiana 70532

Dear Chairman Sickey:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority.

Cherokee Nation of Oklahoma
Attention: Chadwick Smith
Principal Chief
P.O. Box 948
Tahlequah, OK 74465

Dear Principal Chief Smith:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. The EIS will also help the U.S. Department of Housing and Urban Development (HUD) decide whether to provide a total of $570 million in funding for the proposed project under the Port of Gulfport Restoration Program. As such, the Mississippi Development Authority (MDA), acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Chairman Ron Sparkman
Shawnee Tribe
29 South 69-A Highway
Miami, Oklahoma 74354

Dear Chairman Sparkman:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Tribal Chairman Roger Trudell
425 Frazier Avenue North, Suite 2
Niobrara, Nebraska 68760

Dear Tribal Chairman Trudell:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Chief Glenna J. Wallace
Eastern Shawnee Tribe of Oklahoma
Post Office Box 350
Seneca, Missouri 64865

Dear Chief Wallace:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Chief George G. Wickliffe
United Keetoowah Band of
Cherokee Indians in Oklahoma
Post Office Box 746
Tahlequah, Oklahoma 74465-0746

Dear Chief Wickliffe:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

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larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

March 2, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

Chief Tarpie Yargee
Alabama-Quassarte Tribal Town of
the Creek Nation of Oklahoma
Post Office Box 187
Wetumka, Oklahoma 74883

Dear Chief Yargee:

The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The USACE intends to publish a Notice of Intent in the Federal Register in March 2011.

The USACE intends to prepare the EIS to assist in the decision on a Section 404 Clean Water Act and Section 10 Rivers and Harbors Act permit application for MSPA's proposed project. As such, the Mississippi Development Authority, acting on behalf of HUD, has agreed to be a cooperating agency.

The federally authorized Gulfport Harbor Navigation Project and Port facility is located in the City of Gulfport, Harrison County, Mississippi (figure enclosed). The proposed project is approximately 80 miles west of Mobile, Alabama and 80 miles east of New Orleans, Louisiana. The Port of Gulfport encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway and approximately 7 miles south of Interstate 10. The MSPA operates the federally authorized Gulfport Harbor Navigation Project and Port facility.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant upgrades and hence their need for the proposed project.

The MSPA contends that this proposed project is needed to revitalize the existing port facilities, minimize future storm damage and provide for the log-term recovery of the State of Mississippi and the Gulf Coast region. In addition, the MSPA believes the proposed expansion is needed to accommodate

larger container ships and to ensure safe and unrestricted navigation into and out of Gulfport Harbor. According to the MSPA, it will also enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations.

The proposed project is part of the Port of Gulfport Expansion Project and involves filling up to 400 acres of open-water bottom in the Mississippi Sound, dredging additional areas, substantial wharf expansion/development, construction of a breakwater of approximately 4,000 linear feet, fish passage and other items. The new port facility would be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The EIS would address the construction described above, as well as the operation and maintenance of the proposed project.

Enclosed is information regarding the proposed project for your review. Should you wish to discuss the EIS or have any questions, please contact Mr. Damon M. Young, P.G. at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

for Craig J. Litteken
Chief, Regulatory Division

Enclosures

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701-5505
727.824.5312, FAX 824.5309
http://sero.nmfs.noaa.gov

F/SER:RGH

APR 18 2011

Mr. Damon M. Young, P.G.
Coastal Branch Regulatory Division
Mobile District, U.S. Army Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Mr. Young:

NOAA's National Marine Fisheries Service (NMFS) has received your staff's letter dated March 2, 2011, requesting NMFS be a cooperating agency in the development of an environmental impact statement for the proposed Port of Gulfport Expansion Project (SAM-2009-1768-DMY), Harrison County, Mississippi.

NMFS accepts the Corps of Engineers' invitation to become a cooperating agency on the project. However due to manpower and travel constraints, our participation may be limited to review and comment of draft documents, teleconferences and occasional travel to Mississippi. We appreciate your request for NMFS's assistance in the development of this environmental document. If we may be of further assistance, please contact either Mr. Ryan Hendren of our Protected Resources Division at (727) 551-5610 or Mr. Mark Thompson of our Habitat Conservation Division Panama City Facility at (850) 234-5061.

Sincerely,

Roy E. Crabtree, Ph.D.
Regional Administrator

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

May 10, 2011

REPLY TO
ATTENTION OF

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

National Marine Fisheries Service
Attention: Mr. Mark Thompson
Habitat Conservation Division
3500 Delwood Beach Road
Panama City, Florida 32408

Dear Mr. Thompson:

The U.S. Army Corps of Engineers, Mobile District (USACE) intends to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.) and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The MSPA has filed an application for impacts to the existing Federal Channel and jurisdictional waters of the United States under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. The project proposed by MSPA is intended to expand existing Gulfport facilities and provide for the long-term recovery of the State of Mississippi and the Gulf Coast Region.

Potential impacts associated with the proposed project include filling up to 400 acres of open-water bottoms in Mississippi Sound, as well as construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, dredging and dredged material disposal and infrastructure and a breakwater of approximately 4,000 linear feet. The proposed expanded port facility will be elevated 25 feet above sea level to provide protection against future tropical storm surge events. All of this is associated with the Port of Gulfport Expansion Project. The enclosed figure depicts the study area.

The USACE is collecting data for the preparation of the EIS. The level of detail for our assessment will be as necessary to describe existing conditions, as well as provide analysis of future conditions due to project impacts. The intent of this letter is to request specific information on Essential Fish Habitat (EFH) and Aquatic Resources of National Importance (ARNI) occurring in the study area that should be addressed for the project and any conservation recommendations you may have.

To facilitate our being able to fully address the impacts to EFH and ARNIs in a manner that will meet your needs, please provide specific concerns and recommendations you have with the proposed project to EFH and ARNIs. Specifically, an expanded EFH Assessment document is being prepared and the USACE would like input from NMFS on the information they would like to see included in the expanded document. Please provide a list of Federally managed species and highly migratory species managed by NMFS that will need to be included in the EFH assessment. Additionally, please provide a list of the marine resources within the study area that NMFS believes could be adversely affected by the project and are considered to be of national economic importance.

Please reply at your earliest convenience to indicate whether your agency or any of its services, bureaus or offices, has any information to provide relevant to the proposed project. Should you wish to discuss the EIS or have any questions, please call me at (251) 694-3781 or e-mail at damon.m.young@usace.army.mil.

Sincerely,

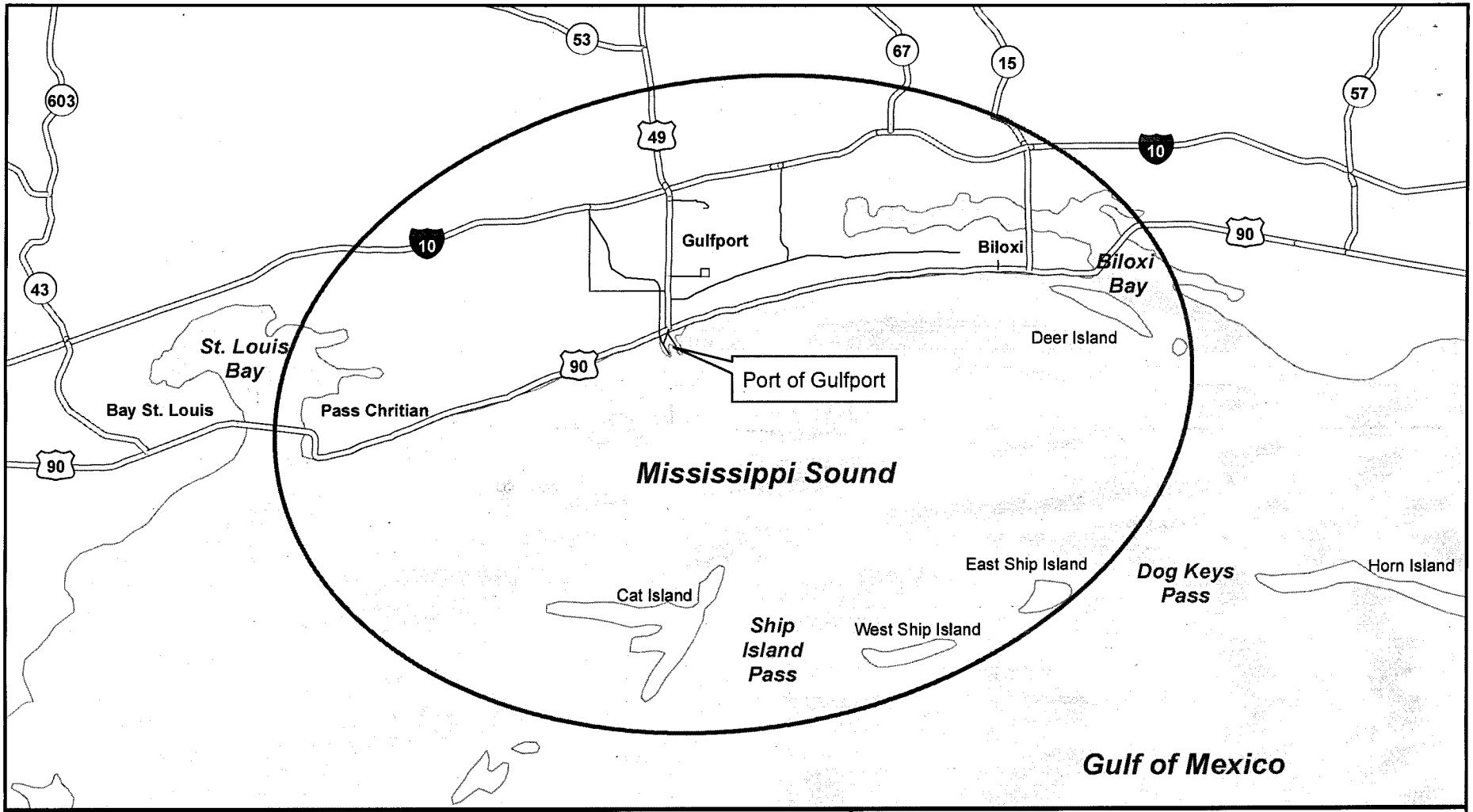
Damon M. Young, PG
Team Leader, Coastal Mississippi
Regulatory Division

Enclosure

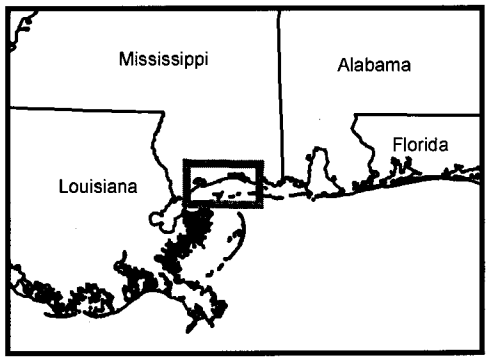
Hegji/3222/nj

Young/

File:



Study Area



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Study Area Map

Mississippi State Port Authority

Date: 2/21/2011

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DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

May 11, 2011

REPLY TO
ATTENTION OF

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority

National Marine
Fisheries Service
Attention: Mr. Ryan Hendren
Protected Resource Division
263 13th Avenue South
St. Petersburg, Florida 33701

Dear Mr. Hendren:

The U.S. Army Corps of Engineers, Mobile District (USACE), intends to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.) and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The MSPA has filed an application for impacts to the existing Federal Channel and jurisdictional waters of the United States under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. The project proposed by MSPA is intended to expand the existing Gulfport facilities and provide for the long-term recovery of the State of Mississippi and the Gulf Coast region.

Potential impacts associated with the proposed project include filling up to 400 acres of open-water bottoms in Mississippi Sound, as well as construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, dredging and dredged material disposal and infrastructure and a breakwater of approximately 4,000 linear feet. The proposed expanded port facility will be elevated 25 feet above sea level to provide protection against future tropical storm surge events. All of this is associated with the Port of Gulfport's Expansion Project. The enclosed figure depicts the study area.

USACE is collecting data for the preparation of the EIS. The level of detail for our assessment will be as necessary to describe existing conditions, as well as provide analysis of future conditions due to project impacts. The intent of this letter is to request specific information on threatened and endangered species occurring in the study area that should be addressed for the project and any conservation recommendations you may have.

In addition, we are requesting clarification of a letter from Mr. Miles Croom dated May 11, 2011, and an email from Dr. Stephania Bolden dated April 8, 2011, (copies enclosed) regarding Federally listed species, specifically the Gulf sturgeon. The email from Dr. Bolden is very specific in what your agency expects the USACE to address regarding impacts to the Gulf sturgeon; however the letter is less specific. Please clarify your expectations for evaluating impacts to the Gulf sturgeon.

Please reply at your earliest convenience to indicate whether your agency or any of its services, bureaus or offices, has any information to provide relevant to the proposed project. Should you wish to discuss the EIS or have any questions, please call Mr. Damon M. Young at (251) 694-3781 or by email at damon.m.young@usace.army.mil.

Sincerely,

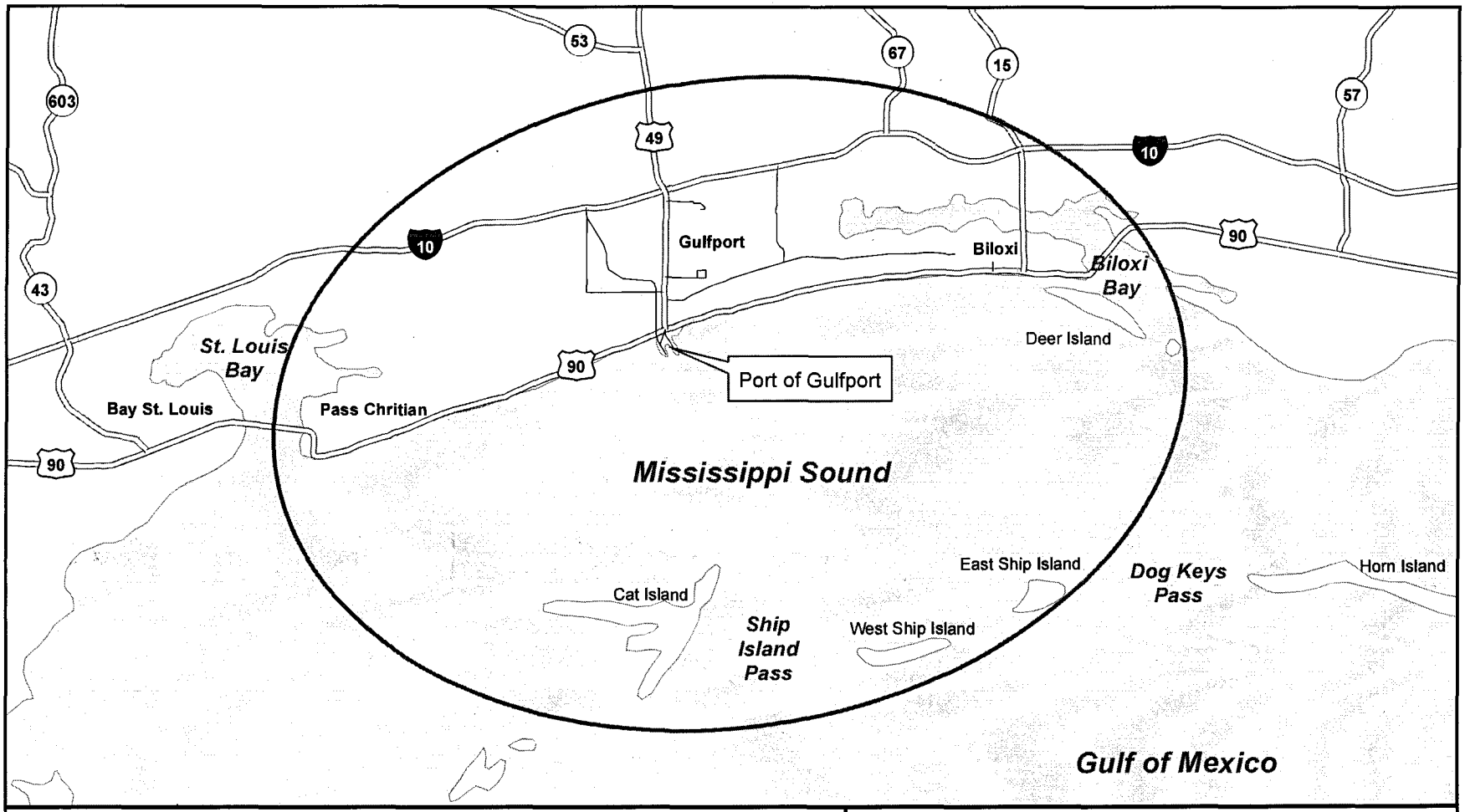
Philip A. Hegji
Acting Team Leader, Coastal Mississippi
Regulatory Division

Enclosures

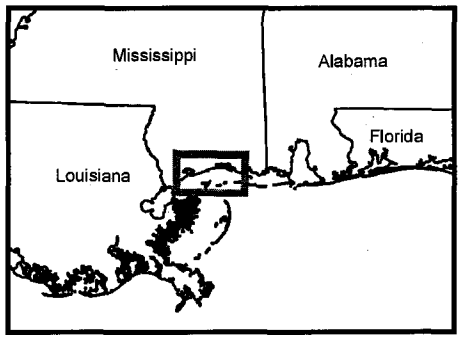
Hegji/3222/nj

Young/

File:



Study Area



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Study Area Map

Mississippi State Port Authority

Date: 2/21/2011

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-----Original Message-----
From: Stephania Bolden [mailto:Stephania.Bolden@noaa.gov]
Sent: Thursday, April 08, 2010 2:55 PM
To: Young, Damon M SAM
Cc: Robert Hoffman; David Bernhart; Roy Crabtree; Buck Sutter
Subject: Port of Gulfport Expansion - NMFS comments from 6 April 2010 meeting

Hi Skip,

Per request, here is a summary of comments I made on behalf of NMFS Protected Resources at the 6 April 2010 meeting to discuss Port of Gulfport.

1. Administrative:
   a. Because footprint of port will increase 250%, the project should be called an expansion instead of restoration.
   b. Direct all requests regarding listed species to David Bernhart, Assistant Regional Administrator for Protected Resources.
   c. Mark Thompson of NMFS Habitat Conservation is contact for EFH and mitigation.
   d. Suggest utilizing COE in-house expertise at ERDC to assist: Gary Rae, Todd Slack, Doug Clarke, Phil Kirk.
   e. NMFS and USFWS share management of Gulf sturgeon.

2. Construction of the breakwater to the east:
   a. structure has great potential to impede fish passage
   b. what is height and width (bottom and top) of breakwater structure? materials?
   c. Potential for fish passage over structure via ramp?
   d. Potential for staggered wave baffles to allow water circulation and fish movement through breakwater?

3. Construction of the nearshore cut/channel:
   a. structure has potential to trap fish
   b. what is proposed depth, width, purpose, and materials.
   c. Ensure flow attracts fish into and out of to cut instead of small craft harbor.
   d. Model circulation to ensure water temperature and dissolved oxygen are appropriate (DO 4.5mg/L at benthos during summer months).

4. Listed species in project area:
   a. reference SERO PRD website (http://sero.nmfs.noaa.gov/) to acquire list of species that are in project area.
   b. because vessel traffic will increase, include geographic areas that vessels traverse (Gulf of Mexico, south Atlantic Ocean) when considering species that may occur in project area.

5. Gulf sturgeon - consideration of the listed species and their designated critical habitat
   a. Potential effects to the the threatened Gulf sturgeon:
      1. Gulf sturgeon from both the Pearl and Pascagoula River are known to utilize coastal Mississippi area out to and including the barrier

islands for migration and foraging. Migration included both spawning movement when the fish move from marine to freshwater areas

as well as longshore coastal movements to forage and move to foraging habitat.

2. No directed study of Gulf sturgeon has been conducted within the project footprint.

3. Gulf sturgeon are known to utilize the coastal nearshore waters

4. The recent Gulf sturgeon 5-year review (attached) identified both the Pearl and Pascagoula River populations of Gulf sturgeon as being of unknown number and viability due to likely impacts from Hurricane Katrina and the lack of subsequent survey.

5. Known threats to the Gulf sturgeon include channel improvements and maintenance activities, water quality degradation, contaminant, red tide, and climate change.

b. Proposed Project is located within designated Gulf sturgeon critical habitat (Unit 8); unit 8 provides juvenile, sub-adult and adult feeding, resting and passage habitat for Gulf sturgeon from the Pearl and Pascagoula Rivers (68 FR 13395).

1. The Primary Constituent Elements (PCEs) with Unit 8 are: abundant food items, water quality, sediment quality, and safe and unobstructed migratory pathways (68 FR 13389).

2. The Gulfport channel was not excluded from critical habitat (68 FR 13401).

3. Gulf sturgeon critical habitat rule is attached.

6. Reference 50 CFR 402.14 for details about formal consultation. In order to determine the manner in which the action may affect the listed species (Gulf sturgeon) and its designated critical habitat, we advise the following studies be conducted. We discussed details of these

studies in a break-out meeting following the general meeting on Tuesday.

a. Identify use of project area and nearby habitat by Gulf sturgeon- capture and tag fish from both the Pearl and Pascagoula River, place receivers along the shoreline between rivers and port and around port.

b. Conduct substrate sampling in project area and nearby habitat to characterize substrate and prey availability.

c. Conduct core sampling to determine potential presence of contaminants within areas to be dredged.

d. Perform analysis to understand circulation patterns and sediment transport within the project area post-construction.

e. Any package submitted to NMFS for a section 7 ESA consultation request needs to address impacts to both the species and their designated critical habitat. When considering impact to designated critical habitat, assess potential affects to each Primary Constituent Element (listed above in number 5) and discuss how the project may or may not destroy or modify the ecological function of the habitat.

You noted draft meeting minutes will be forthcoming for review. I look forward to receiving them. Please let me know if I can further clarify any points listed above.

Stephania

Confidentiality Note: The Mississippi State Port Authority (MSPA) is committed to ensuring complete confidentiality of information for our customers. To this end, the information contained in this e-mail and/or document(s) attached is for the exclusive use by the individual named above and/or their organization and may contain confidential, privileged and non-disclosable information. If you are not the intended recipient, please refrain from reading, photocopying, distributing or otherwise using this e-mail or its contents in any way. If you have received this transmission in error, please notify me immediately.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701
(727) 824-5317; Fax 824-5300
http://sero.nmfs.noaa.gov

May 11, 2010 F/SER46:MT

Colonel Byron G. Jorns
District Engineer, Mobile District
Regulatory Division
Department of the Army, Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Colonel Jorns:

NOAA's National Marine Fisheries Service, Southeast Region, Habitat Conservation Division (NMFS) has reviewed public notice number SAM-2009-01768-DMY dated April 16, 2010. The applicant, Mississippi State Port Authority (MSPA), has requested a Department of the Army permit to dredge approximately 332 acres for new channel and harbor expansion and fill 700 acres of open water benthic habitat to construct new port facilities in Mississippi Sound, Harrison County, Mississippi. This proposal includes placing 38,400,000 cubic yards of fill material, removing 17,260,000 cubic yard of dredge material, and completing the fill of 84 acres authorized in a permit issued in 1998. The U.S. Army Corps of Engineers, Mobile District (Corps) has initiated consultation for potential adverse impacts to essential fish habitat (EFH). As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, NMFS provides the following comments and recommendations pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Project Area
Prior to 1991, the port facility occupied 286 acres in Mississippi Sound. In 1991, a 29-acre fill expansion was permitted (MS88-00954-L) for the purpose of accommodating existing and anticipated future container throughput for the next 50 years. In this configuration, the port covered 315 acres and supported break-bulk, bulk, container, commercial fishing, and gaming facilities (MSPA Gulfport Strategic Plan 1994). The permit issued in 1998 (MS96-02828-U) authorized filling of an additional 84 acres and dredging of 15 acres of Mississippi Sound for container and break-bulk handling and storage, and allowed relocation of the small craft harbor channel. The purpose of the 84-acre expansion was to provide rail interface for intermodal customers. This facility has not been constructed but remains a critical component of the 84-acre expansion. Sixty acres of the 84-acre fill are currently under construction and expected to be completed by November 2010. The remaining 24 acres will be filled shortly thereafter. When this area is filled, the MSPA property will occupy a total area of 399 acres of Mississippi Sound, a 26.6 percent increase over the 2005 footprint. The proposal now under consideration will

extend the port facility out into Mississippi Sound an additional 1.5 miles.

Impacts to Essential Fish Habitat
NMFS is concerned that filling an additional 616 acres of estuarine benthic habitat and water column and dredging an additional 332 acres of shallow estuarine bottoms to depths ranging from 32 to 36 feet, with perhaps a 4-foot over dredge allowance, would adversely impact EFH and other NMFS trust resources. The shallow unvegetated areas of Mississippi Sound are productive growth sites for macro- and microphytic algae, benthic diatoms, benthic dinoflagellates, polychaete worms, crustaceans, and mollusks (Livingston 1990). These benthic flora and fauna are important sources of food for a variety of fish and invertebrates that are of commercial, recreational, and ecological importance (Armstrong 1987). These habitats also provide essential forage, cover, spawning, and nursery areas for numerous commercially and recreationally important species (Christmas 1973). In addition to the direct impacts on fishery resources and habitats, on-site monitoring (MSPA Water Quality Monitoring Program 2001) has found that water quality within the small craft harbor and in the berthing area at West Pier is significantly degraded from May through September. Poor water quality conditions further impair the ecological value of project area habitats and their support of benthic and nektonic resources of Mississippi Sound.

Mississippi Sound is designated as EFH for the following federally managed species: red drum; Spanish mackerel; white, brown, and pink shrimp; Gulf stone crab; and several shark species. Categories of EFH that would be impacted by the project include sand and mud substrate and estuarine water column. Preliminary examination of the seasonal patterns of abundance suggests that at least one of the managed species is present in Mississippi Sound at all times of the year. Detailed information on federally managed fisheries and their EFH is provided in the 2005 Generic Amendment to the Fishery Management Plans for the Gulf of Mexico, prepared by the Gulf of Mexico Fishery Management Council (GMFMC). In addition to EFH designated for federally managed species, Mississippi Sound provides nursery and foraging habitats that support both forage and economically important marine fishery species such as black drum, spotted seatrout, southern flounder, gulf menhaden, bluefish, croaker, mullet, and blue crab. These estuarine-dependent organisms serve as prey for other fisheries managed under the Magnuson-Stevens Act by the GMFMC (e.g., mackerels, snappers, and groupers) and highly migratory species managed by NMFS (e.g., billfishes and sharks).

Compensatory mitigation
Within the sequential mitigation process, compensatory mitigation is proposed only after water-dependent projects have undergone an alternatives analysis that results in adequate avoidance and minimization of impacts. Evidence of such an analysis has not been provided to NMFS. As proposed, this project would likely require compensatory mitigation based on the resources present at this location. The public notice describes a conceptual approach for mitigation that would include coastal habitat restoration and enhancement, creation of nearshore reefs, deployment of derelict vessels within existing fish havens, enhancement of oyster reefs, management of coastal preserves, and acquisition of new properties for inclusion in the coastal preserve program.

This conceptual approach may constitute suitable mitigation options for such a project, but a

final determination would be based on the location and amount of acreage restored, protected, acquired or enhanced; likelihood of success, and the adequacy of contingency plans and adaptive management should mitigation measures fail to meet criteria for functionality.

Expanded EFH Consultation
The EFH provisions of the Magnuson-Stevens Act represent an integration of fishery management and habitat conservation by recognizing the dependence of healthy, productive fisheries on the availability of viable and diverse estuarine and marine ecosystems, with the goal of supporting the sustainable harvest of marine fisheries. Therefore, due to the size of the project and the nature and extent of probable direct and indirect impacts to EFH, NMFS requests that an expanded EFH consultation be conducted pursuant to 50 CFR Section 600.920(i).

As part of an expanded EFH consultation, NMFS recommends the Corps prepare an EFH assessment as described at 50 CFR 600.920(e). The EFH assessment must contain a description of the action; an analysis of the potential adverse effects of the action on EFH and the managed species; the federal agency's conclusions regarding the effects of the action on EFH, and proposed mitigation, if applicable. NMFS also recommends for this project the EFH assessment include additional information as appropriate, such as the results of an on-site inspection to evaluate the habitat and the site-specific effects of the project; the views of recognized experts on the habitat or species that may be affected; a review of pertinent literature and related information; an analysis of alternatives to the action, including alternatives that could avoid or minimize adverse effects on EFH.

Aquatic Resources of National Importance
Several of the marine resources identified herein that could be adversely affected by the project are considered to be of national economic importance pursuant to Section 906(e)(1) of the Water Resources Development Act of 1986 and, therefore, are designated as aquatic resources of national importance (ARNI). In accordance with Part IV, Section 3(a) of the Memorandum of Agreement between the Departments of Commerce and Army regarding Section 404(q) of the Clean Water Act, NMFS finds that placing an additional 616 acres of fill material and dredging of approximately 332 acres in Mississippi Sound may result in substantial and unacceptable impacts to ARNI.

Due to the scope of this project, an environmental impact statement (EIS) should be produced to analyze the potential impacts of the project as proposed and to present a set of feasible alternatives. An EIS should evaluate various construction alternatives beyond the 399-acre footprint as well as the no action alternative. Studies should be performed to characterize existing benthic communities within the areas to be dredged and filled, the adjacent areas and those within the existing channel and basin. Such studies would facilitate a comparative assessment of impacts and would assist in determining mitigation needs and options, if appropriate. In addition to habitat loss from the proposed expansion, water quality impacts must be thoroughly assessed. The 1998 permit incorporated mitigation measures to improve water quality in and around the port, but it is uncertain if these measures have been or are now being performed. An analysis of the results of the 1998 mitigation measures should be included in the EIS. A detailed plan addressing mitigation for unavoidable impacts should be provided.

In consideration of the significant direct impacts to estuarine habitats of Mississippi Sound, the probable indirect and cumulative impacts, the lack of information and analysis available at this time, and the need to ensure the conservation of EFH and dependent fishery resources, NMFS provides the following:

EFH Conservation Recommendations

1. The permit for filling 616 acres and excavating 332 acres of estuarine habitat in Mississippi Sound, as currently proposed, shall be denied.

2. Further consideration of any port expansion should require a thorough analysis of less environmentally damaging practicable alternatives and suitable mitigation options accomplished through the preparation of an EIS.

Please be advised the Magnuson-Stevens Act and the regulation to implement the EFH provisions (50 CFR Section 600.920) require the Corps to provide a written response to this letter. That response must be provided within 30 days and at least 10 days prior to final agency action. A preliminary response is acceptable if final action cannot be completed within 30 days. The Corps' final response must include a description of measures to be required to avoid, minimize, mitigate, or offset the adverse impacts of the activity. If the Corps' response is inconsistent with these EFH conservation recommendations, the Corps must provide an explanation of the reasons for not implementing those recommendations.

In addition, the project area lies within the known distribution and critical habitat of a federally listed species under the purview of NMFS. In accordance with the Endangered Species Act of 1973, as amended, the Corps' must review this proposal and determine whether the actions proposed may affect endangered or threatened species. Actions that may affect listed species should be reported to our Protected Resources Division at the letterhead address. If the Corps determines that the proposed activities may adversely affect any listed species, or destroy or adversely modify designated critical habitat, formal consultation must be initiated.

NMFS looks forward to working with the Corps in preparing the EIS and addressing these concerns. Please contact Mark Thompson of our Panama City Office at 904/234-5061 with questions regarding this EFH consultation.

Sincerely,

Miles M. Croom

Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

cc:
F/SER4
F/SER3
F/SER - Keys
cc: email
EPA Atlanta
FWS Jackson
MS DMR Biloxi
MS DEQ Jackson
GMFMC
GSMFC

LITERATURE CITED

Armstrong, N.E. 1987. The ecology of open-bay bottoms of Texas: a community profile. U.S. Fish Wildl. Serv. Biol. Rep. 85(7.12): 104 p.

Christmas, J.Y. 1973. Cooperative Gulf of Mexico Estuarine Inventory and Study, Mississippi. State of Mississippi, Gulf Coast Research Laboratory, Ocean Springs, MS. 434 p.

Livingston, R.J. 1990. Inshore Marine Habitats In "Ecosystems of Florida" (R.L. Myers and J.J. Ewel, eds.) University Presses of Florida, Gainesville. pp. 549-573.

Mississippi State Port Authority at Gulfport, Strategic Plan. August 26, 1994. Vickerman, Zachary, Miller.

Mississippi State Port Authority Gulfport, Mississippi Annual Report Water Quality Monitoring Program. September 11, 2001. Brown & Mitchell, Inc. 11 p.

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

May 20, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-1768-DMY, Mississippi State Port Authority.

Mr. Heinz Mueller
Environmental Protection Agency, Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, GA 30303-8960

Dear Mr. Mueller:

As you know, the U.S. Army Corps of Engineers, Mobile District (USACE) announced its intent to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.) and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The Notice of Intent was published in the Federal Register on March 11, 2011. The official scoping comment period was noticed from March 11, 2011 to April 11, 2011.

A public scoping meeting was held March 31, 2011, at the University of Southern Mississippi's Gulf Park Campus, Long Beach, Mississippi. Comments were accepted in written format at the scoping meeting or via mail/e-mail until April 11, 2011. Since the closing of the comment period, the Environmental Protection Agency (EPA) has been contacted by the USACE on several occasions to determine if a comment letter would be provided. As of this letter, no comments have been received from the EPA.

To ensure consistency with the views of EPA in regards to the project, we would like the opportunity to consider your comments during preparation of the EIS, particularly during the critical early stages. However, in order to proceed in a timely manner and for your comments to be considered in the preparation of the Draft EIS, we request that you submit written comments to us no later than May 31, 2011. Should you wish to discuss this with us, please contact Mr. Philip Hegji at 251.690.3222 or by electronic mail at philip.a.hegji@usace.army.mil.

Sincerely,

Craig J. Litteken
Chief, Regulatory Division

STATE OF MISSISSIPPI

Haley Barbour
Governor

MISSISSIPPI DEPARTMENT OF MARINE RESOURCES

William W. Walker, Ph.D., Executive Director

May 23, 2011

Mississippi State Port Authority
Attn: Joseph O. Conn, P.E.
P.O. Box 40
Gulfport, MS 39502

RE: Permit DMR-M-9707019

Dear Mr. Conn:

Please find enclosed the original and one copy of the Exclusion issued to you by the Mississippi Commission on Marine Resources on May 17, 2011.

Please execute this Exclusion by signing both documents and returning the copy to the Department of Marine Resources.

The Department of Marine Resources has also coordinated a review of your project through the Coastal Program review procedures and determined that the project referenced above is consistent with the Mississippi Coastal Program, provided that you comply with the noted conditions.

If you have any questions regarding the Permit or this correspondence, please contact Jennifer Wittmann with the Bureau of Wetlands Permitting at 228-523-4111 or Jennifer.wittmann@dmr.ms.gov.

Sincerely,

William W. Walker, Ph.D.
Executive Director

WWW/jcw

Enclosures

cc: Mr. Philip Hegji, USACE
Ms. Florance Watson, OPC
Mr. Raymond Carter, SOS

Certification Number: DMR-M-9707019
Type: Exclusion
Date: May 23, 2011

WHEREAS, application by: the Mississippi State Port Authority for compliance under the provisions of Chapter 27, Mississippi Code of 1972, as amended, to perform certain works affecting the coastal wetlands of the State of Mississippi on the Mississippi Sound, Gulfport, Harrison County, Mississippi.

NOW THEREFORE, this certification authorizes the above named applicant hereinafter called permittee, to perform such works at the Mississippi State Port, Gulfport, MS in adherence to the following conditions contained herein:

1. Approximately 500,000 cubic yards of material unsuitable for construction shall be excavated within the footprint of the previously approved Phase III expansion of the MSP;

2. Turbidity shall be minimized at the dredge site by methods such as using staked filter cloth, staged construction, and/or the use of turbidity screens around the immediate project site;

3. No dredging of wetlands, submerged aquatic vegetation or shellfish beds is authorized;

4. Dredge material shall be utilized for a DMR-approved beneficial use, in accordance with MS Code § 49-27-61 unless a written exception to these requirements is issued by the DMR;

5. Prior to the commencement of construction, permittee must submit to the DMR a copy of the Tidelands Lease as required by the Secretary of State and as filed in the subject County Land Records, or a statement from the Secretary of State that the permitted activity does not require a Tidelands Lease;

6. No construction debris or unauthorized fill material shall be allowed to enter coastal wetlands or waters;

7. Best Management Practices shall be used at all times during construction;

8. Vegetated wetlands shall not be impacted; and,

9. No creosote material shall be used in construction.

Any deviations beyond the restrictive conditions as set forth in this Certificate of Exclusion shall be considered a violation and may result in the revocation of the certification. Violations of these conditions may be subject to fines, project modifications and/or site restoration. Both the permittee and the contractor may be held liable for conducting unauthorized work. A modification to these conditions may be requested by submitting a written request along with a revised project diagram to DMR. *Proposed modifications to dimensions, project footprint, and/or procedures must be approved in writing prior to commencement of work.*

This certification conveys no title to land and water, and does not constitute authority for

reclamation of coastal wetlands.

This certification authorizes no invasion of private property or rights in property.

Granting of this certification does not relieve the permittee from requirements of a Permit from the U.S. Army Corps of Engineers nor from the necessity of compliance with all applicable state or local laws, ordinances and zoning or other regulations.

This certification shall become effective upon acceptance by the permittee and receipt of the executed copy.

Please execute this certification by signing both documents and returning the copy to the Department of Marine Resources.

Work authorized by this certification must be completed on or before May 23, 2016.

Enclosed is a "Notice of Compliance" which must be conspicuously displayed at the site during construction of the permitted work.

The Department of Marine Resources has also coordinated a review of your project through the Coastal Program review procedures and determined that the project referenced above is consistent with the Mississippi Coastal Program, provided that you comply with the noted conditions and reviewing coastal program agencies do not disagree with said plans. By copy of this certification, we are notifying the U.S. Army Corps of Engineers of this determination.

THE PERMITTEE BY ACCEPTANCE OF THIS CERTIFICATION AGREES TO ABIDE BY THE STIPULATIONS AND CONDITIONS CONTAINED HEREIN AND AS DESCRIBED BY THE PLANS AND SPECIFICATIONS SUBMITTED AS PART OF THE COMPLETED APPLICATION.

STATE OF MISSISSIPPI
DEPARTMENT OF MARINE RESOURCES

BY: _____
William W. Walker, Ph.D.
Executive Director

Accepted this the ____ day of _____, 20 ____.

BY: _____

MISSISSIPPI

Department of Marine Resources

NOTICE OF COMPLIANCE
DMR- M-9707019 EXCLUSION
THIS NOTICE ACKNOWLEDGES THAT:

DATE: May 23, 2011

Mississippi State Port Authority
P.O. Box 40
Gulfport, MS 39502

HAS, THROUGH APPLICATION TO THIS DEPARTMENT, DULY COMPLIED WITH THE MISSISSIPPI COASTAL WETLANDS PROTECTION LAW TO:

1. Approximately 500,000 cubic yards of material unsuitable for construction shall be excavated within the footprint of the previously approved Phase III expansion of the MSP;
2. Turbidity shall be minimized at the dredge site by methods such as using staked filter cloth, staged construction, and/or the use of turbidity screens around the immediate project site;
3. No dredging of wetlands, submerged aquatic vegetation or shellfish beds is authorized;
4. Dredge material shall be utilized for a DMR-approved beneficial use, in accordance with MS Code § 49-27-61 unless a written exception to these requirements is issued by the DMR;
5. Prior to the commencement of construction, permittee must submit to the DMR a copy of the Tidelands Lease as required by the Secretary of State and as filed in the subject County Land Records, or a statement from the Secretary of State that the permitted activity does not require a Tidelands Lease;
6. No construction debris or unauthorized fill material shall be allowed to enter coastal wetlands or waters;
7. Best Management Practices shall be used at all times during construction;
8. Vegetated wetlands shall not be impacted; and,
9. No creosote material shall be used in construction.

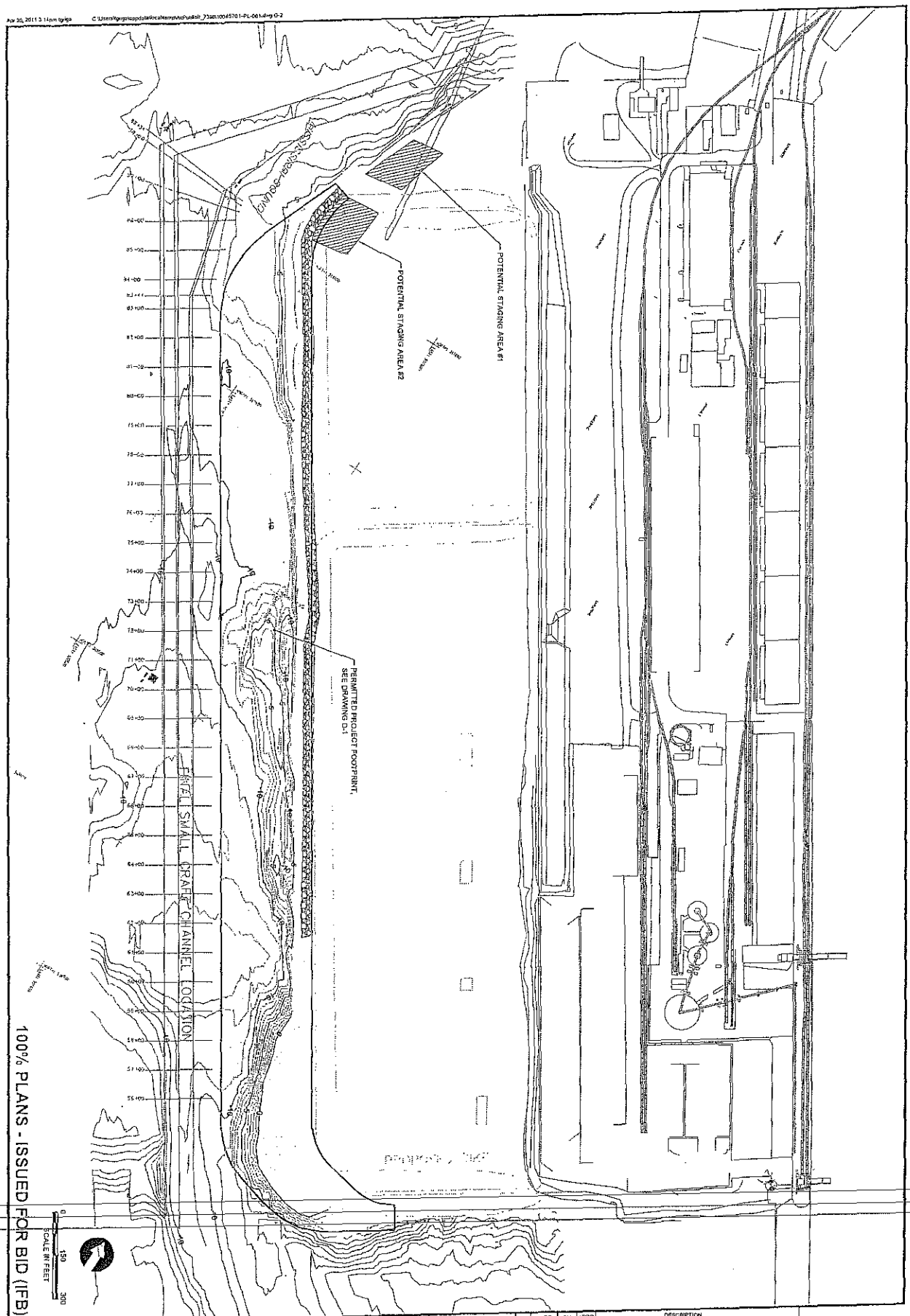
On the Mississippi Sound at the Mississippi State Port in Gulfport, Harrison County, Mississippi.

No construction debris or unauthorized fill material shall be allowed to enter coastal wetlands or waters.

FURTHERMORE, THIS PROJECT AS PROPOSED HAS BEEN FOUND TO BE CONSISTENT WITH ALL GUIDELINES FOR CONDUCT OF REGULATED ACTIVITIES IN COASTAL WETLANDS AS SET FORTH IN THE MISSISSIPPI COASTAL PROGRAM.

Executive Director

POST THIS NOTICE CONSPICUOUSLY AT SITE OF WORK



100% PLANS - ISSUED FOR BID (IFB)

DREDGE DESIGN FOR 24-ACRE FILL AREA
PORT OF GULFPORT RESTORATION PROJECT
EXISTING CONDITIONS - SITE OVERVIEW

ANCHOR QEA

CONTRACT NO. 010-HUD-011
PROJECT NO. 003
GULFPORT, MS
MISSISSIPPI STATE
PORT AUTHORITY

REV	DATE	BY	APP'D	DESCRIPTION

DESIGNED BY: W. DIMICOLA | DRAWN BY: T. GRICA | CHECKED BY: W. MEARS | APPROVED BY: J. VERDUIN

SCALE: AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY

DATE: APRIL 29, 2011

PORT PROJECT NO. 003

G-2

SHEET NO. 3 OF 10

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

June 15, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-01768-DMY, Mississippi State Port Authority-Formal Request for Information (MSPAEIS-2011-001)

Mississippi State Port Authority
Attention: Mr. Joe Conn
Director of Port Restoration
2510 14th St., Suite 880
Gulfport, Mississippi 39501

Dear Mr. Conn:

The U.S. Army Corps of Engineers, Mobile District (USACE) is formally requesting information to support preparation of the Environmental Impact Statement (EIS) for the Mississippi State Port Authority's (MSPA) proposed Port of Gulfport Expansion Project. Following review of public and agency comment during the formal scoping period, and after review of currently available information, it has been determined that the following information is needed:

1) New work and maintenance dredged material quantities for expansion of the turning basin; and

2) A dredged material management plan (DMMP) for expansion of the turning basin to include both construction (new work) and maintenance of the basin for the life of the project (up to 30 years).

Additionally, USACE requests that MSPA determine if the DMMP may require designation of an ODMDS for placement of material under the Marine Protection, Research, and Sanctuaries Act (MPRSA) sections 102 or 103. If it is determined designation is required, USACE requests immediate notification so that coordination with EPA can be initiated, if necessary.

Should you wish to discuss this request or have any questions, please do not hesitate to contact me at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

Damon M. Young, P.G.
Team Leader, Coastal Mississippi
Regulatory Division

D. YOUNG/3781/
RDI-S
FILE

Basic Evaluation of Existing ODMDS Options for the Proposed Port of Gulfport Expansion Project

The Atkins team has evaluated available information regarding availability of ODMDSs in proximity to the proposed Port of Gulfport Expansion Project. The following provides a summary of the evaluation.

Gulfport ODMDS Options

The Mobile District and EPA Region 4 have 3 ODMDS locations near the project area: Gulfport East, Gulfport West and Pascagoula.

Gulfport East:

This site lies along the eastern edge of the Gulfport navigation channel approximately 12 nautical miles (nmi) from the Mississippi coast and 0.7 nmi from Ship Island (USACE and EPA, no date). According to the 2008 Gulfport Harbor Navigation Channel FEIS prepared by C2HMHill (2008 FEIS), the Gulfport East ODMDS site is no longer used by the USACE for disposal because the material that is placed there tends to drift westward into the navigation channel (C2HMHill, 2008). Therefore this ODMDS will not be considered for disposal in this project.

Gulfport West:

Gulfport West is immediately across from Gulfport East on the other side of the navigation channel approximately 14 nmi from the Mississippi coast and 1.2 nmi from Ship Island (USACE and EPA, no date). According to the 2008 FEIS, this site did not have enough capacity to hold the entire new work material from the widening of the channel (approximately 3,800,000 CY) and would not have enough capacity to hold the maintenance material (approximately 2,900,000 CY per dredging cycle). The current and projected capacity of this ODMDS was not publicly available. Depending on whether or not it is used for expansion of the channel and depending on the projected capacity and the projected amount of material that would need to be placed within the area, this ODMDS may be a suitable disposal site.

Pascagoula:

The Pascagoula ODMDS is located in proximity to the area with Horn Island to the north, the Pascagoula Ship channel to the east, the navigation safety fairway to the south, and a north-south line running through Dog Keys Pass to the west (USACE and EPA, 2006). As of the SMMP publication date in 2006, the USACE had estimated that between 3 – 8 million CY would be disposed of at the site and capacity was not an issue. The capacity would become an issue, however, if the projected capacities exceed 25% of their estimates (USACE and EPA, 2006). The current capacity available at this ODMDS was not made public. Depending on the available capacity and the amount of material that would need to be disposed of, this ODMDS could be a possible disposal option.

Proposed ODMDS:

The 2008 FEIS states that there was a proposed ODMDS south of the Safety Fairway and approximately 3 miles from the Chandeleur Islands (C2HMHill, 2008). The status of this permit is currently unknown. If this ODMDS is permitted, it could be another possible disposal option.

References:

USACE and EPA, no date. Gulfport ODMDS Site Management and Monitoring Plan. Could not find the signed version and therefore no date could be established. Looks like it was executed around 2002 or 2003 though based on the text.

C2HMHill, 2008. 2008 Gulfport Harbor Navigation Channel FEIS

USACE and EPA, 2006. Pascagoula ODMDS Site Management and Monitoring Plan.

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

June 15, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-01768-DMY, Mississippi State Port Authority

Historic Preservation Division
Attention: Mr. Greg Williamson
Post Office Box 571
Jackson, Mississippi 39205-0571

Dear Mr. Williamson:

The U.S. Army Corps of Engineers, Mobile District (USACE) intends to prepare an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The MSPA has filed a permit application with USACE for proposed impacts to jurisdictional waters of the U.S. under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. The project proposed by MSPA is intended to expand the existing Port of Gulfport facilities and provide for the long-term recovery of the State of Mississippi and the Gulf Coast region. Potential impacts associated with the proposed project include dredge and fill activities impacting up to 400 acres of open-water bottom in Mississippi Sound. The proposed expanded port facility would be constructed to 25 feet above mean sea level to provide protection against storm surge events. The enclosed figures depict the study area and project features.

The USACE is collecting data for the preparation of an EIS. The level of detail for our assessment will be as necessary to describe existing conditions, as well as to determine potential project impacts. The intent of this letter is to request specific information on Cultural Resources occurring in the study area that should be addressed for the project and any conservation recommendations you may have.

For your information, Mr. Jim Woodrick of reviewed a similar project on May 10, 2010 in a letter (enclosed) to the USACE (MDAH Project Log #04-116-10) resulting in a finding that no cultural resources are likely to be affected. The cleared project is adjacent to the impact area for the currently proposed project.

Please reply at your earliest convenience to indicate whether your agency, or any of its services, bureaus, or offices, has any information to provide relevant to the proposed project. Should you wish to discuss the EIS or have any questions, please call me at (251)694-3781 or email at damon.m.young@usace.army.mil.

Sincerely,

Damon M. Young, PG
Team Leader, Coastal Mississippi
Regulatory Division

Enclosures

15 June 11

D. YOUNG/3781/a

RD-I-S

FILE

MISSISSIPPI DEPARTMENT *of* ARCHIVES AND HISTORY

MDAH

PO Box 571, Jackson, MS 39205-0571
601-576-6850 • Fax 601-576-6975
mdah.state.ms.us
H.T. Holmes, Director

May 10, 2010

Mr. Damon M. Young, PG
Mobile District, Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628-0001

RE: Proposed restoration and revitalization of the Port of Gulfport (Mississippi State Port Authority), MDAH Project Log #04-116-10, Harrison County

Dear Mr. Young:

We have reviewed your request for a cultural resources assessment, received on April 16, 2010, for the above referenced projects in accordance with our responsibilities under Section 106 of the National Historic Preservation Act and 36 CFR Part 800. After reviewing the information provided, it is our determination that no cultural resources are likely to be affected. Therefore, we have no objection with the proposed undertaking.

Should there be additional work in connection with the project, or any changes in the scope of work, please let us know in order that we may provide you with appropriate comments in compliance with the above referenced regulations.

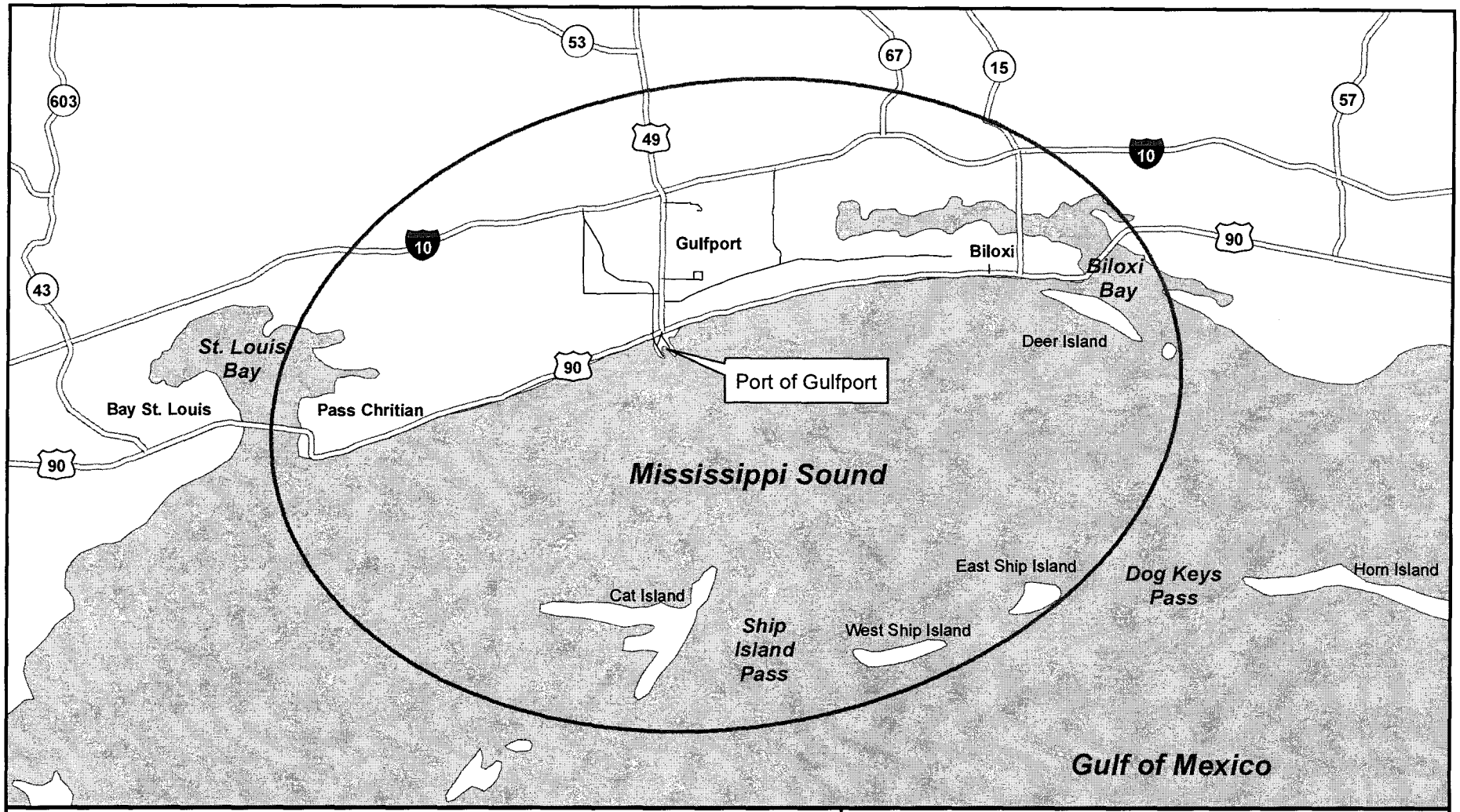
If you have any questions, please do not hesitate to contact us at (601) 576-6940.

Sincerely,

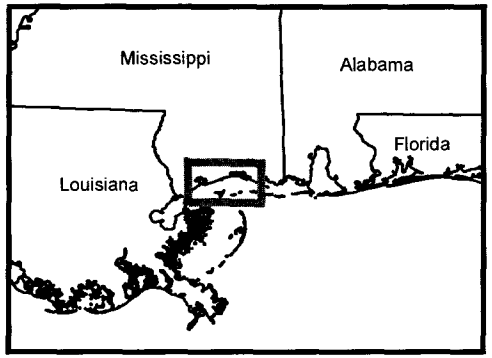
Jim Woodrick
Review and Compliance Officer

FOR: H.T. Holmes
State Historic Preservation Officer

RECEIVED
MAY 13 2010
By



Study Area



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Study Area Map

Mississippi State Port Authority

Date: 2/21/2011

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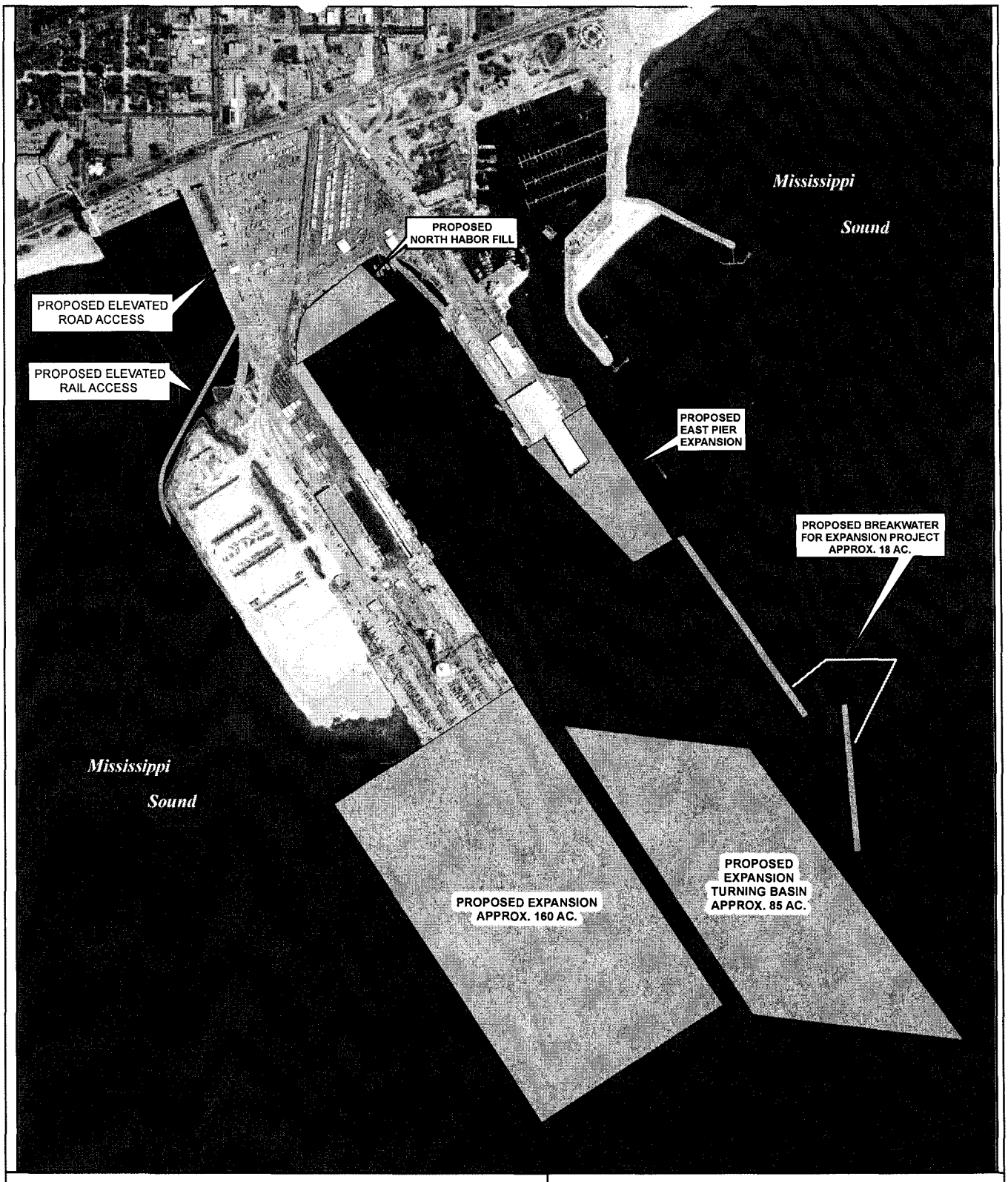

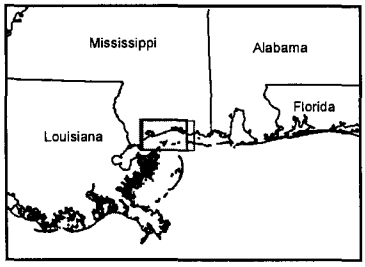

N

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ATKINS

PROJECT FEATURES
PROPOSED PORT OF GULFPORT
EXPANSION PROJECT

File: L:\Projects\Hc1\MSPA-Gulfport EIS\100018536\project_features.pdf

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

June 15, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-01768-DMY, Mississippi State Port Authority-Formal Request for Information (MSPAEIS-2011-001)

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Should you wish to discuss this request or have any questions, please do not hesitate to contact me at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

Damon M. Young, P.G.
Team Leader, Coastal Mississippi
Regulatory Division

D. YOUNG/3781/
RDI-S
FILE

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C2HMHill, 2008. 2008 Gulfport Harbor Navigation Channel FEIS

USACE and EPA, 2006. Pascagoula ODMDS Site Management and Monitoring Plan.

Vitale, Lisa D

From: Ryan Hendren [Ryan.Hendren@noaa.gov]
Sent: Thursday, June 16, 2011 1:22 PM
To: Bulger, Angela G
Cc: Young, Damon M SAM; Hegji, Philip A SAM; Fitzgibbons, Kimberly D; Vitale, Lisa D
Subject: Re: NMFS PRD letter
Attachments: Ryan_Hendren.vcf

Angela,

I apologize for the late reply. As we discussed in the meeting last month, the May 11, 2011 letter requested clarification on the May 11, 2010 letter from NMFS Habitat Conservation Division and the email from Dr. Bolden (NMFS-Protected Resource Division) on April 8, 2010 in reference to USACE project SAM-2009-1768-DMY.

The May 11, 2011 letter stated "The email from Dr. Bolden is very specific in what your agency expects the USACE to address regarding impacts to the Gulf sturgeon; however the letter is less specific. Please clarify your expectations for evaluating impacts to the Gulf sturgeon."

I believe there is a misunderstanding of the email and the letter. The email from Dr. Bolden discusses the issues that are likely to be encountered by the project subject to Section 7 of the ESA.

The letter submitted by NMFS Habitat Conservation Division discusses the issues that are likely to be effect Essential Feature Habitat under the Fish and Wildlife Coordination Act and Magnuson-Stevens Act.

Therefore the letter will not deal directly with impacts to Gulf sturgeon. -rH

On 6/9/2011 11:21 AM, Bulger, Angela G wrote:
Hey Ryan!

I was just looking at the letter sent to NMFS from USACE last month (pdf attached) and realized that last week on the call we thought it had been wrapped up and we didn't need anything from you, but I'm not sure we got the clarification requested. Perhaps I missed it, and if so, I apologize. The second to last paragraph in the May 2011 letter to NMFS specifically requests clarification on expectations for evaluating impact to the Gulf sturgeon. Our specialists felt that the email from Dr. Bolden in 2010 was very specific, but that the letter we received in May 2010 was less specific. Can you please just clarify for us? I know you're busy, but it would be nice to have a letter for the administrative record, if possible.

Feel free to give me a call if you'd like to discuss. (I just noticed that the letter references 2011 instead of 2010 for both the email and letter from NMFS. Sorry if this caused confusion!)

Thanks!

Angela G. Bulger
Ecology Group Manager

ATKINS

6504 Bridge Point Parkway, Suite 200, Austin, Texas 78730 | Tel: +1 (512) 342 3388 | Fax: +1 (512) 327 2453 | Cell: +1 (512) 565 5797 |
Email: angela.bulger@atkinsglobal.com | Web: www.atkinsglobal.com/northamerica www.atkinsglobal.com

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Consider the environment. Please don't print this email unless you really need to.

--
Ryan Hendren
ESA Consultant
Office of Protected Resources
National Marine Fisheries Service
263 13th Ave S
St. Petersburg, FL 33701
PH: (727) 551-5610
FX: (727) 824-5309
Email: ryan.hendren@noaa.gov
Web: http://sero.nmfs.noaa.gov/pr/pr.htm

This message has been checked for all known viruses by MessageLabs.

U.S. Department of Homeland Security

United States Coast Guard

Commander
U.S. Coast Guard Sector Mobile

1500 15th Street
Mobile, AL 36615-1300
Staff Symbol: spw
Phone: (251) 441-5940
Fax: (251) 441-6169

16610
June 20, 2012

District Engineer
U.S. Army Corps of Engineers, Mobile District
Regulatory Division; Coastal
P.O. Box 2288
Mobile, AL 36628-0001

Dear Mr. Young:

This letter is in response to Public Notice No. SAM-2012-00632-DMY, dated April 30, 2012, Dept. Coastal Sciences, USM – Proposal to install 19 buoys with attached Vemco VR2W receivers around the proposed new footprint of the restored and expanded Port of Gulfport, Gulfport, MS.

In accordance with the June 2, 2000 Memorandum of Understanding between the Coast Guard and Army Corps of Engineers, my staff conducted an evaluation of the proposed site on June 5, 2012. After conducting an initial risk assessment of the proposal, we found that the proposed project indicates a low level of risk with regard to waterway safety. Therefore, I have no objections with this project and request that the following special condition statement is included in any forthcoming USACOE Permit approvals or directives related to Public Notice No. SAM-2012-00632-DMY, dated April 30, 2012.

"In order for the Coast Guard to give proper notice to the maritime community; the permitted owners, contractors, or responsible party(s) shall contact Coast Guard Sector Mobile Waterways Management Branch (spw), 1500 15th Street, Mobile, AL 36615 at (251) 441-5684 or (251) 441-5720, 60 days prior to performing the proposed action and provide proposed position and location of each buoy. The permitted owners, contractors, or responsible party(s) must also receive a U.S. Coast Guard Private Aids to Navigation marking determination. At no later than 30 days prior to the installation of any buoys, you are required to contact the Eighth Coast Guard District (dpw), 500 Poydras St. Suite 1230, New Orleans, LA 70130, (504)671-2328 or via email to: D8oanPATON@uscg.mil. For general information related to Private Aids to Navigation please visit the Eighth CG District web site at: http://www.uscg.mil/d8/waterways/PATON.Home.asp."

If you have any further questions concerning this matter or the applicant wishes to meet directly with a representative of the Captain of the Port, please contact the Waterways Branch at (251) 441-5940.

Sincerely,

L. J. CARSON
Lieutenant, U. S. Coast Guard
Waterways Division Chief
By direction

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

June 30, 2011

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-01768-DMY, Mississippi State Port Authority-Formal Request for Information (MSPAEIS-2011-002)

Mississippi State Port Authority
Attention: Mr. Joe Conn
Director of Port Restoration
2510 14th St., Suite 880
Gulfport, Mississippi 39501

Dear Mr. Conn:

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a. Capacity limits for the MDOT Connector Road, as currently designed;

b. Projected truck and employee traffic volumes at full expansion build-out;

c. Capacity limits along the existing KCS rail line;

d. Projected capacity limits along the KCS rail line post-improvement; and

e. Projected volumes of rail container traffic expected a full expansion build-out.

The requested information is needed to continue the evaluation of potentially connected actions to the proposed Port of Gulfport Expansion Project. Please provide a formal response within 30 to 60 days of receipt of this letter.

Should you wish to discuss this request or have any questions, please do not hesitate to contact me at 251-694-3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

Damon M. Young, P.G.
Team Leader
Coastal Mississippi

MISSISSIPPI STATE PORT AUTHORITY AT GULFPORT

JOHN K. RESTER
Commissioner
LENWOOD S. SAWYER, JR.
Commissioner
JAMES C. SIMPSON, JR.
Commissioner

FRANCES TURNAGE
Commissioner
FRANK WILEM
Commissioner
DONALD R. ALLEE
Executive Director & CEO
www.shipmspa.com

July 6, 2011

RECEIVED
JUL 14 2011
By

Damon Young, P.G.
Team Leader, Coastal Mississippi
Regulatory Division
USACE, Mobile District
109 St. Joseph Street
Mobile, AL 36602

Subject: Department of the Army Permit Application Number SAM-2009-01768-DMY, Mississippi State Port Authority Request for Information (MSPA-2001-001)

Dear Mr. Young:

The Mississippi State Port Authority (MSPA) received your letter dated June 15, 2011, formally requesting information to support the preparation of the Environmental Impact Statement (EIS) for MSPA's proposed Expansion Project. Two questions were asked regarding potential dredged material.

1. New work and maintenance dredged material quantities for expansion of the turning basin, and
2. A dredged material maintenance plan (DMMP) for the expansion of the turning basin to include by construction (new work) and maintenance of the basin for the life of the project (up to 30 years)

In response to question 1) new work, MSPA have projected a footprint for the new turning basin to be approximately 85 acres. Based on an assumption of water depths of -10', and a new turning basin depth of -36' (with a -2' over dredge), we estimate the total cubic yards (cy) for new work will be 4M cy. At this point in time, we do not have an estimate of what the maintenance quantities will be.

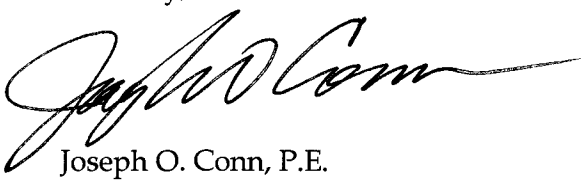
In addition to dredging the new turning basin for the expansion, we will also assume that the new expansion footprint will have to be dredged to remove material unsuitable for construction. Based on an estimated 160 acres for the expansion footprint and the history of dredging and filling for the permitted 84 acre site, we assume that an additional 2M cy of material will be dredged.

Question 2 requests MSPA's DMMP for expansion and maintenance of the turning basin. At this time, a DMMP has not been prepared. MSPA is currently working to have one of its program consultants prepare one. It is anticipated that a draft DMMP will be available by October 1, 2011. Once the draft is prepared and reviewed internally, it will be provided to US Army Corps of Engineers (USACE), Mobile District. It is anticipated a final DMMP will be completed by December 1, 2011.

We will work with USACE in determining the need to designate a new ODMDS once we have the draft DMMP prepared. With this document we will have a better understanding of the amount of dredged material that could be generated with the expansion project and the potential alternatives for disposal.

I hope the information provided answers the questions sufficiently for the time being. Please do not hesitate to call me at 228.865.4300 or by email at jconn@shipmspa.com.

Sincerely,



Joseph O. Conn, P.E.
Director of Port Restoration

MISSISSIPPI DEPARTMENT *of* ARCHIVES AND HISTORY

MDAH

PO Box 571, Jackson, MS 39205-0571
601-576-6850 • Fax 601-576-6975
mdah.state.ms.us
H.T. Holmes, Director

July 25, 2011

Mr. Damon M. Young
Mobile District, Corps of Engineers
Post Office Box 2288
Mobile, Alabama 36628-0001

RE: SAM-2009-01768-DMY; Proposed expanded port facility by the Mississippi State Port Authority, MDAH Project Log #06-135-11, Harrison County

Dear Mr. Young:

We have reviewed your request for a cultural resources assessment, received on June 20, for the above referenced project in accordance with our responsibilities under Section 106 of the National Historic Preservation Act and 36 CFR Part 800. After reviewing the information provided, it is our determination that no cultural resources are likely to be affected. Therefore, we have no objection with the proposed undertaking.

Should there be additional work in connection with the project, or any changes in the scope of work, please let us know in order that we may provide you with appropriate comments in compliance with the above referenced regulations.

If you have any questions, please do not hesitate to contact us at (601) 576-6940.

Sincerely,

Hal Bell
Review and Compliance Assistant

FOR: Greg Williamson
Review and Compliance Officer

RECEIVED
JUL 28 2011
By

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JOSEPH H. PRANGE, JR.,PE

WILLIAM R. BURK, JR., 1912-1986

August 8, 2011

To Whom It May Concern:

The Mississippi State Port Authority (MSPA) is conducting an Environmental Assessment (EA) for the Kansas City Southern Railway (KCSR) Track Upgrade Project from Hattiesburg to Gulfport, MS. The proposed project will upgrade the KCSR line between Palmer's Crossing (milepost 67.5) and the State Port at Gulfport (milepost 0.0).

As part of our assessment of impacts to the natural environment, we have performed the required 8-Step process for floodplains and wetlands. As part of this process, the attached notice will be published in the Hattiesburg American and Sun Herald newspapers on August 10, 2011.

We are providing this information to you as an identified interested party. We invite you to provide your comments by way of the instructions on the attached notice.

Sincerely,
BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS AND ENVIRONMENTAL SCIENTISTS

Ellen W. Soll

Ellen Wilmer Soll, AICP
Planner

cc: Ewing Milam, Mississippi Development Authority
John Webb, Mississippi State Port Authority

RECEIVED
AUG 12 2011
By

2nd (Final) Notice of Activity in a 100-Year Floodplain or Wetland

Date: August 10, 2011

To: All interested Agencies, Groups and Individuals

Mississippi State Port Authority
2510 14th Street
Suite 1450
Gulfport, MS 39501

The Mississippi Development Authority (MDA) has conducted an evaluation as required by Executive Order 11990 – Wetlands Protection and Executive Order 11988, in accordance with HUD regulations at 24 CFR 55.20 Subpart C Procedures for Making Determinations on Floodplain Management, to determine the potential effect that its activity in the floodplain and wetland will have on the human environment for Kansas City Southern Railway Company Track Upgrade Project, Gulfport to Hattiesburg, MS, under the Department of Housing and Urban Development (HUD) Community Development Block Grant (CDBG) Disaster Recovery Grant program.

The project will upgrade 67.5 miles of existing railroad corridor (atop the existing railroad trackbed), from Gulfport, MS to Hattiesburg, MS and construct one new 8,500 foot siding adjacent to the existing railroad trackbed Over the 67.5 miles, the project corridor passes through 15,400 linear feet or 770,000 square feet of floodplain, though most of the work occurs atop the existing railroad trackbed. The proposed project study area included 166 acres of wetlands, though no wetland filling is anticipated to occur. The proposed project(s) utilizes the existing KCSR rail corridor which roughly parallels US 49 in Harrison, Stone and Forrest Counties.

Notice of Early Public Review was published in the Sun Herald and Hattiesburg American on April 1, 2011 and June 17, 2011 and disseminated to other interested parties and regulatory agencies.

The proposed project will provide a more viable alternative mode of transportation for cargo between Gulfport and Hattiesburg, support local and state economic development initiatives, promote energy efficiency and environmental quality and improve safety and quality of life. The project proposes to upgrade the only existing North-South railroad between Gulfport and Hattiesburg. There are no reasonable or prudent alignment alternatives to the proposed track upgrade that will achieve the project's purpose and need. To minimize the potential for impacts to the environment, a recommended preferred alternative for the 8,500 ft siding has been made. No mitigation measures have been identified.

The "no action" alternative was also considered. Under the "no action" alternative, trucks would remain the only reasonably viable option for north-south movement of goods to and from the Port of Gulfport due to the current limitations on operating speeds on the line. This means that trends in air quality and congestion associated with north – south freight movement will continue to decline, particularly in the Gulfport Area, which will reach non-attainment for Ozone in the coming years. Communities surrounding the rail line would not experience the quality of life and safety benefits associated with the project, which includes both quieter rail operation and improved crossings.

Written comments must be received by Mississippi State Port Authority (MSPA) at the following address on or before **August 25, 2011:** Mississippi State Port Authority, 2510 14th Street, Suite 1450, Gulfport, MS 39501 and 228-865-4300. Attention: Mr. John Webb, during the hours of 8:00 AM to 5:00 PM. Comments may also be submitted via email at jwebb@shipmspa.com.

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

August 19, 2011

Coastal Branch
Regulatory Division

SUBJECT: Kansas City Railway Track Upgrade Project-2nd (Final) Notice of Activity in a 100-Year Floodplain or Wetland

Burk-KleinPeter, Inc.
Attention: Ellen Wilmer Soll, AICP
4176 Canal Street
New Orleans, Louisiana 70179

Dear Mr. Webb:

This is in response to your enclosed letter dated August 8, 2011 and received in this office on August 12, 2011. The U.S. Army Corps of Engineers (USACE) is preparing an Environmental Impact Statement (EIS) (SAM-2009-1768-DMY) under the National Environmental Policy Act (NEPA) for the proposed Port of Gulfport Expansion Project. We are considering discussing the portion of the Kansas City Southern Railway Company (KCSR) Track Upgrade project that ties into the Port of Gulfport as a Connected Action to the proposed action. We have submitted a Request for Information (RFI002 on June 30, 2011) to the Mississippi State Port Authority at Gulfport (MSPA) requesting additional information about the track upgrade project so we can determine the appropriate context for addressing this action in accordance with the NEPA.

We request that the KCSR coordinate with the MSPA to provide the information requested regarding the KCSR track upgrade project to assist in the decision of how this action should be addressed in the EIS. Should you wish to discuss this request or have any questions, please do not hesitate to contact me at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

Damon M. Young, P.G.
Team Leader, Coastal Mississippi

Copy Furnished:

Email Only:

Mr. Ryan Hendren, NMFS PRD
Mr. Mark Thompson, NMFS, CHD
Mr. Joseph Conn, MSPA
Mr. Ewing Milam, MDA
Mr. Clay Cromwell, Wildlife Technical
Mrs. Angela Bulger, Atkins

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WILLIAM R. BURK, JR., 1912-1986

August 8, 2011

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We are providing this information to you as an identified interested party. We invite you to provide your comments by way of the instructions on the attached notice.

Sincerely,
BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS AND ENVIRONMENTAL SCIENTISTS

Ellen W. Soll

Ellen Wilmer Soll, AICP
Planner

cc: Ewing Milam, Mississippi Development Authority
John Webb, Mississippi State Port Authority

RECEIVED
AUG 12 2011
By

2nd (Final) Notice of Activity in a 100-Year Floodplain or Wetland

Date: August 10, 2011

To: All interested Agencies, Groups and Individuals

Mississippi State Port Authority
2510 14th Street
Suite 1450
Gulfport, MS 39501

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Written comments must be received by Mississippi State Port Authority (MSPA) at the following address on or before **August 25, 2011:** Mississippi State Port Authority, 2510 14th Street, Suite 1450, Gulfport, MS 39501 and 228-865-4300. Attention: Mr. John Webb, during the hours of 8:00 AM to 5:00 PM. Comments may also be submitted via email at jwebb@shipmspa.com.

ATKINS

Atkins North America, Inc.
6504 Bridge Point Parkway, Suite 200
Austin, Texas 78730
Telephone: +1.512.327.6840
Fax: +1.512.327.2453
www.atkinsglobal.com/northamerica

August 18, 2011

Dear Mr. Hendren:

Atkins (formally PBS&J) has been contracted by the U.S. Army Corps of Engineers (USACE) to write a third party environmental impact statement (EIS) to help them in their decision process for evaluation of a Clean Water Act Section 404/River and Harbors Act Section 10 permit application for the Port of Gulfport Expansion Project (PGEP). As you know, Dr. Stephania Bolden provided input regarding the PGEP based on the information provided at April 6, 2010 meeting. Since this meeting, the footprint of the PGEP has changed. The letter below details some of the key changes that have occurred to the PGEP since the meeting in 2010 and explains the current proposed action. Atkins understands the issues surrounding threatened and endangered species and has a specific technical knowledge about Gulf sturgeon. In addition to the explanation of project changes, this letter also contains responses to Dr. Bolden's comments and some suggested resolutions to fill the data gaps listed in her email dated April 8, 2010.

EXISTING PROJECT AREA

The existing Port of Gulfport (Port) encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway (GIWW) and approximately 7 miles south of Interstate Highway 10. The existing Port includes an East Terminal, Central Support Area, West Terminal, and a Commercial Small Craft Harbor. The harbor basin is divided into the inner harbor (water depth of –32 feet) and the outer harbor (water depth –36 feet). Access to the Port is via the federally maintained ship channel (water depth –36 feet) and a small craft channel (water depth –8 feet). Located to the east of the Port is a recreational small craft harbor, yacht club, city park, and a U.S. Coast Guard Station. A public beach is located to the west of the Port. The northern boundary of the Port is Highway 90.

PGEP FOOTPRINT REDUCTION

The initial joint permit application proposed an expansion of existing project area that included 700 acres of fill and 18.3 million cubic yards (mcy) of material that was proposed to be dredged. The Mississippi State Port Authority's (MSPA) current PGEP would entail filling up to 400 acres of open-water bay bottom in the Mississippi Sound and include 6.5 mcy of material to be dredged for the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities,

dredging and dredged material disposal and infrastructure, and construction of a breakwater of approximately 4,000 linear feet.

Given the sizable reduction in the project footprint we would like to offer the following responses to your comments listed in your email dated April 8, 2010, and suggest a number of study efforts that would be conducted to address data gaps.

ADMINISTRATIVE COMMENTS

1. Comment: Because footprint of port will increase 250%, the project should be called an expansion instead of restoration.
   Response: The project has been renamed the Port of Gulfport Expansion Project (PGEP). The proposed footprint for the expansion has been reduced by approximately 43% from the footprint proposed in the original permit application. Details are provided above.
2. Comment: Direct all requests regarding listed species to David Bernhart, Assistant Regional Administrator for Protected Resources.
   Response: Comment noted; however we are consulting with Ryan Hendron regarding listed species per the agreement between the USACE and National Marine Fisheries Service (NMFS).
3. Comment: Mark Thompson of NMFS Habitat Conservation is contact for essential fish habitat (EFH) and mitigation.
   Response: Comment noted. We are consulting with Mark Thompson.
4. Comment: Suggest utilizing USACE in-house expertise at ERDC to assist Gary Rae, Todd Slack, Doug Clarke, and Phil Kirk.
   Response: Comment noted. Atkins will make contact with various USACE staff listed above regarding the project to get input and data. Information received will be input into the EIS.
5. Comment: NMFS and U.S. Fish and Wildlife Service (USFWS) share management of Gulf sturgeon.
   Response: Comment noted. Atkins is consulting with both USFWS and NMFS to gather data and identify, evaluate, and disclose potential impacts from the proposed PGEP in the EIS and Biological Assessment.

Construction of the breakwater to the east comments

6. Comment: Structure has great potential to impede fish passage.
   Response: Comment noted. The breakwater structures could impede fish passage; however, the breakwater structures have been redesigned to allow more circulation and fish passage compared to previous designs. Atkins is working with the MSPA and their consultant to determine whether a circulation study has been conducted. If not, it will be recommended that circulation modeling be done to determine the impact of the proposed project. These data will be used in the EIS to assess and disclose the impacts of the proposed project to fish passage.
7. Comment: What is height and width (bottom and top) of breakwater structure? Materials?
   Response: This information is not known at this time. Atkins will work with MSPA and their consultant to determine if design will have progressed to the point that this information will be available for consideration in the EIS.

8. Comment: Potential for fish passage over structure via ramp?
   Response: The fish ramp feature was eliminated from the design when the breakwater structures were redesigned.
9. Comment: Potential for staggered wave baffles to allow water circulation and fish movement through breakwater?
   Response: The current breakwater design includes two structures that are staggered to allow water circulation. See Figure 1 attached.

Construction of the nearshore cut/channel:

10. Comment: Structure has potential to trap fish
    Response: The nearshore cut/channel has been eliminated from the project design.
11. What is proposed depth, width, purpose, and materials?
    Response: The nearshore cut/channel has been eliminated from the project design.
    Comment: Ensure flow attracts fish into and out of to cut instead of small craft harbor.
    Response: The nearshore cut/channel has been eliminated from the project design.
12. Comment: Model circulation to ensure water temperature and dissolved oxygen are appropriate (DO 4.5mg/L at benthos during summer months).
    Response: If circulation modeling has not been conducted it will be recommended. These data will be used in the EIS to assess and disclose the impacts of the proposed project to fish passage.

Listed species in project area:

13. Comment: Reference SERO PRD website (http://sero.nmfs.noaa.gov/) to acquire list of species that are in project area.
    Response: The species covered in the T&E section of the EIS include, state-listed species, federally designated candidate species and species of concern within the study area; however, only those species identified by the USFWS and/or NMFS as threatened or endangered are afforded Federal protection under the ESA. See Attachment A for a list of species currently included in the EIS under the T&E section.
14. Comment: Because vessel traffic will increase, include geographic areas that vessels traverse (Gulf of Mexico, South Atlantic Ocean) when considering species that may occur in project area.
    Response: Comment noted. The species included in the EIS are detailed above. However, because the proposed PGEP is not the cause of increased traffic, impact evaluation will focus on the Gulfport Ship Channel, Port expansion area, and potential dredged material placement areas.

Gulf sturgeon - consideration of the listed species and their designated critical habitat

15. Gulf sturgeon from both the Pearl and Pascagoula River are known to utilize the coastal Mississippi area out to and including the barrier islands for migration and foraging. Migration includes both spawning movement when the fish move from marine to freshwater areas as well as longshore coastal movements to forage and move to foraging habitat.
    Response: Comment noted. See discussion below.

16. Comment: No directed study of Gulf sturgeon has been conducted within the project footprint.
    Response: Comment Noted. Below is a proposed study plan that will be used to alleviate data gaps in the project footprint, project area, and study area.
17. Comment: Gulf sturgeon are known to utilize the coastal nearshore waters
    Response: Comment noted. Gulf sturgeon are known to utilize nearshore waters but the extent of usage that has been documented is relatively low as compared to the usage that occurs near the barrier islands. In Ross et al (2009), only 13% of fish were located in the nearshore region throughout the study as opposed to the barrier island region (87%). It is unknown whether this is due to fewer fish occurring in the nearshore region or is an artifact of only 14% of the tracking effort being conducted in this region. This information as well as other studies conducted it the area will be included in the EIS.
18. Comment: The recent Gulf sturgeon 5-year review (attached) identified both the Pearl and Pascagoula River populations of Gulf sturgeon as being of unknown number and viability due to likely impacts from Hurricane Katrina and the lack of subsequent survey.
    Response: Comment noted. This review will be included in the EIS.
19. Comment: Known threats to the Gulf sturgeon include channel improvements and maintenance activities, water quality degradation, contaminant, red tide, and climate change.
    Response: Comment Noted. Known threats to Gulf sturgeon will be evaluated and disclosed in the EIS.
20. Comment: Proposed Project is located within designated Gulf sturgeon critical habitat (Unit 8); unit 8 provides juvenile, sub-adult and adult feeding, resting and passage habitat for Gulf sturgeon from the Pearl and Pascagoula rivers (68 FR 13395).
    Response: Comment noted. Not only does Ross et al. (2009) show lateral movement between the Pearl and Pascagoula rivers, but Dugo et al. (2004) shows a genetic link between Gulf Sturgeon the Pearl Pascagoula rivers. This information and any additional data collected for this project will be disclosed in the EIS. Below is a proposed study plan that will be used to alleviate data gaps in the project footprint, project area, and study area.
21. Comment: The Primary Constituent Elements (PCEs) with Unit 8 are: abundant food items, water quality, sediment quality, and safe and unobstructed migratory pathways (68 FR 13389). The Gulfport channel was not excluded from critical habitat (68 FR 13401). Gulf sturgeon critical habitat rule is attached.
    Response: Comment noted. A discussion of PCEs with Unit 8 will be included in the EIS. The project, as currently proposed, does not include modification to the existing Federal Gulfport Channel. Potential changes in vessel traffic resulting from the proposed PGEP will be evaluated in the EIS. Below is a proposed study plan that will be used to alleviate data gaps in the project footprint, project area, and study area.

Formal Consultation and Study Recommendations

22. Comment: Any package submitted to NMFS for a section 7 ESA consultation request needs to address impacts to both the species and their designated critical habitat. When considering impact to designated critical habitat, assess potential affects to each Primary. Constituent Element (listed above) and discuss how the project may or may not destroy or modify the ecological function of the habitat.

Response: Comment noted. Atkins will use the current available literature as well as the data collected from the study plan detailed below to discuss impacts to both the species and its designated critical habitat. The potential impacts will be addressed with regard to each PCE. Such information will also be used to discuss how the proposed project could potentially impact (including destroy or modify) the ecological function of the habitat.

In your email you reference 50 CFR 402.14 for details about formal consultation and advise the following studies be conducted. In order to address your and other agency concerns about the potential impact to Gulf sturgeon from the proposed project we are proposing a combination of modeling and field data collection efforts. Below is a brief description of each study that will be planned to address the data gaps listed above. Based on results of the proposed efforts below, determination will be made regarding need for additional field study, such as the suggested tagging study.

23. Identify use of project area and nearby habitat by Gulf sturgeon—capture and tag fish from both the Pearl and Pascagoula rivers, place receivers along the shoreline between rivers and port and around port.
    a. We recommend that habitat characterization studies (detailed below) be conducted to determine existence of potential habitat within the PGEP. Impacts are prior to initiating any tagging studies. Following completion of habitat characterization, Atkins and USACE will coordinate with NMFS and USFWS regarding the need for further study. Additional studies could include setting up sonic receivers at various points around the project area to record the movement of previously tagged Gulf sturgeon. This additional data gathering effort would work in conjunction with the fish tagged as part of the NERDA and NOAA studies already underway in the rest of Mississippi Sound. Tagging fish is not anticipated as part of any additional studies for the PGEP.
2. Conduct substrate sampling in project area and nearby habitat to characterize substrate and prey availability.
    a. A substrate and benthos habitat characterization will be conducted over the study area with a higher frequency of samples in the project footprint and few samples radiating out through the project area and study area. Additional habitat characteristics will be gathered to help characterize Gulf sturgeon habitat such as depth (m), bottom temperature (°C), bottom dissolved oxygen (mg/L), salinity (psu), and secchi depth (cm). Dominant and subdominant substrate type will be characterized similar to Ross et al 2009. Benthos will be analyzed and identified to the lowest taxa possible. All the species will be recorded an average percent relative abundance, cumulative relative abundance and percent occurrence will be calculated over the study area.
3. Conduct core sampling to determine potential presence of contaminants within areas to be dredged.
    a. Extensive core sampling will be conducted according to U.S. Environmental Protection Agency (EPA) standards within the dredging prism to test for contaminants. Water, sediment and elutriate analysis will be conducted for any parameters that were exceeded in the 2004 USACE dredging maintenance testing. Per EPA guidance it is expected that each core sample will need to be parceled out into several sub samples in order to

delineate any area of contamination. Additionally, one core sample will likely be needed every 500 linear feet to accurately describe the dredging prism.
Upon identification of dredged material placement areas, additional toxicity sampling will be conducted as appropriate.

4. Perform analysis to understand circulation patterns and sediment transport within the project area post-construction.
    a. A consultation will be conducted to determine the modeling effort that will best satisfy the circulation and sediment transport data gap. The resolution of models will be highly dependent on the existing grids and the tide and weather data available to be entered into the model. Additional spreadsheet models may need to be run to understand the relationship between the circulation and sediment transport, and key water quality characteristics such as dissolved oxygen.

Upon approval of a sampling scope of work by USACE, it will be sent to NMFS for review and discussion. Please contact me at (512)342-3388 or angela.bulger@atkinsglobal.com or Damon Young at USACE if you have any questions about any of the responses to comment or the various studies that are proposed to be conducted.

Respectfully,



Angela Bulger, Project Manager

Attachments

Cc. Dr. Stephania Bolden, NMFS
Mark Thompson, NMFS
Damon Young, USACE

References

Dugo, M.A., B.R. Kreiser, S.T. Ross, W.T. Slack, R.J. Heise, and B.R. Bowen. 2004. Conservation and management implications of fine scale genetic structure of Gulf sturgeon in the Pascagoula River, Mississippi. Journal of Applied Ichthyology 20: 243-251.

Ross, S.T., T.E. Slack, R.J. Heise, M.A. Dugo, H Rogillio, BR Bowen, P. Mickle, and R.W. Heard. 2009. Estuarine and coastal habitat use of Gulf sturgeon (Acipenser oxyrinchus desotio) in the North-Central Gulf of Mexico. Estuaries and Coasts 32: 360-374.





Project Area

Project Features

N

0 3,000 Feet

Figure X.XX

Port of Gulfport Expansion Project

Proposed Project Features and Project Area

Prepared By: 13029	Scale: 1" = 3000'
Job No.: 100018536	Date: June 27, 2011

File: N:\Clients\M_N\Mississippi_State_Port_Authority\100018536\geospatial\Figs_EIS\Proposed_Improvements_vr3.mxd

Attachment A. Threatened and Endangered Wildlife Species of Possible Occurrence in Hancock, Harrison, and Jackson Counties, Mississippi[1]

Common Name[2]	Scientific Name[2]	Federal Status[3]	State Status[3]
BIRDS			
Red-cockaded woodpecker	*Picoides borealis*	E	E
Mississippi sandhill crane	*Grus canadensis pulla*	ECH	E
Piping plover[4]	*Charadrius melodus*	TCH	E
Bald eagle[5]	*Haliaeetus leucocephalus*		E
Brown pelican	*Pelecanus occidentalis*		E
Bewick's wren	*Thryomanes bewickii*		E
Peregrine falcon	*Falco peregrinus*		E
MAMMALS			
West Indian manatee	*Trichechus manatus*	E	E
Louisiana black bear	*Ursus americanus luteolus*	T	E
Blue whale	*Balaenoptera musculus*	E	
Fin whale	*Balaenoptera physalus*	E	
Humpback whale	*Megaptera novaeangliae*	E	
Sei whale	*Balaenoptera borealis*	E	
Sperm whale	*Physeter macrocephalus*	E	
AMPHIBIANS			
Mississippi gopher frog	*Rana capito sevosa* (syn. *Lithobates sevosus)*	E	E
One-toed amphiuma	*Amphiuma pholeter*		E
REPTILES			
Alabama red-bellied turtle	*Psuedemys alabamensis*	E	E
Kemp's ridley	*Lepidochelys kempii*	E	E
Leatherback sea turtle	*Dermochelys comacea*	E	E
Gopher tortoise	*Gopherus polyphemus*	T	E
Green turtle	*Chelonia mydas*	T	E
Loggerhead turtle	*Caretta caretta*	T	E
Eastern indigo snake	*Drymarchon corais couperi (* syn. *Drymarchon couperi)*	T	E
Yellow-blotched map turtle	*Graptemys flavimaculata*	T	E
Black pine snake	*Pituophis melanoleucus* ssp. *lodingi*	C	E
Rainbow snake	*Farancia erytrogramma*		E
Southern hognose snake	*Heterodon simus*	SOC	E
FISHES			
Gulf sturgeon	*Acipenser oxyrhynchus desotoi*	TCH	E
Alabama shad	*Alosa alabamae*	SOC	SOC
Dusky shark	*Carcharhinus obscurus*	SOC	
Night shark	*Carcharhinus signatus*	SOC	
Sand tiger shark	*Odontaspis taurus*	SOC	
Speckled hind	*Epinephelus drummondhayi*	SOC	
Warsaw grouper	*Epinephelus nigritus*	SOC	
Saltwater topminnow	*Fundulus jenkinsi*		SOC
Crystal darter	*Crystallaria asprella*		E
Ironcolor shiner	*Notropis chalybaeus*		E
CORAL			
Ivory tree coral	*Oculina varicose*	SOC	
PLANTS			
Louisiana quillwort	*Isoetes louisianensis*	E	

[1] According to USFWS (2010a); MNHP (2011).

[2]Nomenclature and taxonomic orders follow USFWS (2011a, 2011b, 2011c, 2011d, 2011e, 2011f), Integrated Taxonomic Information System (ITIS, 2011); MNMS (2011).

[3]E = Endangered; T = Threatened; C = Candidate; SOC = Species of Concern; ECH or TCH = Listed with Critical Habitat;

[4]Critical Habitat for Piping Plover occurs on barrier islands and in certain areas of coastal counties.

[5]Although delisted, nesting bald eagles and their nest trees are protected by law under the Bald and Golden Eagle Act. As population numbers increase, eagles may be found throughout the state.

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

August 19, 2011

Coastal Branch
Regulatory Division

SUBJECT: Kansas City Railway Track Upgrade Project-2nd (Final) Notice of Activity in a 100-Year Floodplain or Wetland

Burk-KleinPeter, Inc.
Attention: Ellen Wilmer Soll, AICP
4176 Canal Street
New Orleans, Louisiana 70179

Dear Mr. Webb:

This is in response to your enclosed letter dated August 8, 2011 and received in this office on August 12, 2011. The U.S. Army Corps of Engineers (USACE) is preparing an Environmental Impact Statement (EIS) (SAM-2009-1768-DMY) under the National Environmental Policy Act (NEPA) for the proposed Port of Gulfport Expansion Project. We are considering discussing the portion of the Kansas City Southern Railway Company (KCSR) Track Upgrade project that ties into the Port of Gulfport as a Connected Action to the proposed action. We have submitted a Request for Information (RFI002 on June 30, 2011) to the Mississippi State Port Authority at Gulfport (MSPA) requesting additional information about the track upgrade project so we can determine the appropriate context for addressing this action in accordance with the NEPA.

We request that the KCSR coordinate with the MSPA to provide the information requested regarding the KCSR track upgrade project to assist in the decision of how this action should be addressed in the EIS. Should you wish to discuss this request or have any questions, please do not hesitate to contact me at 251.694.3781 or by electronic mail at damon.m.young@usace.army.mil.

Sincerely,

Damon M. Young, P.G.
Team Leader, Coastal Mississippi

Copy Furnished:

Email Only:

Mr. Ryan Hendren, NMFS PRD
Mr. Mark Thompson, NMFS, CHD
Mr. Joseph Conn, MSPA
Mr. Ewing Milam, MDA
Mr. Clay Cromwell, Wildlife Technical
Mrs. Angela Bulger, Atkins

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August 8, 2011

To Whom It May Concern:

The Mississippi State Port Authority (MSPA) is conducting an Environmental Assessment (EA) for the Kansas City Southern Railway (KCSR) Track Upgrade Project from Hattiesburg to Gulfport, MS. The proposed project will upgrade the KCSR line between Palmer's Crossing (milepost 67.5) and the State Port at Gulfport (milepost 0.0).

As part of our assessment of impacts to the natural environment, we have performed the required 8-Step process for floodplains and wetlands. As part of this process, the attached notice will be published in the Hattiesburg American and Sun Herald newspapers on August 10, 2011.

We are providing this information to you as an identified interested party. We invite you to provide your comments by way of the instructions on the attached notice.

Sincerely,
BURK-KLEINPETER, INC.
ENGINEERS, ARCHITECTS, PLANNERS AND ENVIRONMENTAL SCIENTISTS

Ellen W. Soll

Ellen Wilmer Soll, AICP
Planner

cc: Ewing Milam, Mississippi Development Authority
John Webb, Mississippi State Port Authority

RECEIVED
AUG 12 2011
By

2nd (Final) Notice of Activity in a 100-Year Floodplain or Wetland

Date: August 10, 2011

To: All interested Agencies, Groups and Individuals

Mississippi State Port Authority
2510 14th Street
Suite 1450
Gulfport, MS 39501

The Mississippi Development Authority (MDA) has conducted an evaluation as required by Executive Order 11990 – Wetlands Protection and Executive Order 11988, in accordance with HUD regulations at 24 CFR 55.20 Subpart C Procedures for Making Determinations on Floodplain Management, to determine the potential effect that its activity in the floodplain and wetland will have on the human environment for Kansas City Southern Railway Company Track Upgrade Project, Gulfport to Hattiesburg, MS, under the Department of Housing and Urban Development (HUD) Community Development Block Grant (CDBG) Disaster Recovery Grant program.

The project will upgrade 67.5 miles of existing railroad corridor (atop the existing railroad trackbed), from Gulfport, MS to Hattiesburg, MS and construct one new 8,500 foot siding adjacent to the existing railroad trackbed Over the 67.5 miles, the project corridor passes through 15,400 linear feet or 770,000 square feet of floodplain, though most of the work occurs atop the existing railroad trackbed. The proposed project study area included 166 acres of wetlands, though no wetland filling is anticipated to occur. The proposed project(s) utilizes the existing KCSR rail corridor which roughly parallels US 49 in Harrison, Stone and Forrest Counties.

Notice of Early Public Review was published in the Sun Herald and Hattiesburg American on April 1, 2011 and June 17, 2011 and disseminated to other interested parties and regulatory agencies.

The proposed project will provide a more viable alternative mode of transportation for cargo between Gulfport and Hattiesburg, support local and state economic development initiatives, promote energy efficiency and environmental quality and improve safety and quality of life. The project proposes to upgrade the only existing North-South railroad between Gulfport and Hattiesburg. There are no reasonable or prudent alignment alternatives to the proposed track upgrade that will achieve the project's purpose and need. To minimize the potential for impacts to the environment, a recommended preferred alternative for the 8,500 ft siding has been made. No mitigation measures have been identified.

The "no action" alternative was also considered. Under the "no action" alternative, trucks would remain the only reasonably viable option for north-south movement of goods to and from the Port of Gulfport due to the current limitations on operating speeds on the line. This means that trends in air quality and congestion associated with north – south freight movement will continue to decline, particularly in the Gulfport Area, which will reach non-attainment for Ozone in the coming years. Communities surrounding the rail line would not experience the quality of life and safety benefits associated with the project, which includes both quieter rail operation and improved crossings.

Written comments must be received by Mississippi State Port Authority (MSPA) at the following address on or before **August 25, 2011:** Mississippi State Port Authority, 2510 14th Street, Suite 1450, Gulfport, MS 39501 and 228-865-4300. Attention: Mr. John Webb, during the hours of 8:00 AM to 5:00 PM. Comments may also be submitted via email at jwebb@shipmspa.com.

BALCH
& BINGHAM LLP

Ben. H. Stone
(228) 214-0402

(888) 201-0157 (direct fax)
bstone@balch.com

September 28, 2011

Damon M. Young, P.G.
Team Leader, Coastal Mississippi
Department of the Army
Mobile District, Corps of Engineers
P. O. Box 2288
Mobile, AL 36628-0001

Re: *Department of the Army Permit Application Number SAM-2009-01768-DMY, Response of the Mississippi State Port Authority-Formal Request for Information (MSPAEIS-2011-002)*

Dear Mr. Young:

As counsel for the Mississippi State Port Authority at Gulfport ("Port Authority"), we are providing this letter in response to the formal request for information of the U.S. Army Corps of Engineers/Mobile District ("USACE") dated June 30, 2011. The Port Authority's response to the information requested by the USACE is as follows:

a. Capacity limits for the MDOT Connector Road, as currently designed;

Please refer to MDOT FONSI document in support of Corps permit SAM 2007-1082 MFM.

b. Projected truck and employee traffic volumes at full expansion build-out;

At full expansion of approximately four (4) million twenty-foot equivalent units ("TEU") annually, it is projected that two (2) million TEU, or fifty percent (50%) of the throughput, will pass through the Port of Gulfport ("Port") via truck. This equates to approximately 4,700 trucks per weekday based on 250 weekdays.[1]

Pursuant to the Projected Economic Impacts from Container Terminal Development at Gulfport provided by TranSystems, approximately 5,479 direct jobs will exist at one (1) million TEU of annual throughput at the Port.[2] On average, 4.1 direct jobs are created per 1,000 TEU of throughput.[3] At the projected capacity of four (4) million TEU at full expansion, approximately

[1] *See* April 2010 Conceptual Planning for Roadway and Rail Access by Neel Schaffer, p. 2-2.

[2] *See* TranSystems June 2011 Update, Projected Economic Impacts from Container Terminal Development at Gulfport, p. 11.

[3] *See* TranSystems June 2011 Update, Projected Economic Impacts from Container Terminal Development at Gulfport, p. 7.

16,400 direct jobs will exist based on this average. The foregoing does not include induced and indirect jobs projected as a result of the proposed Port expansion.

c. Capacity limits along the existing KCS rail line;

The corridor begins at Mile Post ("MP") 0.0, north of U.S. Highway 90 near the Port and ends at MP 67.5, near Barkley Road in Hattiesburg, Mississippi where the track continues under the ownership of the Canadian National Railroad.

The current maximum weight on the rail line is 263,000 pounds gross rail load. Speeds on the line are currently limited to 10 mph.[4] At present, the line is capable of single-stack intermodal operations and it takes approximately 8.5 hours for a train to travel from the Port to Hattiesburg.[5] The average rail operation on the line is presently six (6) trains per week between the Port and Hattiesburg.[6] The trains average 2,940 feet in length and are made up of a variety of car types.[7]

d. Projected capacity limits along the KCS rail line post-improvement;

The Project will upgrade the entire line segment to handle 286,000 pound rail cars and double stack intermodal container traffic at operating speeds of up to 49 mph over most of the line (north of Interstate 10 to Hattiesburg) following its completion.[8] Completion of the Project will result in an average total transit time of approximately 3.75 hours, reducing transit times by approximately 4.75 hours.[9] The maximum projected operational length of a train following the improvements is 3,900 feet.[10]

---

[4] *See* Kansas City Southern Railway Environmental Assessment prepared by Burk-Kleinpeter, Inc., Working Draft dated June 24, 2011, p. 7.

[5] *See* Rail Improvements Project Agreement between MSPA and KCSR – Phase I, p. 2.

[6] *See* Kansas City Southern Railway Environmental Assessment prepared by Burk-Kleinpeter, Inc., Working Draft dated June 24, 2011, p. 7.

[7] *See* Kansas City Southern Railway Environmental Assessment prepared by Burk-Kleinpeter, Inc., Working Draft dated June 24, 2011, p. 7.

[8] *See* Rail Improvements Project Agreement between MSPA and KCSR – Phase I, pp. 2-3.

[9] *See* Rail Improvements Project Agreement between MSPA and KCSR – Phase I, pp. 2-3.

[10] *See* Kansas City Southern Railway Environmental Assessment prepared by Burk-Kleinpeter, Inc., Working Draft dated June 24, 2011, Appendix C, Section C-13 – Traffic Study Technical Memorandum, p. 5.

e. Projected volumes of rail container traffic expected at full expansion build-out.

At full expansion of approximately four (4) million TEUs annually, it is projected that fifty percent (50%), or two (2) million TEUs, will be transported by rail.[11]

We trust that the foregoing information sufficiently responds to the request of the USACE. Should you need any additional information or wish to discuss anything presented in this response in more detail, please do not hesitate to contact me at (228) 214-0402 or by email at bstone@balch.com.

Very truly yours,

BALCH & BINGHAM LLP

Ben H. Stone,
General Counsel for the
Mississippi State Port Authority at Gulfport

BHS:mbp

[11] *See* April 2010 Conceptual Planning for Roadway and Rail Access by Neel Schaffer, p. 2-6.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
(727) 824-5312; FAX (727) 824-5309
http://sero.nmfs.noaa.gov

F/SER31:RGH

NOV 15 2011

Ms. Angela Bulger
Project Manager
Atkins North America, Inc.
6504 Bridge Point Parkway, Suite 200
Austin, Texas 78730

RE: Port of Gulfport Expansion Project EIS-Response to Comments

Dear Ms. Bulger:

NOAA's National Marine Fisheries Service (NMFS) has received your letter dated August 18, 2011, in response to comments provided by Dr. Stephania Bolden on April 8, 2010, for the proposed Port of Gulfport Expansion Project (PGEP), Harrison County, Mississippi. Information on the proposed PGEP and suggested actions for moving forward provided by your office were detailed in this letter. NMFS has reviewed your comments and generally agrees with the responses made with the exception of the comments listed below.

14. Comment: Because vessel traffic will increase, include geographic areas that vessels traverse (Gulf of Mexico, South Atlantic Ocean) when considering species that may occur in project area.
Response: Comment noted. The species included in the EIS are detailed above. However, because the proposed PGEP is not the cause of increased traffic, impact evaluation will focus on the Gulfport Ship Channel, Port expansion area, and potential dredged material placement areas.

NMFS disagrees that the PGEP will not increase traffic. The current Port is approximately 128 acres and accommodates 10 vessels from 525 to 750 feet long. In the preliminary draft of the PGEP EIS it states that "*the number of vessel calls declined from a range of 352 to 384 vessels per year between 2002 and 2005 to 225 vessels in 2006 (MSPA, 2006). Once the restoration of the West Pier is completed, the Port will be 288 acres and will offer three active terminals, with configuration possible for a fourth. The restoration includes infrastructure for a future fourth terminal on the south end of the elevated West Pier, configured to allow a high volume container operation if desired.*" It appears that the purpose of this expanded capacity, coupled with the proposed road and rail facility improvements is to increase the number of vessel calls to the Port of Gulfport over the 2005 amounts.

NMFS believes that the PGEP may have an effect on listed marine mammal species found in the Gulf of Mexico and therefore should be considered in the EIS. The expansion of the port and the

increased vessel traffic that would result from this action could increase the probability of collisions between vessels and sperm whales. Vessels have the potential to affect sperm whales in deeper, pelagic waters (>200 m) where sperm whales are typically found in the GOM. Information on anticipated vessel ports of origin, number of trips per year, vessel size (i.e., length, breadth, draft, etc.), and routes will be needed to analyze the effects of vessels on marine mammals. Per our conversation on August 26, 2011, we discussed the current project designs which will not require deepening of the harbor since the Port of Gulfport will not be designed to accommodate the New Panamax vessel dimensions. However, even though the larger size vessel will not be a factor, consideration of marine species and potential vessel related impacts from the proposed expansion remains an issue of concern.

17. Comment: Gulf sturgeon are known to utilize the coastal nearshore waters.
Response: Comment noted. Gulf sturgeon are known to utilize nearshore waters but the extent of usage that has been documented is relatively low as compared to the usage that occurs near the barrier islands. In Ross et al (2009), only 13% of fish were located in the nearshore region throughout the study as opposed to the barrier island region (87%). It is unknown whether this is due to fewer fish occurring in the nearshore region or is an artifact of only 14% of the tracking effort being conducted in this region. This information as well as other studies conducted in the area will be included in the EIS.

Recent Gulf sturgeon monitoring data (11/2010 – 2/2011) from NOAA and Natural Resource Damage Assessment (NRDA) stationary acoustic receivers located throughout (nearshore and barrier island) Gulf sturgeon critical habitat Unit 8 have recorded at least 12 tagged Gulf sturgeon located predominantly in the nearshore region. Tagged sturgeon ranged between 53.5 cm juvenile (< 100 cm TL) and sub-adult/adult (>100 cm TL) 158 cm TL. Although this data set is over a short time period, the data shows a much higher utilization of the nearshore habitat than barrier island habitat.

23. Comment: Identify use of project area and nearby habitat by Gulf sturgeon-capture and tag fish from both the Pearl and Pascagoula rivers, place receivers along the shoreline between rivers and port and around port.

Response: a. We recommend that habitat characterization studies be conducted to determine existence of potential habitat within the PGEP. Impacts are prior to initiating any tagging studies. Following completion of habitat characterization, Atkins and USACE will coordinate with NMFS and USFWS regarding the need for further study. Additional studies could include setting up sonic receivers at various points around the project area to record the movement of previously tagged Gulf sturgeon. This additional data gathering effort would work in conjunction with the fish tagged as part of the NERDA and NOAA studies already underway in the rest of Mississippi Sound. Tagging fish is not anticipated as part of any additional studies for the PGEP.

Per our conversation on August 26, 2011, we strongly recommend that the applicant/agent monitor the nearshore area for Gulf sturgeon using stationary acoustic receiver arrays, regardless of determination of suitable habitat. Based on other studies done in the area, arrays should be put out to catch the potential migration. These arrays should be consistent with the ongoing

studies. Staff from your office will need to coordinate with Mark Peterson (University of Southern Mississippi) and Todd Slack (U.S. Army Engineer Research and Development Center) to determine a means by which we can ensure the arrays would be consistent with tags being used for the other studies and to discuss number and positioning of arrays. The goal of this monitoring is to determine whether or not Gulf sturgeon are migrating through the proposed project area.

If you have any questions, please contact Ryan Hendren at (727) 551-5610 or by e-mail at Ryan.Hendren@noaa.gov.

Sincerely,

David M. Bernhart
Assistant Regional Administrator
for Protected Resources

cc: Mark Thompson, NMFS
Damon Young, USACE

File: 1514-22.F.6
Ref: F/SER/2010/01808

U.S. Department of Homeland Security

United States Coast Guard

Commander
U.S. Coast Guard Sector Mobile

1500 15th Street
Mobile, AL 36615-1300
Staff Symbol: spw
Phone: (251) 441-5940
Fax: (251) 441-6169

16610
June 20, 2012

District Engineer
U.S. Army Corps of Engineers, Mobile District
Regulatory Division; Coastal
P.O. Box 2288
Mobile, AL 36628-0001

Dear Mr. Young:

This letter is in response to Public Notice No. SAM-2012-00632-DMY, dated April 30, 2012, Dept. Coastal Sciences, USM – Proposal to install 19 buoys with attached Vemco VR2W receivers around the proposed new footprint of the restored and expanded Port of Gulfport, Gulfport, MS.

In accordance with the June 2, 2000 Memorandum of Understanding between the Coast Guard and Army Corps of Engineers, my staff conducted an evaluation of the proposed site on June 5, 2012. After conducting an initial risk assessment of the proposal, we found that the proposed project indicates a low level of risk with regard to waterway safety. Therefore, I have no objections with this project and request that the following special condition statement is included in any forthcoming USACOE Permit approvals or directives related to Public Notice No. SAM-2012-00632-DMY, dated April 30, 2012.

"In order for the Coast Guard to give proper notice to the maritime community; the permitted owners, contractors, or responsible party(s) shall contact Coast Guard Sector Mobile Waterways Management Branch (spw), 1500 15th Street, Mobile, AL 36615 at (251) 441-5684 or (251) 441-5720, 60 days prior to performing the proposed action and provide proposed position and location of each buoy. The permitted owners, contractors, or responsible party(s) must also receive a U.S. Coast Guard Private Aids to Navigation marking determination. At no later than 30 days prior to the installation of any buoys, you are required to contact the Eighth Coast Guard District (dpw), 500 Poydras St. Suite 1230, New Orleans, LA 70130, (504)671-2328 or via email to: D8oanPATON@uscg.mil. For general information related to Private Aids to Navigation please visit the Eighth CG District web site at: http://www.uscg.mil/d8/waterways/PATON.Home.asp."

If you have any further questions concerning this matter or the applicant wishes to meet directly with a representative of the Captain of the Port, please contact the Waterways Branch at (251) 441-5940.

Sincerely,

L. J. CARSON
Lieutenant, U. S. Coast Guard
Waterways Division Chief
By direction

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

REPLY TO
ATTENTION OF

January 23, 2013

Coastal Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-01768-DMY, Mississippi State Port Authority-Formal Request for Information (MSPAEIS-2011-003)

Mississippi State Port Authority
Attention: Mr. Joe Conn
Director of Port Restoration
2510 14th Street, Suite 880
Gulfport, Mississippi 39501

Dear Mr. Conn:

The U.S. Army Corps of Engineers, Mobile District is formally requesting information to support preparation of the Environmental Impact Statement (EIS) for the Mississippi State Port Authority's proposed Port of Gulfport Expansion Project. The following information is needed to continue our review of the air and traffic impact analyses:

a. **Assumption Information to Complete Air Emissions/Greenhouse Gas Analysis**: It is understood the project is in preliminary design stages and that this level of detailed information may not be available at this time. Additionally, we recognize that preliminary information regarding equipment lists and bulk fuel estimates were been provided. However, to complete the modeling appropriately, estimates or assumptions for the following are needed.

Construction

- Construction schedule, broken out by month and year, showing the anticipated start and completion of construction and showing the timelines for the sequence of each activity; e.g., what year/month does the dredging start; what year month is it completed, etc.
- Hours of operation for each piece of equipment broken out by year/month
- Info on equipment rating, engine horsepower
- Type of fuel used for each type of equipment
- For dredges model/type of dredge, rated horsepower of engines (primary and auxiliary), hours of operation for each engine broken out by year/month; mobilization/demobilization hours of operation and year/month
- Number of tugboats, crew boats, shrimp boats; rated horsepower of engines (primary and auxiliary) and hours of operation for each broken out by year/month

Operation

- Anticipated hours of operation for each piece of equipment per year
- Equipment rating, engine horsepower
- Type of fuel used for each type of equipment

Fuel Consumption

- Fuel usage broken out by month/year on a timeline
- Breakdown of fuel by primary and auxiliary engine
- Breakdown of fuel for tugs, crew boats and other vessels

b. **Information for Assessment of Ship Traffic**: Loading/unloading rate capacities or any other information regarding landside cargo movement capabilities (at-the-dock and moving cargo off-port) for the two EIS alternatives (Medium and Maximum Efficiency) to aid our understanding of loading/unloading times and movement of cargo on and off the Port.

The requested information is needed to continue the evaluation of potential resource impacts related to the proposed Port of Gulfport Expansion Project. Please provide a formal response within 60 days of receipt of this letter.

Should you wish to discuss this request or have any questions, please do not hesitate to contact me at (251) 694-3781 or by email at damon.m.young@usace.army.mil.

Sincerely,

Damon M. Young, P.G.
Team Leader, Coastal Mississippi
Regulatory Division

25 Jan 13
Young, D.
Schauseh, M.
File

Vitale, Lisa D

From: Bulger, Angela G
Sent: Thursday, October 17, 2013 5:29 PM
To: Vitale, Lisa D; Fitzgibbons, Kimberly D
Subject: FW: FW: Port of Gulfport - Mobile

Angela G. Bulger
Environmental Sciences and Planning

ATKINS

6504 Bridge Point Parkway, Suite 200, Austin, Texas 78730 | Tel: +1 (512) 342 3388 | Fax: +1 (512) 327 2453 | Cell: +1 (512) 461 7900 |
Email: angela.bulger@atkinsglobal.com | Web: www.atkinsglobal.com/northamerica www.atkinsglobal.com

---

From: Elizabeth.Calvit@CH2M.com [mailto:Elizabeth.Calvit@CH2M.com]
Sent: Thursday, October 17, 2013 1:47 PM
To: Bulger, Angela G; damon.young@usace.army.mil
Cc: GulfPort@CH2M.com
Subject: FW: FW: Port of Gulfport - Mobile

From: NDB E-Mailbox [mailto:ocs.ndb@noaa.gov]
Sent: Thursday, October 17, 2013 11:09 AM
To: Calvit, Elizabeth/GLF
Cc: CH2MHILL GulfPort; jconn@shipmspa.com; Elledge, Lon/GLF; Kate Fensterstock
Subject: Re: FW: Port of Gulfport - Mobile

Ms. Calvit,

Thank you for responding to NOAA's inquiry. I've updated our permits tracking database with the information you provided.

Please remember to submit any future project updates or as-builts you have to NOAA. If it's convenient for you, this e-mail address is a great way to do so as long as you include the permit number. My branch periodically mails automated permit inquiries, so if we haven't received the final project as-builts at the time of the next mailing, your office will receive another inquiry.

Thanks again, and enjoy your day.

Diane Melançon, Cartographer
Marine Chart Division
NOAA

On 10/1/2013 9:33 PM, Elizabeth.Calvit@CH2M.com wrote:

> Good afternoon,
> We received this letter regarding a permit application we submitted to USACE Mobile District for an expansion project. We are in the process of preparing an EIS as part of the permit process. The EIS is expected to be complete in April 2015. Only after that time will we potentially have a permit. Please make a note of this in your files. There will be no changes to the turning basin, dredging activities or fill until after the permit is signed.
>
> Thanks
> Elizabeth Calvit
>
> Elizabeth Calvit

CH2M HILL
Environmental/Permitting & Operations Lead
Port of Gulfport Project
2510 14th Street, Suite 1013
Gulfport, MS 39501
228.822.2090
cell 318.308.0971
ecalvit@ch2m.com

CH2M HILL CONFIDENTIALITY NOTICE: This e-mail and any attachments are privileged and confidential. It is intended solely for the addressee. Any unauthorized disclosure, reproduction, distribution, or the taking of any action in reliance upon the contents of this information is prohibited. If you have received this e-mail in error, please notify the sender immediately and delete the message and all attachments.

From: Joe Conn [mailto:jconn@shipmspa.com]
Sent: Monday, September 30, 2013 3:38 PM
To: Calvit, Elizabeth/GLF
Subject: FW: Attached Image

Joe O. Conn, P.E.
Director of Port Restoration
MSPA @ Gulfport
office: (228)-865-4300
cell: (228)-323-0301

"Import, Export, Gulfport, Your Port"

From: drdcopier@shipmspa.com [mailto:drdcopier@shipmspa.com]
Sent: Monday, September 30, 2013 3:37 PM
To: Joe Conn
Subject: Attached Image

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

April 22, 2015

REPLY TO
ATTENTION OF

South Mississippi Branch
Regulatory Division

SUBJECT: Department of the Army Permit Application Number SAM-2009-01768-DMY, Mississippi State Port Authority

U.S. Environmental Protection
Agency, Region 4
Attention: Mr. Heinz Mueller
Sam Nunn Atlanta Federal Center
61 Forsyth Street Southwest
Atlanta, Georgia 30303-8960

Dear Mr. Mueller:

The U.S. Army Corps of Engineers (USACE), Mobile District is preparing an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500-1 508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). The MSPA has filed a permit application with USACE for impacts to jurisdictional waters of the United States under Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, and Section 103 of the Marine Protection, Research, and Sanctuaries Act.

The project proposed by the MSPA is the expansion of existing facilities and the expansion of the accompanying navigational harbor. The overall project purpose is to increase throughput capabilities at the Port beyond 1.0 million TEUs and stimulate the local, regional, and state economy by creating direct, indirect, and induced jobs.

Potential impacts associated with the proposed project include filling 202 acres (ac) of the Mississippi Sound, removal of approximately 3.7 million cubic yards (mcy) of material by dredging for the placement of 202 ac of proposed fill on more suitable foundation; and dredging of another 3.7 mcy of material south of the existing turning basin to expand the capacity of the turning basin, as well as the possible beneficial use and placement of the dredged material. Disposal alternatives being considered include placement of a portion of the dredged material within the U.S. Environmental Protection Agency (EPA) designated Pascagoula Ocean Dredged Material Disposal Site (ODMDS), and placement of a portion of the dredged material in the proposed Biloxi Marsh Complex site located west and south of the Port.

The USACE is collecting data for the preparation of an EIS. The level of detail for our assessment will be as necessary to describe existing conditions, as well as provide analysis of future conditions due to project impacts. The intent of this letter is to request specific information on resources under your purview that should be addressed for the project, that you may suggest.

As discussed in 40 CFR 1501.6, agencies with jurisdiction by law or with special expertise with respect to environmental issues to be addressed in the EIS may be cooperating agencies for the EIS. Please reply at your earliest convenience to indicate whether your agency or any of its services, bureaus, or offices has interest in participating as a cooperating agency on this EIS. Should you wish to discuss the EIS or have any questions, please call Mr. Philip Hegji at (251) 690-3222 or email at philip.a.hegji@usace.army.mil.

Sincerely,

Munther N. Sahawneh
Chief, Mississippi Branch
Regulatory Division

Hegji/sd/PAH
4/20/15

CH/RD-Miss

File

Sahawneh
PD-D

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

May 4, 2015

Mr. Munther N. Sahawneh
Chief, Mississippi Branch
Regulatory Division
U.S. Army Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628-0001

Subject: EPA Cooperating Agency Request for Gulfport Harbor Expansion Environmental Impact Statement (EIS). Gulfport, Mississippi

Dear Mr. Sahawneh:

The U.S. Environmental Protection Agency (EPA), Region 4, received your letter dated April 12, 2010, offering this agency an opportunity to become a cooperating agency for the subject EIS. The U.S. Army Corps of Engineers (USACE), Mobile District is preparing an Environmental Impact Statement (EIS) for the Mississippi State Port Authority for the expansion of existing facilities and the navigational harbor at Gulfport. The purpose of the project is to increase the throughput capabilities at the Port and stimulate the economy by creating jobs. The project is also intended to improve safety and evacuation during coastal emergencies.

Based on the information provided, EPA understands that potential project impacts include filling 202 acres of the Mississippi Sound, removing approximately 3.7 million cubic yards (mcy) of material by dredging for the placement of 202 acres of proposed fill on more suitable foundation; and dredging another 3.7 mcy of material south of the existing turning basin to expand the capacity of the turning basin, as well as the possible beneficial use and placement of the dredged material.

In addition, there are various disposal alternatives being considered including placement of a portion of the dredged material within the U.S. Environmental Protection Agency (EPA) designated Pascagoula Ocean Dredged Material Disposal Site (ODMDS), and placement of a portion of the dredged material in the proposed Biloxi Marsh Complex site located west and south of the Port.

EPA accepts the U.S. Army Corps of Engineers (USACE) Mobile District's offer to be a cooperating agency for the proposed EIS. However, it should be noted that our status as a cooperating agency has no effect on our review responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) or Section 309 of the Clean Air Act, and being a cooperating agency does not imply that EPA will necessarily concur with all aspects of the EIS.

MAY 12 2015

EPA agrees to provide preliminary agency comments related to water, air resources and environmental justice issues. The USACE should ensure that information relevant for providing comments will be provided to the agency in a timely manner and with a level of detail sufficient to allow for meaningful feedback. EPA also agrees to participate in meetings and teleconferences to discuss important milestones, as resources allow.

We appreciate your coordination with us and look forward to reviewing the NEPA document for the proposed project. If you have any further questions or concerns, you may contact Ntale Kajumba from the NEPA Program Office at (404) 562-9620 or kajumba.ntale@epa.gov.

Sincerely,

Heinz J. Mueller, Chief
NEPA Program Office
Resource Conservation and Restoration Division

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, AL 36628-0001

October 9, 2015

REPLY TO
ATTENTION OF

South Mississippi Branch
Regulatory Division

SUBJECT: Department of the Army Application Number SAM-2009-01768-DMY, Port of Gulfport Expansion Project

National Oceanic and Atmospheric
Administration
National Marine Fisheries Service
Southeast Regional Office
Protected Resources Division
263 13th Avenue South
St. Petersburg, Florida 33701-5505

Gentlemen:

The Port of Gulfport is requesting authorization from the Department of the Army to modify and expand the existing Port of Gulfport facilities. The project is located in the City of Gulfport near the intersection of U.S. Highway 90 and U.S. Highway 49, Section 9, Township 8 South, Range 11 West, Latitude 30.3557° North and Longitude 89,0977° West, Gulfport, Harrison County, Mississippi.

In accordance with legal requirements of Section 7(c) of the Endangered Species Act, as amended, and as outlined in the regulations governing interagency consultations (50 CFR §402.14), we would like to initiate formal consultation on the proposed project. Please find attached a copy of the biological assessment (BA) and a Section 7 Checklist prepared to support our determination. Based on the reasoning provided in the attached BA, we have determined the proposed project may affect the Gulf sturgeon (Acipenser oxyrinchus desotoi), and may adversely modify or destroy 282 acres of designated critical habitat for Gulf sturgeon. Based on the reasoning provided in the attached BA, we have determined the proposed project may effect, but is not likely to adversely affect the Kemp's ridley sea turtle (Lepidochelys kempii), Loggerhead sea turtle (Caretta caretta), Green sea turtle (Chelonia mydas), Leatherback sea turtle (Dermochelys coriacea), and Hawksbill sea turtle (Eretmochelys imbricate).

We respectfully request that Mr. Ryan Hendren be assigned the evaluation of this project as he has served as a commenter under a Cooperating Agency Agreement since April 11, 2011, and we feel that Mr. Hendren's continued involvement on the

project would allow for the greatest opportunity for a timely decision for all parties involved with this project.

We respectfully request a copy of the draft biological opinion prior to finalizing. We look forward to coordinating with you on this project. Please contact Mr. Phillip Hegji at (251) 690-3222 or by email at phillip.a.hegji@usace.army.mil if you have any questions.

Sincerely,

Munther N. Sahawneh
Chief, South Mississippi Branch
Regulatory Division

Enclosures

DEPARTMENT OF THE ARMY
MOBILE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

October 9, 2015

REPLY TO
ATTENTION OF

South Mississippi Branch
Regulatory Division

Mr. Richard Hartman
National Marine Fisheries Service
Habitat Conservation Division
Louisiana State University
Military Science Building, Room 299
South Stadium Drive
Baton Rouge, Louisiana 70803-0508

Dear Mr. Hartman:

Pursuant to the requirements of the Magnuson–Stevens Fishery Conservation and Management Act, the U.S. Army Corps of Engineers (USACE), Mobile District has prepared a comprehensive Essential Fish Habitat (EFH) assessment, which assesses the potential impacts of the proposed expansion of the Port of Gulfport (Port) located in Harrison County, Mississippi. The proposed action is filling approximately 197 acres of the Mississippi Sound for the expansion of the Port of Gulfport and the dredging of approximately 9 million cubic yards of material. For a description of the entire PGEP, see Essential Fish Habitat (EFH) Assessment.

The dredge material from the expansion project will be placed within the Biloxi Marsh Complex (BMC) Beneficial Use Site (BU). If BMC is not available, other BU sites, or disposal area 10, littoral zone site, the U.S. Environmental Protection Agency (USEPA) designated Pascagoula Ocean Dredged Material Disposal Site (ODMDS) or the Harrison County Upland Disposal Site are the proposed back up sites for deposition of all materials.

Per your agency's May 11, 2010 letter, you requested that the Port undergo an alternatives analysis to evaluate avoidance and minimization. The Port has stated that it is unable to avoid filling waters due to its location in the Mississippi Sound; moreover, during the public involvement process the public has stated that it is opposed to the Port creating inland facilities. When National Marine Fisheries Service (NMFS) provided the aforementioned letter the Port was proposing the fill of 616 acres of waters and the dredging of 332 acres (ac) of water bottoms. As currently stated, the Port now plans to fill 197 ac of water bottoms and dredge 264 ac of water bottoms. Please note that of these 264 ac of dredging, 178.5 ac will be filled and 85.5 ac will become deeper open

water habitat; an additional 18 acres will be filled with rip-rap to develop the breakwater for the primary purpose of shoreline protection. To further minimize the impacts of the project, the Port has stated that it will place an additional 11.36 ac of rip-rap along the outer perimeter of the West Pier for a total of 29 ac of rip-rap. The rip-rap would create a tiered habitat that would help offset the elimination of the current substrate and would be more readily utilized than the water bottoms currently onsite.

Please read the attached Draft EFH Assessment dated September 2015. Of interest is the lack of Habitat Areas of Particular Concern in the study area and that the habitat proposed to be filled is classified as open bay bottom habitat and open water. There are no Environmental Protection Agency special aquatic sites in the project footprint. While the Port does propose to fill 197 ac of open bay water bottoms/open water, it should be noted that Mississippi Sound contains approximately 452,000 acres of open-bay bottom habitat. Filling 197 ac of said habitat would account for approximately 0.04 percent of the total habitat type.

You have requested that the applicant consider the creation of approximately 200 ac of marsh in the formerly open waters of the BMC to offset the impacts to EFH functions and services associated with the possible expansion of the Port. However, based upon a report that the National Oceanic and Atmospheric Administration (NOAA) provided to the U.S. Army Corps of Engineers (USACE) on February 25, 2015 the state of Louisiana is eroding at a rate of 16 mi^2 per year. You are proposing the creation of 0.3125 mi^2 of marsh off the coast of Louisiana that would need to be monitored for at least 10 years. We do not feel that the creation of marsh is appropriate when the resource that the Port is proposing to impact, open bay waters and waterbottoms in the Mississippi Sound, is naturally being created at 50 times that rate.

You have provided a study; *Nekton Densities in Shallow Estuarine Habitats of Texas and Louisiana and the Identification of Essential Fish Habitat* (Minello 1999) which forms the basis of your replacement ratio of 1:0.5. We have concerns over the rationale to utilize this paper as the basis for this ratio. This paper does not sample the type of habitat proposed to be impacted, open bay bottoms/open water along the central Mississippi coast, or the habitat proposed to be created marsh in the BMC or possibly along the central Mississippi coast. The Port project occurs in waters 10 to 36 feet deep. The closest Minello comes to sampling this habitat type occurs in what is labeled "Shallow nonvegetated bottom (SNB)". SNB is "generally restricted to water <1m deep" which does not seem to fit the depths of the Port's project previously mentioned. The geographic extent of Minello's study ranges from south Texas to south of New Orleans, but not in the Mississippi Sound. It would appear that Minello is stating that it could be difficult to generalize his findings into other habitat types than what he studied which is summed up by Minello as "Similar comparative studies are needed for other habitats".

Based on the above information, the USACE, Mobile District has determined that the proposed action at the Port of Gulfport is not likely to adversely affect EFH. We would request your concurrence with our determination on this matter. Your cooperative

support of this activity, in accordance with the Magnuson–Stevens Fishery Conservation and Management Act, is greatly appreciated.

We look forward to coordinating with you on this project. Please contact Philip Hegji at (251) 690-3222, or by e-mail at philip.a.hegji@usace.army.mil if you have any questions.

Sincerely,

Munther N. Sahawneh
Chief, South Mississippi Branch
Regulatory Division

Enclosures

Appendix H2

Scoping Meeting 2011

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

REPLY TO
ATTENTION OF:

March 11, 2011

Coastal Branch
Regulatory Division

PUBLIC NOTICE

U.S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT

SCOPING MEETING
FOR THE
PROPOSED PORT OF GULFPORT EXPANSION PROJECT, HARRISON COUNTY, MISSISSIPPI
ENVIRONMENTAL IMPACT STATEMENT

TO WHOM IT MAY CONCERN:

Notice is hereby given that the U.S. Army Corps of Engineers, Mobile District has scheduled a public open house and scoping meeting on March 31, 2011, at the University of Southern Mississippi, 730 East Beach Boulevard, Long Beach, Mississippi, 39560, at the Fleming Education Center Auditorium. The open house will begin at 5:30 pm followed by a formal presentation at 6:30pm. Comments will be excepted at the meeting until 8:00 pm.

The purpose of the meeting is to receive public input concerning the scope and alternatives to be considered in the Environmental Impact Statement (EIS) for the Department of the Army Permit Application **SAM-2009-1768-DMY** for the Port of Gulfport Expansion Project, Harrison County, Mississippi. The Corps is the lead federal agency with the responsibility of evaluating the environmental impacts of the proposed project for the applicant, the Mississippi State Port Authority, and is preparing the EIS in accordance with National Environmental Policy Act requirements. The Mississippi Development Authority will be a cooperating agency in preparing the EIS, and the National Marine Fisheries Service has expressed interest in acting as a cooperating agency.

The proposed project as described in the permit application which was filed on March 17, 2010, included filling approximately 700 acres of open-water benthic habitat. Since submitting the application, Mississippi State Port Authority has modified the proposed project footprint to reduce the overall potential fill required for implementation and to avoid impacts to the Gulfport Harbor Federal Navigation Channel and Turning Basin. The revised proposed project involves filling of up to 400 acres of open-water bottom in the Mississippi Sound; the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, dredging and dredged material disposal, and infrastructure; and construction of a breakwater of approximately 4,000 linear feet.

The meeting agenda includes an open house with opportunities for discussions with project personnel, followed by staff presentations and a comment session. Court reporters will be available to transcribe statements from those wishing to provide verbal comments, or attendees may submit written comments at the meeting or via mail through the end of the official comment period (see below). All interested

individuals are invited to attend. Translations services for Spanish and Vietnamese speakers will be provided.

Written comments can also be faxed to (251) 694-4191, emailed to the project at port.gulfporteis@usace.army.mil, or mailed to: Mr. Damon M. Young, P.G. USACE - Mobile District, Post Office Box 2288, Mobile, Alabama 36628. To comment online, visit the project website at http://www.portofgulfporteis.com/. The deadline for submitting scoping comments was initially set for April 11, 2011; however, by issuance of this public notice the comment period has been extended to April 14, 2011.

FOR FURTHER INFORMATION CONTACT: For information about this project, to be included on the mailing list for future updates and meeting announcements, or to receive a copy of the draft EIS when it is issued, contact Damon M. Young, P.G., at the USACE at (251) 690-2658 or the address provided above. Mr. Ewing Milam, at the MDA can also be contacted for additional information at P.O. Box 849, Jackson, Mississippi, 39205-0849, telephone (601) 359-2157 or by electronic mail at emilam@mississippi.org.

For additional information about our Regulatory Program, please visit our web site at: www.sam.usace.army.mil/rd/reg and please take a moment to complete our customer satisfaction survey while you're there. Your responses are appreciated and will allow us to improve our services.

MOBILE DISTRICT
U.S. Army Corps of Engineers

services listed below from nonprofit agencies employing persons who are blind or have other severe disabilities.

Regulatory Flexibility Act Certification

I certify that the following action will not have a significant impact on a substantial number of small entities. The major factors considered for this certification were:

1. If approved, the action will not result in any additional reporting, recordkeeping or other compliance requirements for small entities other than the small organizations that will furnish the services to the Government.

2. If approved, the action will result in authorizing small entities to furnish the services to the Government.

3. There are no known regulatory alternatives which would accomplish the objectives of the Javits-Wagner-O'Day Act (41 U.S.C. 46–48c) in connection with the services proposed for addition to the Procurement List.

Comments on this certification are invited. Commenters should identify the statement(s) underlying the certification on which they are providing additional information.

End of Certification

The following services are proposed for addition to Procurement List for production by the nonprofit agencies listed:

Services

Service Type/Location: Base Supply Center, Rock Island Arsenal, 3154 Rodman Avenue, Rock Island, IL.
NPA: Association for Retarded Citizens of Rock Island County, Rock Island, IL.
Contracting Activity: DEPT OF THE ARMY, SR W0K8 USA ROCK ISL ARSENAL, ROCK ISLAND, IL.
Service Type/Location: Base Operations Support, Mark Center Campus, Alexandria, VA.
NPA: Service Source Inc., Alexandria, VA (prime); CW Resources Inc., New Britain, CT (subcontractor); Able Forces, Front Royal, VA (subcontractor).
Contracting Activity: Department of Defense, Acquisition Directorate, Washington Headquarters Service, Washington, DC.
Service Type/Location: Central Issue Facility Service, Fort Hood, TX.
NPA: Skookum Educational Programs, Bremerton, WA.
Contracting Activity: Department of the Army, Mission & Installation Contracting Command Center, Fort Sam Houston, TX.
Service Type/Location: Mail Management Support Service, Philadelphia Naval Business Center, Official Mail Center Carderock, Philadelphia, PA.
NPA: NewView Oklahoma, Inc., Oklahoma City, OK (prime); ServiceSource, Inc., Alexandria, VA (subcontractor); Naval Surface Warfare Center, Carderock Division, Ship Systems Engineering Station, Official Mail Center Carderock, West Bethesda, MD.
NPA: NewView Oklahoma, Inc., Oklahoma City, OK.
Contracting Activity: Department of the Navy, Commander, Fleet and Industrial Supply Center, San Diego, CA.

Deletion

Regulatory Flexibility Act Certification

I certify that the following action will not have a significant impact on a substantial number of small entities. The major factors considered for this certification were:

1. If approved, the action will not result in additional reporting, recordkeeping or other compliance requirements for small entities.

2. If approved, the action may result in authorizing small entities to furnish the service to the Government.

3. There are no known regulatory alternatives which would accomplish the objectives of the Javits-Wagner-O'Day Act (41 U.S.C. 46–48c) in connection with the service proposed for deletion from the Procurement List.

End of Certification

The following service is proposed for deletion from the Procurement List:

Service

Service Type/Location: Recycling Service, Veterans Affairs Medical Center, 1500 East Woodrow Wilson Drive, Jackson, MS.
NPA: Goodwill Industries of Mississippi, Inc., Ridgeland, MS.
Contracting Activity: Department of Veterans Affairs, NAC, Hines, IL.

Patricia Briscoe,

Deputy Director, Business Operations.

[FR Doc. 2011–5616 Filed 3–10–11; 8:45 am]

BILLING CODE 6353–01–P

CONSUMER PRODUCT SAFETY COMMISSION

Sunshine Act Meeting Notice

TIME AND DATE: Wednesday, March 16, 2011; 10 a.m.–11 a.m.

PLACE: Hearing Room 420, Bethesda Towers, 4330 East West Highway, Bethesda, Maryland.

STATUS: Closed to the Public.

MATTER TO BE CONSIDERED:

Compliance Status Report

The Commission staff will brief the Commission on the status of compliance matters. For a recorded message containing the latest agenda information, call (301) 504–7948.

CONTACT PERSON FOR MORE INFORMATION: Todd A. Stevenson, Office of the Secretary, U.S. Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814, (301) 504–7923.

Dated: March 8, 2011.

Todd A Stevenson,

Secretary.

[FR Doc. 2011–5777 Filed 3–9–11; 4:15 pm]

BILLING CODE 6355–01–P

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

Intent To Prepare an Environmental Impact Statement for the Port of Gulfport Expansion Project, Harrison County, MS (Department of the Army Permit Number SAM–2009–1768–DMY)

AGENCY: U.S. Army Corps of Engineers, DoD.

ACTION: Notice of intent.

SUMMARY: The U.S. Army Corps of Engineers, Mobile District (USACE) announces its intent to prepare an Environmental Impact Statement (EIS) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA). As part of the NEPA process, the Mississippi Development Authority (MDA) will be a cooperating agency in the preparation of the EIS. The National Marine Fisheries Service (NMFS) has expressed interest in acting as a cooperating agency in the preparation of the EIS.

The proposed project as described in the application filed on March 17, 2010, proposed filling approximately 700 acres of open-water benthic habitat. Since submittal of the application, the proposed project footprint has been modified by the MSPA to reduce the overall potential fill required for implementation and to not include any impacts to the Gulfport Harbor Federal Navigation Channel or Turning Basin. The currently proposed project involves filling of up to 400 acres of open-water bottom in the Mississippi Sound, the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, dredging and dredged material disposal and infrastructure, and construction of a breakwater of approximately 4,000 linear feet. The proposed expanded port facility will be elevated 25 feet above sea level to provide protection against future tropical storm surge events.

The EIS will evaluate the potential impacts of the proposed project, connected actions, and alternatives. The

EIS will also assist the USACE in deciding whether to issue a Department of the Army permit.

The purpose of this Notice of Intent (NOI) is to inform and educate the public of the proposed project; invite public participation in the EIS process; announce the plans for a public scoping meeting; solicit public comments for consideration in establishing the scope and content of the EIS; and provide notice of potential impacts to open-water benthic habitats.

DATES: A scoping meeting will be held on March 31, 2011. Comments will be accepted in written format at the scoping meeting or via mail/e-mail until April 11, 2011, to ensure consideration. Late comments will be considered to the extent practicable.

ADDRESSES: The scoping meeting will be held at the Fleming Education Center Auditorium at the University of Southern Mississippi's Gulf Park Campus, 730 East Beach Boulevard, Long Beach, Mississippi. Written comments regarding the proposed EIS scope should be addressed to Mr. Damon M. Young, P.G. USACE, Mobile District, Post Office Box 2288, Mobile, Alabama 36628. Individuals who would like to electronically provide comments should contact Mr. Young by electronic mail: *port.gulfporteis@usace.army.mil.*

FOR FURTHER INFORMATION CONTACT: For information about this project, to be included on the mailing list for future updates and meeting announcements, or to receive a copy of the DRAFT EIS when it is issued, contact Damon M. Young, P.G., at the USACE at (251) 690–2658 or the address provided above. Mr. Ewing Milam, at the MDA can also be contacted for additional information at P.O. Box 849, Jackson, Mississippi, 39205–0849, telephone 601.359.2157 or by electronic mail at *emilam@mississippi.org.*

SUPPLEMENTARY INFORMATION:

1. *Background:* The Gulfport Harbor Navigation Project was adopted by the River and Harbors Act approved on July 3, 1930 (House Document Number 692, 69th Congress, 2nd session) and the River and Harbors Act approved on June 30, 1948 (House Document Number 112, 81st Congress, 1st session). Construction of the existing Gulfport Harbor commenced in 1932 and was completed in 1950. Authorization to conduct improvements to the existing harbor was issued in the Fiscal Year 1985 Supplemental Appropriations Act (Public Law 99–88). The Water Resources Development Acts (WRDAs) 1986 and 1988 further modified the previous authorization to cover widening and deepening and thin-layer disposal, respectively. The authorized deepening was completed in 1993. Currently, there is an ongoing Federal action to widen the channel to the Federally authorized dimensions of 300 feet in the Mississippi Sound Channel and 400 feet in the Bar Channel. A Department of the Army Permit MS96–02828–U was issued in 1998 authorizing an 84-acre expansion to fill the West Pier to construct new tenant terminals and infrastructure. Phases I and II are currently under construction. Phase III is expected to begin in late 2011.

On August 29, 2005, Hurricane Katrina made landfall on the Mississippi Gulf Coast, resulting in one of the most significant natural disasters in the United States. The Port of Gulfport was severely impacted by the storm. The electrical power supply, roads, water, sewer, rail, small craft harbor fendering systems, navigational aids, and lighting and security systems were all destroyed or damaged beyond repair. According to the MSPA, the Port is currently operational at this time but it is not capable of withstanding another major hurricane without significant rehabilitation.

2. *Location:* The proposed Port of Gulfport Expansion Project is located in the City of Gulfport, Harrison County, Mississippi. The proposed project is approximately 80 miles west of Mobile, Alabama, and 80 miles east of New Orleans, Louisiana. The Port encompasses approximately 184 acres and is located within 5 miles of the Gulf Intracoastal Waterway (GIWW) and approximately 7 miles south of Interstate Highway 10.

3. *Work:* The proposed project involves filling of up to 400 acres of open-water bottom in the Mississippi Sound, the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, dredging and dredged material disposal and infrastructure, construction of a breakwater of approximately 4,000 linear feet, and may include additional improvements identified at the public scoping meeting. The proposed expanded port facility will be elevated 25 feet above sea level to provide protection against future tropical storm surge events. A Department of the Army permit is required for the proposed project, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1251), Section 10 of the River and Harbors Act (33 U.S.C. 403), and Section 103 of the Marine Protection, Research, and Sanctuaries Act (33 U.S.C. 1401–1445, 16 U.S.C. 1431 *et seq.,* also 33 U.S.C. 1271).

An Environmental Impact Statement (EIS) will be prepared pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 *et seq.*), and the Council on Environmental Quality NEPA regulations (40 CFR parts 1500–1508) to assess the potential environmental impacts associated with the construction and operation of a project proposed by the Mississippi State Port Authority (MSPA).

4. *Need:* According to the MSPA, this project will enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations. This project is needed to expand the Port's current footprint, which will include the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, dredging and dredged material disposal and infrastructure. Specific alternatives will be developed as part of the EIS process and feedback provided during project scoping.

5. *Affected Environment:* Environmental characteristics that may be affected by the proposed project include geological, chemical, biological, physical, socioeconomic, and commercial and recreational activities. Offshore, the navigation channel extends 20 miles south into the Gulf of Mexico, passing close to the western end of Ship Island. On-shore, the regional environment is characterized as Coastal Lowlands, and the shore area, where not developed, consists typically of gently undulating swampy plains. The beach area is man-made and bordered by constructed seawalls. The existing Port, as part of the man-made environment of Gulfport, is constructed on fill material. The Gulfport area is well developed. Beyond the seawalls are extensive commercial and residential developments. The near-shore area is known for its valuable resources as a productive fishery and is also utilized extensively for commercial and recreational shipping and boating.

6. *Applicable Environmental Laws and Policies:* The proposed project could result in both beneficial and negative environmental impacts. These impacts will be evaluated in the EIS in accordance with applicable environmental laws and policies, which include NEPA; WRDA; Endangered Species Act (ESA); Clean Water Act; Clean Air Act; U.S. Fish and Wildlife Coordination Act; National Historic Preservation Act; Coastal Barrier Resources Act; Magnuson–Stevens Fishery Conservation and Management Act; Coastal Zone Management Act; Marine, Protection, Research, and Sanctuaries Act; Rivers and Harbors

Act; National Marine Sanctuaries Act; Fishery Conservation Act; Marine Mammal Protection Act; Executive Order 12898, Environmental Justice in Minority Populations and Low-Income Populations; Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risk (among other Executive Orders); and Ports and Waterways Safety Act.

7. *Preliminary Identification of Environmental Issues:* The following list of nine environmental issues has been tentatively identified for analysis in the EIS. This list, which was developed during preliminary internal scoping, has been included with the permit application filed for the proposed project. This list (and information from similar projects) is neither intended to be all inclusive nor a predetermined set of potential impacts, but is presented to facilitate public comment on the planned scope of the EIS. Additions to or deletions may occur as a result of the public scoping process. Preliminary identified environmental issues include but are not limited to the loss of aquatic resource (impact to potential submerged and shoreline aquatic habitat); water quality, coastal zone consistency, hydrodynamic modeling, threatened and endangered species (including critical habitat and essential fish and shellfish habitat), air quality, alternatives, secondary and cumulative impacts, socioeconomics, and mitigation.

8. *Scoping meeting:* To ensure that all of the issues related to this proposed project are addressed, the USACE will conduct a public scoping meeting in which agencies, organizations, and members of the general public are invited to present comments or suggestions with regard to the range of actions, alternatives, and potential impacts to be considered in the EIS. The scoping meeting will be held at the Fleming Education Center Auditorium at the University of Southern Mississippi's Gulf Park Campus, 730 East Beach Boulevard, Long Beach, Mississippi, on March 31, 2011. The scoping meeting will begin with an informal open house from 5:30 p.m. to 6:30 p.m. followed by a formal presentation of the proposed action and a description of the NEPA process. Comments will be accepted following the formal presentation until 8 p.m. Displays and other forms of information about the proposed action will be available, and the USACE, the MSPA and the MDA personnel will be present at the informal session to discuss the proposed project and the EIS Process. The USACE invites comments on the proposed scope and content of the EIS from all interested parties. Verbal transcribers will be available at the scoping meeting to accept verbal comments following the formal presentation until 8:00 p.m. A time limit will be imposed on verbal comments.

9. *DRAFT EIS:* It is anticipated that a DRAFT EIS will be made available for public review in late calendar year 2011 or early 2012.

Dated: February 24, 2011.

Craig J. Litteken,

Chief, Regulatory Division.

[FR Doc. 2011–5672 Filed 3–10–11; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF EDUCATION

Credit Enhancement for Charter School Facilities Program; Office of Innovation and Improvement; Overview Information; Credit Enhancement for Charter School Facilities Program; Notice Inviting Applications for New Awards for Fiscal Year (FY) 2011

Catalog of Federal Domestic Assistance (CFDA) Number: 84.354A.

Dates:

Applications Available: March 11, 2011.

Date of Pre-Application Meeting: April 4, 2011 at 9:00 a.m., Washington, DC time.

Deadline for Transmittal of Applications: May 10, 2011.

Deadline for Intergovernmental Review: July 9, 2011.

Full Text of Announcement

I. Funding Opportunity Description

Purpose of Program: This program provides grants to eligible entities to permit them to enhance the credit of charter schools so that the charter schools can access private-sector and other non-Federal capital in order to acquire, construct, and renovate facilities at a reasonable cost. Grants awarded under this program will be of sufficient size, scope, and quality to enable the grantees to implement effective strategies for reaching this objective.

Priorities: This competition includes one competitive preference priority and one invitational priority that are explained in the following paragraphs. In accordance with 34 CFR 75.105(b)(2)(ii), the competitive preference priority is from the regulations for this program (34 CFR 225.12).

Competitive Preference Priority: For FY 2011 and any subsequent year in which we make awards from the list of unfunded applicants from this competition, this priority is a competitive preference priority. Under 34 CFR 75.105(c)(2)(i) we award up to an additional 15 points to an application, depending on how well the application meets this priority.

This priority is:

The capacity of charter schools to offer public school choice in those communities with the greatest need for school choice based on—

(1) The extent to which the applicant would target services to geographic areas in which a large proportion or number of public schools have been identified for improvement, corrective action, or restructuring under Title I of the Elementary and Secondary Education Act of 1965, as amended (ESEA);

(2) The extent to which the applicant would target services to geographic areas in which a large proportion of students perform below proficient on State academic assessments; and

(3) The extent to which the applicant would target services to communities with large proportions of students from low-income families.

Invitational Priority: For FY 2011 and any subsequent year in which we make awards from the list of unfunded applicants from this competition, this priority is an invitational priority. Under 34 CFR 75.105(c)(1) we do not give an application that meets this priority a competitive or absolute preference over other applications.

This priority is:

Applications that propose a grant project that uses competitive market forces to obtain the best rates and terms on financing for charter schools in order for the charter schools to acquire, construct, and renovate facilities while using the least amount of grant funds.

Program Authority: 20 U.S.C. 7223–7223j.

Applicable Regulations: (a) The Education Department General Administrative Regulations (EDGAR) in 34 CFR parts 74, 75, 77, 79, 80, 81, 82, 84, 85, 86, 97, 98, and 99. (b) The regulations for this program in 34 CFR part 225.

Note: The regulations in 34 CFR part 79 apply to all applicants except federally recognized Indian tribes.

Note: The regulations in 34 CFR part 86 apply to institutions of higher education only.

II. Award Information

Type of Award: Discretionary grants.

Estimated Available Funds: The Administration's budget request for FY 2011 does not include funds for this

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Commenter	Category	Comment
Reilly Morse	No Response Needed	Requests a change of venue for the public scoping meeting held on March 31, 2011.
Howard Page	Socioeconomics	What is the number and types of jobs expected for final build out?
	Socioeconomics	Are these job numbers available in the economic study that you will be starting or are they presently available?
	Socioeconomics	Has the economic study started yet? Who is doing the economic study? When will the results be available?
	Socioeconomics	Can you provide an estimate of jobs that may be created during the construction phase?
John Harral		Would like to stay informed about the progress of the project. / Add to mailing list. / Prefers electronic communication
	Not Applicable	There should be a new connector road to move the trucks away from the Port directly to the Interstate.
	Not Applicable	The connector road and the railroad need to be over Highway 90 to avoid the Highway 90 traffic.
Howard Newby		Would like to stay informed about the progress of the project. / Add to mailing list. / Prefers paper mailings.
	Air Quality	Concern over carbon emissions from trucks, trains, and ships.
	Aquatic Ecology / Wetlands and Submerged Aquatic Vegetation	Concern over invasive species destroying the marine habitat.
	Socioeconomics	Concessions that foreign countries control using their own people causing American job losses.
	Geology / Physiography, Topography, and Bathymetry	Island subsidence caused by dredging.
	Water Quality	Pollution of Mississippi Sound by large container ships.
Gulf Restoration Network	Socioeconomics	Estimated growth in the cargo container market is unlikely to occur at the rates predicted due to increased transportation costs and other economic conditions.
	Socioeconomics / Community Infrastructure and Municipal Services	Gulfport lacks the high-capacity, high-volume railway lines needed to efficiently ship large amounts of goods into interior states and the nearby population alone is not large enough to economically support an expanded cargo port.
	All Applicable Resources	Dredging a ditch for navigation through 400 acres of ocean bottom in Mississippi Sound could have significant negative impacts on sedimentation, channel shoaling, beach erosion, coastal wildlife (shrimp and oysters) along with endangered species like the Gulf sturgeon, the health of the water in the Sound, and the families who rely on the Sound for their livelihoods and recreation.
	Air Quality / Sea Level Rise / Roadway Traffic / Community Infrastructure and Municipal Services	This project could pollute the air, contribute to sea level rise and global warming, and significantly increase road and train traffic in surrounding communities.
	Socioeconomic	Minority and low-income communities in and around Gulfport that have already borne the brunt of development, pollution, and poverty should not be asked once again to sacrifice their health and security.
	No Response Needed	They provide a list of 8 different alternatives to consider.
	Permits and Approvals Required / MPRSA	They expect that all environmental controls by state, local, and federal regulatory agencies will be implemented.
	Alternatives	All alternatives to include recently approved projects to continue (84-acre permitted fill project and 25 feet port elevation project).
Steve Shepard	Alternatives	Expansion project proposes to dredge the ship channel and dispose of spoil increasing the already destructive channel size and potential for erosion and magnifying storm surge damage during hurricanes.
	Not Applicable	Any expansion of the channel only magnifies the saltwater intrusion problem, elimination of freshwater wells, damage to the estuary's biotic communities.
	Not Applicable	What about the Gulfport ship channel is different and less potentially destructive than the Mississippi Gulf Outlet Canal?

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Commenter	Category	Comment
	Alternatives / Wetlands and Submerged Aquatic Vegetation / Aquatic Ecology / Threatened and Endangered Species / Water Exchange and Inflows	The proposal to build a 25-foot tall island using soil barged in from who-knows-where is also a bad idea with magnified potential for hypoxia in near shore waters, a cutting off of currents and wave actions on a daily basis, a reduction of sea life and potential for seagrass beds and other healthy water bottoms.
	Wetlands and Submerged Aquatic Vegetation / Aquatic Ecology / Threatened and Endangered Species / Physiography, Topography, and Bathymetry	The existing man-made island has sifted the proliferation of natural biotic communities.
	Socioeconomics	The industrializing of the seashore at Highway 49, usually the entry point for tourists and the source of half of the current harbor's economic gain from the Island View Casino, will be severely disrupted and should discourage this plan's implementation or the Corps agreement to approve it since the loss of revenue could easily outstrip any slight gains from the enlarged terminals for off-loading produce/merchandise.
	Socioeconomics	Tourism has become, since legalized gaming, a resource of singular importance and this harbor's expansion with nothing but ship offloading - something carried out in Pascagoula, New Orleans, Mobile, Pensacola - precludes and prevents the healthy maintenance and expansion of tourism on this coast.
	Roadway Traffic / Socioeconomics	The industrializing of this area is not justified by the premise that this port will successfully gain enough new business to offset the economic declines caused by its unattractive and unhealthy environment making tourism unlikely and causing coastal transit far more difficult to tourists.
	Roadway Traffic / Socioeconomics / Air Quality / Community Infrastructure and Municipal Services	The road-building and railroad expansions so that hundreds of trucks and numerous locomotives can drive through from interstates and rail spurs to the port offer no only a tremendous impediment to visitation and tourism, but pour unacceptable pollutants from diesel engines and bunker fuel on ships into the community and into the lungs of visitors coming for clear skies and pristine vistas where ever possible.
	All Applicable Resources	The EIS must include all aspects of the change being wrought on this area - not just dredging and filling, but road-building, rail expansion, the inland port location, the racial justice implications of MDOT routes, whether or not the roads and rail are elevated, air pollution from ships in port or automobiles or from the coal-fired power plant located nearby which supplies electricity to ships tied at the dock.
	Air Quality	As for the air pollution magnified through so many diesel trucks, so many diesel locomotives, so many ships burning bunker fuel: The requirement for allowing this expansion to take place - should this project go forward - should emphatically and absolutely require only the properly maintained diesel trucks and diesel locomotives with only the latest and best pollution control devices installed and using only diesel fuel refined so that sulfur and other pollutants are minimized when burned.
	Air Quality	Ships approaching the Gulfport ship channel should switch to cleaner fuels fifty miles from port - as required in the Los Angeles port to help lower the amount of pollution released in this community.
	Roadway Traffic	The roads should not be elevated and the inland port should be placed above I-10 so that survival in serious hurricanes can more realistically happen.
	Road Traffic / Socioeconomics	Approaches to this port from the north by rail and road ought to take into account the economic status of communities with the roads avoiding economically challenged communities as often as these corridors will avoid wealthy neighborhoods.

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Commenter	Category	Comment
Maxine Ramsay	Introduction, Purpose and Need	There needs to be an EIS complete comprehensive report on the project.
	Socioeconomics	Spending $570 million dollars on a project to create less then 600 projected jobs seems to be out of proportion.
	Not Applicable	On dredging the ship channel, where will the spoils be placed?
	Wetlands and Submerged Aquatic Vegetation	How will the expansion adversely affect grass beds and wetlands?
	Socioeconomics	How will the expansion adversely affect tourism industry, shrimping and seafood industry, charter boat and fishing industry?
	Noise	How will the noise problem be solved?
	Air Quality	How will the air pollution from diesel engines be remedied? On the West coast, other ports have emission control on diesel trucks. What is the ports stand on this potential problem?
	Air Quality	How will the air pollution from ships be monitored? Will small planes be used to monitor ships due to excessive speed as other ports do?
	Roadway Traffic	How will trucks be monitored in reference to route, volume and time of day travel?
Julia O'Neal	Community Infrastructure and Municipal Services / Roadway Traffic / Socioeconomics	Even though the HUD CDBG money will not be used to expand the rail lines—the railroads have promised to fund that themselves—the impact of the noise, the separation of traffic, and especially the damage to the culturally important Turkey Creek community, must be considered.
	Socioeconomics	What about the air pollution's effect on a disadvantaged community?
	Socioeconomics	Please address the question of environmental justice.
	Water Exchange and Inflows	The impact of the Port's dredging design that fosters stagnant water without circulation must be considered. What will this do to the barrier islands?
	Geology / Physiography, Topography, and Bathymetry	The Corps is working on fortifying the barrier islands. Will this deep dredging compromise the saving grace that the shallow Mississippi Sound behind the barrier islands offers to storm surges?
	Alternatives / All Applicable Resource Impacts	Where will the dredging spoils be deposited and what effect will that have?
	Wetlands and Submerged Aquatic Vegetation / Aquatic Ecology	What effect will both the activity of building this modern gargantuan port (in a place where no port was intended by nature—Pascagoula is a more natural port) and its operation have on the oyster and shrimp crop, on the sea grass beds?
	Air Quality / Water Quality	What about the effects of bunker diesel on the Gulf waters? Even if San Diego-type rules for shutting off the dirty engines 50 miles offshore are in place (and enforced), more traffic will mean more bunker fuel waste discharged. And when the ships are cold ironing they will have to use electricity from Plant Watson, an obsolete polluting dirty coal plant.
	Water Quality	If non-point source pollution from oil leaks by cars onto Walmart parking lots is something we talk to our children about, what about the oil from all the big equipment activity on this elevated artificial Port? Every rain is a non-point source pollution event into the waters of the already polluted Gulf.
	Socioeconomics	The Port Authority of Gulfport is known to have had only one woman and only one person of color on the board in all its years of existence, so it is unlikely to further environmental justice in its future operations. The Corps owes it to the source of funds to prove that enough jobs will be created IN THE COMMUNITY to justify the expenditure.
	Socioeconomics	Even more to the point, but perhaps not addressable in the EIS, the overall cost-benefit of this expansion, even for the Port itself, has not been studied. There has been no examination of the business plan. Will the investment of $600 million into the Port provide at least a 4% per year return, as it would if invested in a laddered portfolio of U.S. Treasury bonds? The Mississippi Development Authority must justify expenditure on the Port by proving that it will provide jobs for the community. The Port Authority itself has not proven that the contemplated expansion is a good investment in the first place.

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Commenter	Category	Comment
Howard Newby		Would like to stay informed about the progress of the project. / Add to mailing list. / Prefers paper mailings.
	Not Applicable	Wants the EPA to do and EIS not just the USACE before the port becomes a reality.
	Air Quality / Socioeconomics	Concerned about the minority neighborhoods exposure to CO2 et al.
	Aquatic Ecology	Concerned about invasive species from ships destroying oystering, shrimping, and professional fishing.
	Air Quality	Concerned that the trucks, trains, and ships will add to climate change.
	Geology / Physiography, Topography, and Bathymetry	What impact will dredging have on barrier island subsidence?
	Socioeconomics	How can you speculate so many jobs when most are not directly attached to the port (motels, restaurants, etc.)?
	Socioeconomics	China has a huge interest in the concessions being offered. How do we know that she (?) wont use her own (engineers, technicians, etc.)?
Randy Magee	Roadway Traffic / Community Infrastructure and Municipal Services	Why not build a maglev overhead 'rail' conveyor system to the inland port being developed at canal road and I-10?
Patrick Hughes	Not Applicable	I understand that the funding has not been released from DHUD to the MSPA or MDA (not sure which entity actually receives the funds). Are you expecting the funds to be released very soon? In other words, in the next week or two?
Carol Campbell	Socioeconomics	The EIS must include the question of whether the real number of jobs the port expansion brings will actually be worth all of the costs associated with it for the people of Gulfport.
	Socioeconomics	Automation is a notorious job-killer. It must be studied whether the promised jobs will actually materialize as forecasted at this time.
	Socioeconomics	The scope of the EIS needs to cover whether our workforce can meet the requirements of the expanded Port and, if not, consider ways of providing job training for local people to do these jobs, rather than having workers recruited from other parts of the country.
	Socioeconomics	The EIS might also consider what tourism jobs could be taken away or never manifested as Gulfport becomes a less desirable destination. These questions concerning the ports' effects on tourism must be considered in the EIS.
	Air Quality	Expanded rail, truck and ship transport running primarily on diesel, ships run on bunker diesel. Fuel switching for these boats should be required, from bunker diesel to lighter forms as ships approach the port.
	Air Quality	Trains coming through are going to be heavy and fast, long chains of double-stacked containers filled with freight coming through Gulfport at 49 MPH running on heavy diesel fuel. The trucks passing in and out at the rate of some 5,500 per day hauling heavy containers will also run on diesel.
	Air Quality	The particulate matter resulting from the burning of diesel for ship, truck and rail transport will inevitably increase Gulfport's air pollution several-fold.
	Air Quality	What tourist is going to want to come to Gulfport and endure the smells and pollution of this proposed industrial development if air pollution is allowed to proliferate?
	Noise / Air Quality / Roadway Traffic / Socioeconomic	It must be considered in the EIS that the noisy, smelly, and dirty traffic will severely impair their quality of life as well as lower their property values.
	Roadway Traffic / Community Infrastructure and Municipal Services	With the expansion, the port will be designed with "concessions" in mind, so that new future clients will add themselves on to the expanded port. The more clients eventually connect with the port, the larger it will eventually grow-which means it could eventually be bigger by far than what the maps are forecasting for the public at this time. What this sounds like is potentially an ever-increasing flow of truck and rail traffic for the citizens of Gulfport and the Mississippi Gulf Coast to have to endure.
	Aquatic Ecology / Water Quality	Building a 25-foot tall island and expanding it outward in all directions would only increase the hypoxia in this part of the Sound because it will further impede the flow of water, and thus increase the hypoxia. The EIS must study and establish the extent to which this result can be expected if the port is expanded as now proposed.

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Commenter	Category	Comment
	Not Applicable	The even deeper dredging could increase storm surges. Mississippi Sound protects us from hurricanes; it must be considered in the EIS whether the increased dredging will compromise that valuable environmental service.
	Alternatives / Sediment Quality	The Corps say they want to build the islands up with the dredge spoil that will come from the bottoms below the port, but a lot of that could potentially be polluted, as it's sitting at the bottom of a shipping channel and receives diesel and cargo spills. I question whether it would be wise to restore our islands with potentially poisonous dredge spoil, and I advocate that that question be considered in the EIS.
	Aquatic Ecology / Water Quality	It must be considered what effect the bunker fuel used by these barges will have on our shrimp, oyster beds and other marine life - marine life that humans will eventually consume - as it either leaks directly into the water from the barges or else runs off the Port platforms during rainstorms.
	Socioeconomics	The scope of this EIS should include costs to the human community who will be most adversely affected by the construction of the proposed 310 connector road and additional rail lines, and with especial attention to the fact that these are African Americans who will bear these costs - when African Americans already disproportionately bear the burdens of American industrialism and resource extraction nationwide.
	Alternatives	As an alternative, why not simply restore the Port of Gulfport to its original state before Hurricane Katrina, meanwhile adding enhanced hurricane protection measures? Simply repairing the Commercial Small Craft Channel and Harbor should be considered as an alternative.
Patrick Hugues	Introduction, Purpose and Need / Alternatives	I am very interested to know what the expected time frame will be on the USACE decision for granting the permit for the expansion of the port at Gulfport, and how many acres will that expansion entail. How many cubic yards of fill are expected to be needed?
	Alternatives	Will the access to the port be dredged beyond the current 36' in order to be able to handle the new Panamax ships that will begin using the Panama Canal after its lock expansion is completed in 2014?
Wayne Watkins	Water Exchange and Inflows	Lack of free-water movement near the shore. The area west of the Port is already an area where water stagnates...and I feel the lack of a good thorough flow of water near the shore will just make the area west of the Port down to the West Side pier even more of a sewer. A nice huge drain pipe underneath the port near shore will aid in water flow.
	Roadway Traffic / Community Infrastructure and Municipal Services	With increased rail cargo, can we expect to sit in more traffic on the only one of two thorough east-west arteries?
Barney Creel	Not Applicable	There should be consideration to set up a campus on the coast and involve colleges to assist in the many different elements that are listed as concerns. Not only would you enable the port project to move forward but it would also establish a specialized educational institution on the Gulf Coast.
	Not Applicable	There has been many visits from universities in relation to the Oil Spill. It would seem that there would be the opportunity to merge oil spill environmental studies and research with Port initiatives.
	Not Applicable	Consideration for education related to tourism, hospitality, logistics, engineering, etc.... could also be beneficial.
Casey DeMoss Roberts	Socioeconomics	This entirely new infrastructure is to accommodate more and larger container ships in Gulfport. The MSPA has stated that this new infrastructure will bring in twenty times more containers to Gulfport, increasing the number of TEUs from 200,000 per year to 4 million per year.....However, it is not certain that larger container ships will decide to come to Gulfport, MS.
	Socioeconomics	The growth rate, the trend of the growth rate potential, will be significantly lower than it was six months to 12 months ago because growth and employment were artificially propped up and are not sustainable because we are just not going to see the same use of debt." The growth rate cited for the Gulf before the economic downturn, does not apply to the western Gulf ports (Gulfport, Manatee, Mobile, New Orleans, Tampa.

Commenter	Category	Comment
	Socioeconomics	….world trade patterns will increasingly be hampered by the rising costs of transportation. In the November-December issue of Foreign Affairs magazine Levinson wrote "Companies that provide American and European Customers with goods made in Asia are rethinking their models and seeking ways to shorten the distance between the factory floor and the store shelf."
	Socioeconomics	The Mississippi Port Authority (MSPA) has stated that market growth combined with the expansion of the Panama Canal will bring more boats from Asian markets to the Gulf in general and to Gulfport in particular. However, this view is not widely accepted. ..... Given that the Greater Gulfport region is substantially smaller than the Houston area, it is very questionable that the proposed port expansion would have the population to support it.
	Socioeconomics / Community Infrastructure and Municipal Services	The MSPA points to Gulfport's proximity to railways as an asset that will help the port attract barge traffic however, CSX spokesman Gary Sease, disagrees. He stated that CSX is working with ports and states on the East coast to eliminate barriers that limit overland traffic, like rail heights. An increase in East Coast traffic is expected from the Panama Canal expansion but the Gulf Coast is not expected to see a big increase.
	Socioeconomics / Community Infrastructure and Municipal Services	Key to big increases in the Gulf ports' share of Asia trade is reaching the interior markets of the U.S. Just because you have a rail line does not mean you can reach interior markets efficiently.
	Socioeconomics	The MSPA has claimed that dramatic population growth in the South will attract container cargo ships, however, the Greater Gulfport area would have to grow by over 1,700% to become a destination port.
	Not Applicable	The expanded Navigation Channel does not seem to have a maintenance plan. The MSPA has stated that the Port of Gulfport future plan is to "encourage USACE dredging of the navigation channel." This strategy raises many questions. First, will the Port have the financial ability to maintain the channel if the Corps declines responsibility? If not, then how will the channel be maintained? If the Corps decides to take on this responsibility, how will the Channel be managed? Will the Corps maintain this channel? And if yes, how will the Corps ensure that significant erosion does not occur like that which happened with the Mississippi River Gulf Outlet in Louisiana? How much business will the port have to grow to justify the cost to maintain the channel?
	All Applicable Resources	Direct, indirect, and cumulative impacts to the human and natural environment from the cargo port expansion and channel deepening will be significant, permanent, and negative.
	Mitigation	Mitigating for this damage will be difficult and expensive.
	Not Applicable	The EIS must address how the channel dredging and port expansion will impact each of these uses of the islands directly, indirectly, and cumulatively.
	Not Applicable	The USACE must analyze how the deeper and wider channel will impact the National Gulf Island Seashores, particularly Ship Island.
	Not Applicable	The USACE must also consider impacts to the Channel from the westward migration pattern of the barrier islands and how the westward migration of islands will impact channel maintenance.
	Physiography, Topography, Bathymetry / Geology / Socioeconomics	The MSPA states that the port expansion and deeper channel are part of the plan to "enhance Mississippi's standing in the global economy by repositioning the Port into a sustainable, world-class maritime facility for future generations." It is unclear how disrupting the natural migration process of the barrier islands fits into a picture of sustainability in the Mississippi Sound.
	Terrestrial Wildlife / Aquatic Ecology / Threatened and Endangered Species / Wetlands and SAV	The USACE must consider the impacts that increased ship traffic through the Navigation Channel will have on these sensitive species living in a National Park.
	Air Quality	The EIS must address the air quality issues from the proposed project and increased ship traffic will have on a federally protected park.

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Commenter	Category	Comment
	Geology / Soils / Salinity / Water Quality / Sediment Quality / Hydrology	The USACE should consider the following aspects of sedimentation for the deep-draft channel project: characteristics of the native soils or materials to be removed within the project channel; characteristics of sediments introduced into the upper reaches of the navigation project by riverine or other upland discharges; characteristics of sediments introduced into the lower reaches of the project by littoral processes, including wave action, resulting in beach erosion, and salinity intrusion; hydrodynamic and water chemistry conditions in the project region; and limitations or restrictions on dredging and dredged material disposal techniques and beach erosion control using sand bypassing methods.
	Alternatives / Soils	When considering maintenance dredging, the type of native soils must be considered.
	Geology	The USACE must consider sediments that will be deposited into the navigation project from the littoral systems.
	Geology	Will jetties be needed to trap the sands and keep shoals from forming in the navigation project?
	Geology / Physiography, Topography, Bathymetry	The Corps must study and develop predictions of erosion and accretion for a distance of 10 miles on either side of an entrance channel improvement project.
	Geology	The Corps must study the sediment budget and shoaling for before- and after-construction conditions. These studies are necessary for estimating maintenance dredging requirements, disposal area locations, training structures, and entrance sand-bypass assessment. Also, shoaling rates are needed for turning basins.
	Wetlands and SAV / Aquatic Ecology / Threatened and Endangered Species / Mitigation / Socioeconomics	The structural mitigation measures like revetments, breakwaters, or groins may impact Essential Fish Habitat (EFH), Submerged Aquatic Vegetation (SAVs), endangered species, eco-tourism, and aesthetics.
	Introduction, Purpose and Need / Socioeconomics	The Corps should analyze the cost of various methods of maintaining the beach and bay habitats and include this in the cost/benefit analysis.
	Wetlands and SAV	The EIS should determine how seagrass and other SAVs will be impacted by the proposed project.
	Introduction, Purpose and Need / Alternatives / Socioeconomic / Aquatic Ecology	The USACE must determine how the construction, new infrastructure, channel dredging and maintenance dredging, extra ship traffic and associated water quality contamination will impact commercial and recreational finfish and shellfish.
	Threatened and Endangered Species	The USACE must consider how many mammals could be lost to ship strikes due to an increased amount of ship traffic.
	Aquatic Ecology / Threatened and Endangered Species	Noise pollution from the increased shipping traffic will increase and could potentially harm marine species that rely on sound for their orientation, communication, and feeding.
	Aquatic Ecology	Ballast water, known to include plants, animals, viruses, and bacteria, often include non-native, nuisance, exotic species that can cause extensive ecological and economic damage to aquatic ecosystems.
	Not Applicable	The USACE must analyze what impact a deeper and wider navigation channel will have on salinity concentrations near the project area and how this potential change may impact water quality and the fauna and flora that depend on the current saline concentrations.
	Water Quality / Sediment Quality	With the increased number of container ships coming into Mississippi Sound, the amount of chemical contamination can also be expected.
	Aquatic Ecology	There must be active regulation of ships coming in to port over ballast and bilge water discharges.
	Water Quality	Stormwater run-off from the increased surface area of the port will increase and the Port should be mandated to do an anti-degradation review for the increase in stormwater runoff discharge.
	All Applicable Resources	The Mississippi Sound, coastal area, and barrier islands must be looked at as whole, because the area represents a rich and productive ecosystem working from a highly evolved interdependence between the physical, chemical, and biological worlds. The proposed project will be modifying all three components.

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	Geology / Water Exchange and Inflows	The EIS should conduct hydrodynamic modeling to determine impacts from tide heights (water levels), current velocities and duration, water circulation patterns, and shoaling and erosion near the channel and possible effects on adjacent shoreline resulting from changes in wave patterns.
	Water Exchange and Inflows	The EIS should conduct further hydrodynamic modeling to determine if the proposed project could increase the height and force of storm surge associated with hurricane events and other environmental problems that may come up during the maintenance of the channel.
	Water Quality / Cumulative Impacts	The EIS should included a thorough analysis of the potential of re-introducing BP oil into the water column, and the impact the development of the port may have on future restoration projects.
	Essential Fish Habitat	There are nine specific species along with Coastal Migratory Pelagics, Reef Fish, and Shrimp with EFH designated in the project area. The specific species with EFH that are likely to be adversely affected are Atlantic Sharpnose shark, Blacktip shark, Bull shark, Finetooth shark, Great hammerhead shark, Red Drum, Scalloped Hammerhead Shark, Spinner shark, and Stone Crab.
	Threatened and Endangered Species	The USACE must consider how the construction and maintenance of the navigation channel, expansion and construction activity for the port, and increased traffic and pollution will impact the Gulf Sturgeon, its migration needs, and its critical habitat.
	Air Quality	The EIS should analyze the direct, indirect, and cumulative impacts of construction equipment diesel and other air emissions on the surrounding neighborhood, including its vulnerable populations, such as the students at West Elementary, Anniston Elementary, Bayou View Elementary and Middle School, Central Elementary, Gaston Point Elementary, Pass Road Elementary, Twenty-Eighth St. Elementary, and Gulfport Central Middle School.
	Air Quality	The EIS should consider alternatives to decrease the air pollution including the use of biodiesel and ultra low-sulfur diesel in the alternatives analysis and other ways to reduce diesel emissions, such as limiting the idling of engines, using diesel oxidation catalysts and diesel particulate filters, and low emission shipping zones.
	Air Quality	The EIS should determine a baseline for air quality currently enjoyed near the proposed project.
	Commercial and Recreational Navigation	The EIS should consider the increase in marine accidents and casualties from the proposed project. The EIS should collect data from US Coast Guard marine accident records and compile casualty and accident statistics and accident data on existing navigation channel projects that are similar in size to the proposed project.
	Socioeconomics	Many businesses near the proposed project depend on a healthy, undisturbed eco-system. The coastal area is known for being a productive fishery and is used extensively for commercial and recreational fishing and boating and all the support services that rely on this business.
	Aquatic Ecology / Socioeconomics	The Mississippi Sound has a Recreation and Shellfish designated uses under the Clean Water Act. The Mississippi Sound is popular for swimming, windsurfing, motor boating, fishing, diving, and sailing.
	Cumulative Impacts	Cumulative effects should include those related to eco-system services, conservation, economics, aesthetics, environmental concerns, wetlands, cultural values, fish and wildlife values, protected species, flood hazards, flood plain values, land use, navigation besides large cargo ships, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food security, invasive species, designated uses, geomorphology, public health, and eco-tourism.
	Roadway Traffic / Air Quality	The EIS for the Gulfport project should review the increase in traffic on land form the increase in cargo transportation will contribute to longer waiting times for residents and poorer air quality from idling vehicles.
	Sea Level Rise / Air Quality (GHG)	The project is funded by United Stated Federal dollars and therefore, by law, must consider the project's impact on climate change.

Commenter	Category	Comment
	Not Applicable	The EIS should determine how the deeper and wider navigation channel, increased ship traffic, water quality degradation, and larger port footprint will impact the MSCIP. If impacts to the MSCIP are found, then those impacts should be avoided or the MSCIP should be re-studied. The State of Mississippi, Department of Marine Resources, the USACE, Mobile District, and the DMR should consider if the plan is consistent with Mississippi Coastal Improvement Plan.
	Socioeconomic	The EIS must consider the population that will most directly be impacted and determine the risks to the population from the port expansion, increased traffic, increased air pollution, accidents, water pollution, etc. Further, the EIS should look at different segments of the population, like children, as it is known that children are more vulnerable to air pollution. Other vulnerable segments include the elderly, people with chronic respiratory disease, people with immune disorders, people without their own transportation, people with disabilities, and others.
	Alternatives	Gulf Restoration Network provides several alternatives they would like to be considered in the EIS including 1) Port restoration and hurricane protection; 2) Port revitalization; 3) no-expansion of the navigation channel; 4) no north harbor fill and cut; 5) no east pier expansion; 6) shipping storage area relocated to uplands; 7) administrative buildings are LEED-certified; 8) port leases include environmental controls; 9) no future concession; 10) no build.
	Mitigation	The public health and environmental impacts of the proposed project will likely be significant. To ensure the population is minimally impacted, mitigation should include a "Community Mitigation Trust Fund" based on the Los Angeles model that the Board of Harbor Commissioners approved in October 2010.
	Air Quality	Special air filters should be installed in all of the area schools to alleviate asthma linked NOx pollution from the Port. Outdoor air pollution will still need to be addressed as mentioned previously.
	Mitigation	Habitat that is destroyed must be replaced with like habitat, instead of allowing an offsetting enhancement or restoration of a wetland.
	Mitigation	What formula will be used to determine mitigation acreage?
	Mitigation	The applicant suggested management of coastal preserves for mitigation, however, management is not mitigation. The deployment of derelict vessels may not serve an equivalent ecological function within the near shore environment impaired by the proposed project. Creation of near shore reefs should look to replace reefs in historical locations in the sound.
	Introduction, Purpose and Need	Our legal research suggests that the USACE does not currently have proper Congressional approval for a deep-draft harbor and therefore, does not have the ability to authorize the deepening and expansion of the navigation channel nor, possibly, the expansion of the Port.
	No Response Needed	The set-up for the scoping meeting on March 30, 2011 caused people to feel that their comments were not important and several people at the meeting raised concerns about the process. Individuals submitting oral public comments were asked to speak one-on-one with one of two court stenographers, thus making it impossible for others at the meeting to hear their comments. Limiting the public's ability to hear others' comments also limits the public's ability to learn from and build upon others' comments.
	Not Applicable	The GRN has been informed that the Scoping meeting was not run by the USACE, but rather a controversial local law firm Balch and Bingham; a law firm that has represented polluters against local community members and non-profit organizations. Balch and Bingham should not be the go-between for the USACE and the public.
	No Response Needed	The USACE should be conducting the EIS scoping meetings and all other public meetings in-house. The USACE has the experience to conduct these meetings and has the perceived neutrality that is critical for this process. Also, future meetings with the public should be located in areas convenient to the impacted community.
The following are the same letter sent from the Gulf Restoration Network on behalf of:		
Casey Roberts	Socioeconomics	The estimated growth in the cargo container market is unlikely to occur at the rates predicted due to increased transportation costs and other economic conditions.
Jeannie Shepard	Community Infrastructure and Municipal Services / Socioeconomics	Gulfport lacks the high capacity, high-volume railway lines needed to efficiently ship large amounts of goods into interior states and the nearby population alone is not large enough to economically support an expanded cargo port.

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Commenter	Category	Comment
John Wiles III	All Applicable Resources	The dredging of a new, big ditch for navigation through 400 acres of ocean bottom in the Mississippi Sound could have significant negative impacts on sedimentation, channel shoaling, coastal erosion, coastal wildlife like shrimp and oysters along with endangered species like the Gulf Sturgeon, the health of water in the Sound, and the families who rely on the Sound for their livelihoods and recreation.
Matt Sukiennik	Air Quality / Sea Level Rise / Roadway Traffic / Community Infrastructure and Municipal Services	This project could pollute the air, contribute to sea level rise and global warming, and significantly increase road and train traffic in surrounding communities.
Rosemary Ward	All Applicable Resources	The Mississippi Sound, coastal area, and barrier islands must be looked at as whole, because the area represents a rich and productive ecosystem working from a highly evolved interdependence between the physical, chemical, and biological worlds.
Sally Morrow	Cumulative Impacts	The EIS should also look at secondary and cumulative effects - including those related to eco-system services, conservation, economics, aesthetics, environmental concerns, wetlands, cultural values, fish and wildlife values, protected species, flood hazards, flood plain values, land use, navigation besides large cargo ships, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food security, invasive species, designated uses, geomorphology, public health, and eco-tourism.
Erin Dallin	Alternatives	The EIS should address alternatives including: 1) alternative that would only include repairs to the existing port infrastructure including hurricane protection measures; 2) alternative that includes repairs to the Commercial Small Craft Channels and Harbor; 3) alternative that does not include an expansion of the navigation channel; 4) alternative that would exclude the North Harbor fill and eliminate the need for North Harbor cut; 5) alternative that would exclude the new East pier and revetment that would cross the Yacht Basin Channel; 6) alternative relocating store area to uplands and minimizing impacts to wetlands; 7) alternative in which new buildings are LEED-certified; 8) alternative in which Port lease include environmental controls; 8) alternative that would exclude the new 160 acre Concession pier and associated revetment; 9) and a no build alternative that analyzes the impacts of not moving forward with the project.
James Lazell		
Daryl Ross		
Tracy Gardner		
Johanna Beaudry		
Billy Wilkinson		
Mary Sciambra		
Mary Cuellar		
Mississippi Center for Justice	All Applicable Resources	The USACE must analyze all direct, indirect, and cumulative impacts of the project.
	No Applicable	NEPA requires that an EIS consider "connected" actions.
	Introduction, Purpose and Need / Cumulative Impacts	The Port of Gulfport Expansion Project, Port of Gulfport Rail Improvements, Port Connector Road, and the 84-acre Fill, Net Tenant Terminal and Infrastructure Project must be analyzed in a single EIS since those projects are connected action, and it would be illegal and illogical to analyze each component in isolation.
	Introduction, Purpose and Need / Cumulative Impacts	With respect to the Port of Gulfport Rail Improvements and Port Connector Road, the geographic scope of the USACE's review must be enlarged to include all neighborhoods (as far north as Hattiesburg in the case of the rail improvements) that will be potentially impacted by those project elements, including those neighborhoods located in the northern city limits of Gulfport, such as North Gulfport and Turkey Creek.
	Introduction, Purpose and Need / Cumulative Impacts	Because the Port of Gulfport Rail Improvements are "imperative" to the Port Expansion Project, the environmental analysis of the projects must be aggregated under HUD's regulations.
	Introduction / Cumulative Impacts	The EIS should also consider all foreseeable future developments on the north end of the Port. For example, STEPS is aware that MSPA is receiving proposal for large scale leisure and casino development at the north end of the harbor. Any and all impacts from this development, such as additional pollution impacts from cruise ships (air, wastewater, solid waste and traffic), must be described and analyzed in the DEIS.

Commenter	Category	Comment
	Socioeconomic	Under guidance issued by the CEQ, NEPA analysis of the project must include, among other things: 1) consideration of the demographic composition of the area affected by the project; 2) review of health data addressing multiple or cumulative exposure to environmental hazards resulting from the project; and 3) recognition of social, economic and other factors that may amplify the environmental effects of the project. The DEIS must include a comprehensive environmental justice analysis of all of the potential impacts of the project.
	Socioeconomic	The DEIS must describe and fully analyze the environmental effects of the project on local minority and low-income communities, such as North Gulfport, Central Gulfport, the Quarters, Gaston Point, Villa del Rey, Rolling Meadows, Soria City, and Turkey Creek. The NEPA process must include opportunities for all such affected communities to provide input.
	Noise / Roadway Traffic / Air Quality / Socioeconomic	Increased emissions of air pollutants, noise, traffic, and blockages of access will likely occur on both sides of the communities divided by the Connector Road. The project will likely result in disproportionate adverse impacts to the minority and low-income communities adjacent to the Port of Gulfport Rail Improvements and Port Connector Road projects.... Among other things, strategic noise maps, noise conflict prevention and action plans, traffic studies, and air pollution analysis maps should be incorporated into the EIS.
	Air Quality / Socioeconomic	Construction of the 25-foot retaining wall will likely result in increased dust and air pollution pathways on roads that pass by environmental justice communities, including Highway 49, 30th Avenue, 28th Street, Canal Road, and Cowan Road. The NEPA process for the project should develop methods to maximize stakeholder engagement and create a community benefits plan along this corridor.
	Not Applicable	The EIS must also identify and analyze adverse impacts associated with construction and operation of an inland terminal which would be located on property adjacent to North Gulfport, as well as the temporary housing of containers at such an inland terminal.
	Socioeconomic	The project will also result in the elimination of a commercial small craft harbor used by local fishermen. The EIS should analyze the impacts of the elimination of this commercial small craft harbor, including how the elimination of the harbor will impact environmental justice communities, employment, and the local economy.
	Water Quality / Sediment Quality / Aquatic Ecology	The EIS must fully analyze all potential water quality impacts from the project, including but not limited to: 1) acute chemical toxicity; 2) increase of suspended sediments; 3) release of organic matter, nutrients and/or contamination; 4) turbidity; 5) smothering/removal of organisms; 6) bioaccumulation; and 7) alteration of the community structure and substance type.
	Aquatic Ecology / Water Quality / Hazardous Materials / Sediment Quality / Mitigation	The project includes filling at least 400 acres of water bottom involving extensive dredging and dumping of fill. The EIS must identify and analyze the environmental of impacts of these activities in detail, including addressing the application of TMDL designations to the dredging projects. Also, the EIS must analyze potential contamination of fill dirt. The EIS should also analyze potential mitigation measures such as the creation of artificial reefs.
	Socioeconomic / Aquatic Ecology / Essential Fish Habitat	A decreased in water quality may impact low-income residents who fish for personal consumption from nearby piers and small craft. The project would likely impact subsistence seafood species (e.g. mullet, shrimp and crab). The EIS should include baseline studies and an ecosystem monitoring framework as part of the analysis of this issue. EFH consultations should also be considered.
	Threatened and Endangered Species / Mitigation	The EIS should include a robust analysis of the impacts to Gulf sturgeon, alternatives that would minimize these impacts, and mitigation measures aimed at eliminating the impacts.
	Water Quality / Water Exchange and Inflow / Sediment Quality / Aquatic Ecology	Water quality impacts, including the effects of wastewater and stormwater runoff, must be addressed in the DEIS. The DEIS should analyze the impacts of the project on water circulation patterns, dissolved oxygen levels, and sediment management. Mitigation measures, such as installation of subsurface grass beds should be considered.
	Air Quality / Cumulative Impacts	The DEIS must identify and analyze the project's potential direct, indirect and cumulative impacts on air quality. The DEIS would address impacts related to bunker fuel emissions from idling ships and trucks at the port, air pollution related to dust resulting from the construction of the 25-foot high wall in the west pier, and air pollution pathways front he delivery of fill dirt to build and expand the port.

Commenter	Category	Comment
	Air Quality	The DEIS should examine methods to mitigate the increased air pollution resulting from the project. In particular, the DEIS must examine the feasibility of utilizing sustainable power for light, heating, and refrigeration at the port. Also examine the potential benefits resulting from installing energy efficient roofing on every structure that comprises the project. Other possible mitigation measures include electrification of port equipment (e.g. ship to shore cranes, refrigerated storage and drayage trucks), using cleaner fuels for trucks and ships, moving toward Tier 4 emission standards, reducing idling time, using auxiliary power units, retrofitting or replacing old engines, and using more automated operation.
	Air Quality (GHG)	The EIS must include a climate change adaptation plan to examine how to reduce the port's carbon footprint with the goal of ultimately rendering the port carbon neutral. MSPA should join the CCAP partnerships and incorporate CCAP's policies into port management and development.
	Air Quality	The EIS should address the effect of the project on the area's non-attainment status for all criteria pollutants under the federal CAA. This analysis, and the DEIS's general analysis of air quality impacts should also consider how the increased energy demands of the project, both during construction and operation, will result in increased emissions of pollutants/greenhouse gasses from local electric generating facilities.
	Mitigation	The EIS should address the potential loss of open space and public access to recreational features, such as piers, walkways, and beaches. Mitigation measures should include, among other things, offsets for any unavoidable reductions in open space and public recreational features.
	Mitigation	To the extent the project contemplates reusing dredged spoils on the barrier islands, such a proposal must be thoroughly analyzed before it is permitted.
	Hazardous Materials	Incorporate a management plan for the storage and handling of hazardous materials (e.g. sludge). To minimize and avoid contamination, all containers holding hazardous material should be spill proof.
	Aquatic Ecology	The EIS must analyze dock shading impacts on aquatic resources and discuss potential mitigation measures.
	Roadway Traffic / Noise / Air Quality / Socioeconomic / Community Infrastructure and Municipal Services	The EIS should analyze which transportation method results in fewer impacts from the standpoint of air, noise, traffic flows, and community disruption. The EIS should also examine the aggregate impacts from an increase in ships, dryage, port equipment, rail, and long haul trucking
	Roadway Traffic / Socioeconomic	The EIS would also analyze the impacts increased traffic and congestion resulting from the project will have on the local economy, including tourism and outdoor recreation.
	All Applicable Resources / Mitigation	The EIS should address environmental impacts and mitigation in the Turkey Creek watershed, in furtherance of environmental justice obligations.
M.O. Lawrence, III	All Applicable Resources	Federal law requires a complete analysis of all direct, indirect, and cumulative effects in your analysis. These should include: the impact associated with the creation of the man-made land into the Mississippi Sound, the impacts associated with the expansion and deepening of the Gulfport Ship Channel, the impacts associated with the Port Connector road, the impacts associated with the so called off-site evacuation area, the impacts associated with any pending developments at the Northern end of the port property, and the impacts associated with the rail corridor from Gulfport to Hattiesburg, MS. Analysis should examine water quality, air quality, wetlands mitigation, and human health issues.
	Socioeconomic	Since most of the impacted areas are designated as low income and/or minority communities, federal law further requires a comprehensive environmental justice analysis. Since Community Development Block Grant are a critical factor in the financing of this project, all applicable laws relating to the expenditures of these funds should likewise be incorporated into your analysis.
	Socioeconomic	Analysis should include a Department of Justice review for any potential violations of discrimination and a prescribed course of action for remediation.

Commenter	Category	Comment
Schmitt Transcript:		
Gerald Miller	Introduction, Purpose and Need / Socioeconomics	One of the problems of Port EIS is in the last 25 years is that the section on purpose and need have been conflated together. They're not. They're separate entities. Purpose is easy . . . It's the -- to allow the Port to increase its economic footprint, increase deficiencies, greater marginal profits, benefits to Gulfport, the Coast, and by extension the entire State of Mississippi. Need is quite something else. That's much more overarching. That deals with national interest . . . That means that you've got to look and see is there a need. For example, just in the first bite of the apple in this project of it getting from 200,000 to a million . . . And there's a lot of ways that you can examine that. You can do it through a multi-port analysis. That's where you look at capacities, both current and planned development in other port projects.
	No Response Needed	When you're dealing with federal money there's got to be a national interest. You don't fund every port and wind up in competition with yourself with a lot of access capacity. Now, that is a very fundamental issue.
	Socioeconomic	There's also a lot of other things here that I'm hearing in terms of this project. I didn't hear any acknowledge of any other ports. The Port of Savannah right now is -- they just had their draft EIS. They're going from two and a half million to six and a half million TEU's in the same time as the projections of the Port of Gulfport. The question is: Are there really -- is there really that much extra capacity involved, all right, because federal monies are funding both ends, Savannah and port. That's very, very important.
	Socioeconomic / Commercial and Recreational Navigation	The ingress -- this channel is only 36 feet existing operational depth . . . Now, the problem here is that generation two and generation three Post-Panamax ships draw much more water than that. Savannah has demonstrated that they can't live with less than 48 feet. So the Port is -- the container fleet ships are drifting to bigger and bigger ships and this Port can't handle them.
	Community Infrastructure and Municipal Services	Secondly, the egress. They're going to raise the Port up. They're going to have roadways going to 1-10, and they're improving access off the Port, the rail system. But where's -- where's all these -- where's the TEU's going? Savannah goes to Atlanta. Where's all these containers going to?
Raleigh Hoke	Socioeconomic	. . . the expansion of the cargo Port in Gulfport is not necessary. The estimated growth from the cargo container markets is unlikely to occur at the rate predicted due to increased transportation costs and other economic conditions
	Socioeconomics	Gulfport lacks the high capacity, high volume railroad lines needed to efficiently ship large amounts of goods into interior states. The nearby population alone is not large enough to economically support an expanded cargo port.
	All Applicable Resources	The negative impacts of the human and natural environment from the cargo port expansion and related channel deepening will be significant and permanent. The dredging of a new, big ditch for navigation through 400 acres of ocean bottom and the Mississippi Sound could have significant negative impacts on sedimentation, channel shoaling, beach erosion, coastal wildlife like shrimp and oysters, along with endangered species like the Gulf Sturgeon, the health of the water in the Mississippi Sound, and the families who rely on the Sound for their livelihoods and recreation.
	Air Quality / Sea Level Rise / Roadway Traffic / Community Infrastructure and Municipal Services	This project could pollute the air, contribute to sea level rise and global warming, and significantly increase road and train traffic in surrounding communities.
	Socioeconomic	Minority and low-income communities in and around Gulfport that have already borne the brunt of development and pollution and poverty should not be asked to once again sacrifice their health and security.
	Alternatives	There's several alternatives to consider instead of this unnecessary and destructive proposal, including but not limited to alternative one, port restoration and hurricane protection alternative. The port restoration and hurricane protection alternative would only include repairs to the existing port infrastructure, including hurricane protection measures for the Port of Gulfport. There would be no expansion of the pier, slash, wharf, no dredging for expanded navigation channels, no dredging for expanded berths, and no dredging for expanded basins. And no need for the construction of new revetments, jetty structures, bulkheads, breakwaters, and piers.

Commenter	Category	Comment
	Alternatives	Alternative two, repair commercial small craft channel and harbor. The environmental impact statement should consider repairing the commercial small craft channel and harbor located on the west side of the proposed project.
	Alternatives	Alternative three, no expansion of the navigational channel. U.S. Army Corps of Engineers states that deepening and widening the Gulfport Harbor Federal Navigation Channel is not required to support the project as proposed at this time. Therefore, it is not -- there's no justifiable need to dredge the Mississippi Sound.
	Alternatives	Alternative four, no north harbor cut. Once again, USACE states that deepening and widening the Gulfport Harbor Federal Navigation Channel is not required to support the project as proposed at this time. Therefore, there's no justifiable need to dredge the Sound or the north harbor cut.
	Alternatives	Alternative five, no east pier. Alternative five would exclude the new revetment that would cross the yacht basin channel on the east side of the Port.
	Alternatives	Alternative six, shipping storage area relocated to uplands. The storage container area will be impacting 63 acres of wetlands in the coastal zone. And the Port should -- the Port should find a property further north to avoid and minimize permanent damage to wetlands.
	Alternatives	Alternative seven, administrative buildings are L-E-E-D certified, LEED certified. Construction of any new buildings should be LEED certified as well as any new modern maintenance and ancillary buildings.
	Alternatives	Alternative eight, Port leases include environmental controls. According to the Mississippi State Port Authority, all the piers are public, but most facilities are operated through leases operating for space assignment agreements with private operators and users. Leases and space assignment agreements include environmental controls.
	Permits and Approvals Required / MPRSA	. . . we expect that all environmental controls by state, local, and federal regulatory agencies will be implemented. All these alternatives could include recently approved projects to continue including the 84-acre permitted fill project . . . and the 25-feet Port elevation project.
	No Response Needed	I'd also like to comment that future meetings on this should be held closer to affected communities like the Point Neighborhood and Turkey Creek in the Gulfport area. And that future meetings also include presentations from the public in front of the entire crowd so that members of the public can hear comments.
Roberta Avila	Socioeconomic	I have a huge concern about the way this meeting was held, because it's a violation of environmental justice and there are huge environmental justice issues around this Port expansion. Environmental justice means the meaningful opportunity to participate. And the Corps's decision to hold this meeting outside of the affected community, which is North Gulfport reduces the opportunity for the African American community to participate and add their concerns. And -- so that's my first thing.
	Introduction, Purpose and Need	The planned Port of the Future provides no storm protection to anything outside the Port. On March 29, 2011, Joe Conn, port recovery director, made the statement that the Port expansion would provide storm protection. We don't believe this. Adding feet to the height of the Port does not protect the city of Gulfport from storms. In fact, there is an increased risk of flooding to North Gulfport when the proposed 162-acre wetland fill happens which will provide for a port connector road. So we don't see anything sustainable about this port plan expansion.
	Socioeconomics	The cost of the project is very expensive. The Port proposes to spend a half billion dollars of CDBG money to raise the Port facility 25 feet. However, it will leave shipping containers vulnerable to storm surge at the level of Katrina which came in at 27.8 feet. And it is estimated that just to bring in the dirt fill will cost $200 million.
	Socioeconomics	It's not safe. The equipment that will be provided to secure containers at the Port after the expansion is completed is only designed for wind protection. When a storm surge hits the containers they will not be secure.
	No Applicable	When the Port is elevated, the plan is for the containers to stay at the Port even during hurricanes. The ports in the facility known as the Port's 33rd Street property presents a great risk to North Gulfport. The threat from the Port simply moves from one neighborhood to another. The threat from wind-borne containers at the Port 20 is still there.

Commenter	Category	Comment
	Introduction, Purpose and Need	The solution is an evacuation facility north of 1-10, which would be far more desirable and cheaper than elevating the Port.
	Socioeconomic	The lack of job creation. The planned Port is being designed as a semi-automatic facility. This will allow the Port to do more work with less people.
	Socioeconomic	There's a great likelihood that the Port will spend the 570 million and not create additional jobs. In fact, the Port may even lose some of the present jobs or getting more traffic. This concerns us because the community had the expectation that there would be many well-paying jobs.
	Air Quality / Roadway Traffic	(I) have environmental concerns and air quality. The new project is for a four million TED capacity. That is two million trucks a day a year making a round trip into and out of the Port. If half go by rail there is still a million 16 round trips a year, five thousand five hundred truck trips every day into and out of the Port of Gulfport. The other half of the containers will be part of the constant rail traffic. The rail traffic combined with increased trucks truck traffic will increase problems of traffic congestion and air pollution.
	Air Quality	. . . air pollution from diesel is a huge concern from people with asthma. The air pollution from ships is from bunker fuel, the dirtiest fuel available. Now you can see the plumes of exhaust as ships approach and leave the 4 current Port. Ship, truck, and train traffic combined at ports create huge air pollution problems.
	Socioeconomic	And economic benefits for whom? The Port provides no revenue to the City or State. All money given and generated by the Port stays at the Port. It is spent on salaries, maintenance, and equipment for the Port.
	Introduction, Purpose and Need	The proposed plan to raise the Port 25 feet high will be paid for with 570 million CDBG funds. Once this section is raised up 25 feet, the Port will look for outside investors to pay for other acreage to be filled. This means that the outside investor actually builds and pays for a portion of the new facility.
	Socioeconomic	According to the previous mayor of Gulfport, Brent Warr, the government of China is ready to build a concession once it is permitted. The Chinese shipping company will operate the concession. They will own much of the operation of the Port of Gulfport, a facility with 20 times more capacity than the present Port.
	Introduction, Purpose and Need	. . . the Port needs to consider best practices similar to what has been used in Los Angeles
	No Response Needed	We are wanting the Port and this process to continue to be opened to the public and transparent.
William McCown	No Response Needed	I certainly believe that such a north/south roadway is necessary to take tractor-trailer traffic from the Port or into the Port and keep it from being primarily on Highway 49 through Gulfport.
	Roadway Traffic	But by having these on and off ramps, I also can see another consequence in that truck traffic that is coming south but is not intending to go into the Port would tend to see that roadway and those exit ramps as ways to access other parts of other cities by using Highway 90; therefore, introducing additional tractor-trailer traffic on Highway 90 going both east and west.
	Roadway Traffic	. . . delivery traffic or tractor-trailer-type traffic, even though it might be smaller than an 18-wheeler, would be looking for their quickest route north after they've completed deliveries and they likewise would be drawn on east and west Highway 90 to those on ramps such that they could quickly access the Interstate.
	Roadway Traffic	I believe there is some of this using smaller vehicles perhaps that uses existing north, south arteries and feeds out to be able to access the Internet -- the Interstate without having to come on Highway 90 to this central point that would be created. And therefore Highway 90 does not have such a volume of this truck traffic that these on and off ramps will create.
	Roadway Traffic	The Highway 90 exchange is only one of those. I see also other proposals and have heard of them that have to do with possibly on and off ramps at Pass Road in Gulfport. There's certainly a need for an on and off ramp at a storage facility that's located midway between Highway 90 and the Interstate. I can see the need for those ramps.
	Socioeconomics	The plans that I have heard from the Port for both the restoration and the expansion have clearly said that there are favored tenants that are being provided additional capacities to particularly try to boost their capacities. And those names of Dole, Chiquita, and Crowley have been specifically mentioned that they will be provided space perhaps to increase their capacity by 50 percent. It has been said that those would be offered as permanent facilities for existing tenants.

Commenter	Category	Comment
	Socioeconomics	All of these comments, I believe, focus on the west pier. There are other tenants in the Port now that have been there a long time beyond those three existing tenants. And they provide economic support to the area in terms of jobs and other economic impact.
	Socioeconomics	I believe that the plans are causing some tenants to relocate and I am suspicious that perhaps the arrangements are not as economically attractive, not as financially attractive to those other tenants as they are for these three tenants that I have mentioned on the west pier.
	Socioeconomics	If either of the restoration or the expansion were to drive away any of these existing tenants, I would think that would be a curious use of federal funds in that monies that are now supplied to the surrounding economies by these tenants having business would be eliminated.
	Socioeconomic	One particular tenant, I believe, provides a significant amount of support to the Pass Christian school system. And these are the types of impacts I would think that we would not want. Not that the expansion on the west pier is a bad thing, again. Not that the restoration is unnecessary. Just that if we're going to be retaining and expanding and permitting existing tenants, that should not be at the expense of other existing tenants.
Stephanie Thomas	Introduction, Purpose and Need / Alternatives / Roadway Traffic	I feel that the project as a whole has been segmented because even though the Port has been mentioned in the scoping meeting, I have not heard anything about the Port connector road or the inland Port or the increased rail traffic. And all of these factors are going to be a detriment to my community.
	Roadway Traffic / Noise	The Port connector road will cut directly through North Gulfport, which is my community. It will bring a six-lane highway. This will bring obviously noise, pollution, air pollution from the exhaust. And it will disrupt traffic for the residents trying to get in and out of the community.
	Not Applicable	As also with the rail expansion will increase traffic of the railways.
	No Response Needed	A lot of my people are pedestrians and bicyclists, not just motorists who need to get in and out of the community. So this will be a problem because we are already, quote, unquote, boxed in because of 49 dividing our community.
	Not Applicable	. . . this brings me to the inland Port, which in Hurricane Katrina these Crowley, Dole, and Chiquita containers devastated the Westside Community when the storm surge came in, picked them up and torpedoed them into homes. This would be the same thing that will happen to my community because it's only two miles north of the Westside Community. So the next time a Hurricane Katrina, per se, happens these containers stand the risk of being picked up by the wind or moved by the storm surge into our homes.
	Community Infrastructure and Municipal Services	We are already lacking infrastructure, lack of drainage in our street sewer systems.
	Not Applicable	. . . the proposed acreage that they want to put the inland Port and storage containers on was the part of wetlands that provided a buffer from the wind and storm surge that protected us in Hurricane Katrina. So not only will they take away that buffer of wetland and flood protection, they will replace it with TEU's that could be torpedoed into our homes.
	Roadway Traffic	And then in the event of a hurricane, we will not be afforded the opportunity to evacuate because we shall be boxed in by this increased rail traffic. We'll be boxed in by this Port connector road, and we'll be boxed in by this inland Port and the truck traffic that's going to come through our community in their efforts to, quote, unquote, evacuate these containers from the Port into our community. So not only will we be boxed in, we will be bombarded by these same containers.
	No Response Needed	I also feel that the Port Authority has not been clear, has not been honest. I don't feel like the whole process has been included with a sense of connectedness. I feel like it's been segmented, and I feel like there's a lot of things that are not being brought to the table and to be a part of the conversation. I would like more conversation on these other issues that I just previously mentioned, the Port connector road, the inland Port, the increased rail traffic. I do not want it to be segmented.

Commenter	Category	Comment
	Socioeconomic	I would like for more attention to be paid to the fact of the location of these proposed projects. North Gulfport, just to give a little bit of history, is a historically African American low-income community. And I feel like this is one of the determining factors as for the proposed location of these projects. Maybe they feel like we as a people don't generate enough revenue, we don't pay enough tax dollars, or we're simply just not that important as to why they want to put these things in our community. But we are people, too, and we deserve a fair chance to live in a healthy environment.
	Socioeconomic / Noise	A lot of my people are already suffering from asthma, diabetes, heart problems, things that noise pollution and diesel exhaust will contribute to.
	Socioeconomics	I feel like we as a poor African American community already lacking access to good health care and medical assistance. I feel like this project will further devastate us.
	Socioeconomics	I don't see any of these funds coming into our community directly from this project. I don't feel like it's going to benefit us, only cost us.
Rose Johnson	Socioeconomics	. . . nobody is addressing environmental justice.
	No Response Needed	Now, there have not been any meaningful involvement in this process, particularly when you hold a hearing or a scoping meeting outside of the area that's affected most from this project.
	Not Applicable	The Port connector road -- in order to do the Port connector road it would have to fill 162 acres of wetland. And that would increase flooding in the North Gulfport community, a community that is already suffering from flooding. This project would only make a bad situation worse.
	Not Applicable	The Port connector road would increase traffic.
	Socioeconomics / Air Quality	Most of the people in North Gulfport are low income, as I said. Most of them have a high rate -- there's a high rate of children in the community that suffers from asthma. We have a lot of cancer. We have a lot of diabetes. We have people with HIV and AIDS. And the diesel exhaust from these trucks would just further degrade the quality of life of -- the quality of life of the people and further degrade the environment.
	Not Applicable	We would like for the government -- I mean, the regulators to broaden the scope of the EIS and include the Port connector road.
	Air Quality	And like I said, we are very concerned about the air pollution.
	Noise	We're concerned about the noise.
	Socioeconomics / Community Infrastructure and Municipal Services	We are concerned about the rail yard that's coming through a low income minority community.
	Noise	We're concerned about the noise, the vibration from the rails, how it will affect the homes of the people that live near the railroad.
	Air Quality	There is also diesel exhaust that would harm the people coming from the locomotive of the train.
	Not Applicable	We are also concerned about an inland Port being built within 100 feet of our community.
	Not Applicable	Most of these projects -- all of these projects are related to the Port expansion. And we feel that this connective action, that they should connect the action and group all of these related activities to one -- one project. And that's the Port, all of it is connected to the Port. And that one EIS should be done, that the Port connector road, the inland Port, the rail yard, all of that. The Port cannot function without the Port connector road, without the rail yard, without the inland Port. So all of this should be considered as one study. It should be considered as one group. And all of these should be included in the EIS.
	Socioeconomics	We further feel that this is a violation of our civil rights that they consider the Title VI, Civil Rights Act; that they also consider President Clinton's Executive Order 12898 that addresses environmental justice. And the purpose of this order is to ensure federal agencies addresses disproportionate and adverse environmental and health impact on low and minority communities.
	Not Applicable	. . . if they're allowed to bring the Port connector through North Gulfport that we will and the rail yard and inland Port, you will see the health of the people in just a few years decline -- rapidly declining.

Commenter	Category	Comment
	Public Involvement, Review, and Consultation / Socioeconomics	. . . it is not fair because we had not had -- there has not been public participation. We feel that -- that they are able to do that -- to do this project because they have the political clout, they have the influence, and they have the resources. And that we -- and that the African American communities does not have the political clout, does not have the resources, and does not have the influences. And so they do what they can get away with, because they do not view African Americans as they do not consider African Americans to be valuable.
	Socioeconomics	We feel that we should not have to sacrifice our health and the environment for jobs.
Ouffut Transcript:		
Reilly Morse	Socioeconomic	. . . the issue of environmental justice is necessary to cover. It was not listed among the items to be considered in the presentation, and it should have been. In this case, the environmental justice effects concern the disproportionate adverse impact of the port and the connector road and railway upon nonwhite communities in Gulfport.
	Air Quality / Noise / Roadway Traffic / Community Infrastructure and Municipal Services / Socioeconomics	The air quality, the noise, the disruption of traffic flow, the physical division of several of these communities by the highway, the railway, and this new port connector road fall almost exclusively upon communities that are majority black in west Gulfport. The diesel fumes that will come from the ships, from the port, from cranes and other equipment for moving the cargo, the railways, and the long-haul trucks will saturate a corridor that is majority black.
	Alternatives	The scoping should consider alternatives that will reduce the adverse concentration of air pollution in this corridor, including cold ironing the vessels, requiring them to hookup to electrical power; electrical-powered cranes, gantries, and other moving equipment on the port facility itself; requiring low sulphur fuel to be used by the vessels and the long haul trucks; requiring electrical power to be used for the generators and the other equipment on-site.
	Introduction, Purpose and Need	The other part of the scoping that needs to happen is that this needs to have -- seems to be assessed in connection with other permanent activities that are underway, including the 84-acre expansion, the expansion of the railway, and the expansion of the port connector road.
	Socioeconomic	. . . the scoping needs to assess the economic benefit proposed here and whether the move to semi-automated facilities will actually decrease jobs, which would mitigate against this expansion.
Linda St. Martin	Not Applicable	Before I get into my substantive comments, I would like to say I object most strenuously to the procedure and the way it's being handled . . . In the first place, Balch & Bingham has no part -- should have no part of being on the staff of running this show. They stand to make a lot of money off this project, and it is extremely inappropriate and it makes the Corps of Engineers look really bad.
	No Response Needed	People came here to make their comments, yes, they did. But we want to hear our own personal neighbors and hear what they say. It is important to us, and we want to know what they have said and what they are saying.
	No Response Needed	One other little thing I want to get out of the way is the concessions area. Now, there are lots of big questions surrounding that concessions area. And about the concessions, I just have this to say: I do not want any Chinese toothpaste. I do not want any Chinese pet food. I don't want to give my kids any Chinese milk. I don't want any Chinese Sheetrock in my house. And I don't want any Chinese concessioners calling the shots in the port of Gulfport.
	Socioeconomics	This project will cost us hundreds and hundreds of jobs in the charter boat industry, the tourism industry. They keep saying they're going to create jobs; I don't believe that . . . What I see it doing is costing us jobs. And if you spend $571 million of community block grant money to get 570 jobs, you're breaking the law. You've got to have more jobs than that for the money spent, and we all know it . . . it will have an extremely detrimental impact to our tourism industry.
	Air Quality	It's going to be very detrimental to the environment. As far as air quality is concerned, it is going to be filthy. There are totally inadequate controls being considered to make this air quality work . . They're going to have, you know, tons of diesel fumes going into the air, nasty diesel trucks. There are no rules right now about the size and number of trucks coming into the city of Gulfport, and they have no plans to make any. They're not even addressing that.

Commenter	Category	Comment
	Socioeconomics	Do they really think that these other ports are going to stand by and let all of that business come to Gulfport when it's not coming there now? . . . The other ports are going to kick in and do stuff, and there will be no benefit here to anybody except the contractors doing the construction.
Therese Collins	No Response Needed	I'd like to put in the record the notes of the Gulf Restoration Network as part of our official comments, also, which are in this piece of paper. Their comments are submitted as part of our comments.
	Introduction, Purpose and Need / All Applicable Resources	This EIS scoping hearing process needs to be expanded to include all ports required projects. The cumulative and secondary impacts of the direct and indirect activities must be considered, and it does not appear that that is being done. The port EIS must include all projects to make -- that are required to make the port work: the roads; the rails; the dredging; the runoff; sewage; wastewater; noise; lighting; you know, all the things that would make the port work need to be part of the EIS. Perhaps this needs to be expanded to be a programmatic EIS for the port project.
	Socioeconomics	It seems that the environmental justice issues have not been considered.
	Not Applicable	The required channel dredging has not been considered. The dredge spoil disposal plan is not part of this. We have no idea what you're doing to do with that.
	Introduction, Purpose and Need / Alternatives	We have a lack of information, and before we can scope the project, we need more information about what the project is 'because it's changed even since the public notice was put out.
	All Applicable Resources	Again, air quality, water quality, cumulative and secondary impact, environmental justice, future dredging requirements of the port to make this work, this needs to be part of the scoping and the EIS process and the permit process. It appears that different agencies are applying for different permits therefore diluting the true impacts of this port on the environment, on the people, on the ecology, on the economy of the Coast . . . So we can't truly get a picture of the impacts of the project because it's been piecemealed, and the Corps only has one part of that . . . it would appear to me that the Corps has the power to pull these together and make all parts of what is required by the port project or the port itself to be part of one project.
	Socioeconomic	The economic benefits of the project don't seem to be -- don't seem to correlate with the economic costs, and that needs to be properly analyzed. So the cost benefit analysis needs to be reconsidered because it looks like we have a lot more taxpayers' dollars going into the project than will come out of the project.
	Alternatives	All alternatives to the project must be considered. Whether it's financial, ecological, environmental, or environmental justice, all things need to be considered.
	Socioeconomics	There's a disproportionate benefit to corporations than there are to individuals and taxpayers, and this needs to be considered.
	Water Quality / Aquatic Ecology	The runoff from the port, there seems to be containment, but we have no knowledge of what's going to happen. Once that is contained, where is that runoff going to go? . . . will that require the sewer plants to be upgraded to handle the chemicals and the oils and the grease and everything else that will be coming off the port site? Because that would be a negative impact on the environmental quality of the water, and it would have a negative impact on the resources that live in and on the water and in the sands around the port.
	Geology / Physiography, Topography, and Bathymetry	The littoral transport is being totally disrupted by the filling of this project, and they it seems to be no analysis or no -- no information given to us about how that's going to be handled. Because you're stopping the transport of sand by putting this port so far out, so how is the sand going to be replenished west of the port?
	Public Involvement, Review and Consultation	And there seems to be no meaningful effort to allow the impacted communities to be involved in the scoping process itself.
	Introduction, Purpose and Need / Public Involvement, Review and Consultation	The breakwaters, the sedi -- the whole thing is so confusing that I think they need to come back and have another scoping hearing and give us the true scope of this project and not piecemeal it together, because this is a completely confusing process. And I've been part of EIS projects and scoping before, and this seems to be totally -- not unorganized but totally confusing for the public.
	Socioeconomics	. . . show me the financial benefit of the port. And how are we going to recoup those tax dollars to make this port pay itself?

Commenter	Category	Comment
	Introduction, Purpose and Need	The rail improvements, the multimodal operations, they spoke about all these being part of the port project yet it's not part of the scoping of this hearing, of this EIS. So they're saying one thing, but we're not allowed to talk about it because it's not part of the scoping.
	Not Applicable	So we really need to go back to the start, put all projects related to the port into one permit application to include all parts of the project that makes the port work: dredging, dredge disposal, roads, railroads, the same thing I've said before but we will put in public comments.
	Socioeconomics / All Resources	The environmental analysis of this thing just seems to be flawed or inadequate, and the cost-benefit analysis seems to be inadequate.
	No Response Needed	And not having public comments at a public hearing for us to benefit from other people -- whether you're for or against the port, it doesn't matter. But we will put comments in the record because, obviously, this a little confusing.
	Cumulative Impacts	It appears that the true scope of the project is not being is being piecemealed into individual projects. So therefore the Corps is not looking at the total project in the cumulative -- the total cumulative and secondary impacts of this project . . . if you're going to scope the project, you need to look at the whole project, not one part of it.
	Air Quality / Noise / Roadway Traffic / Aquatic Resources / Socioeconomics / Vegetation / Wetlands and SAV	Air quality; noise; traffic flow; water quality; impacts on our seafood resources, the things that live in the water; dredge disposal; the impacts on the barrier islands, because we're going to have to have channel dredging to support the port project.
	Socioeconomics	If this project were taken to a bank with the business plan that you have now, would a bank approve the project? And I think the same analysis should be allowed for a public project. If the benefits don't outweigh the costs and the impacts, the project should not be allowed. And I don't think they've proven that the benefits outweigh the impacts and the future cost on the taxpayers.
	No Response Needed	. . . future scoping hearings need to be open to the public with public comments openly given by the audience so that we all benefit from the comments that anyone would say, whether you're for or against it.
	No Response Needed	. . . these hearings should be held near the community that's being impacted so those people can be part of the public process. There is a public high school not far from the community that's being impacted, so there's no reason that this could not be held near the community that's being impacted . . . All these meetings should be held closer to the neighborhoods that are being impacted. The facilities are available, so it's not a lack of facilities.
Howard Page	Air Quality	This project, the expansion of the port of Gulfport, the EIS that's being requested here will greatly increase air pollution
	Socioeconomics	. . . (it) will also use funds that were designed to create jobs and economic opportunity for persons affected by Katrina . . . Persons affected by Katrina that are looking at a half billion dollars of money that is dedicated to improving their economic condition are looking at this project being done and creating about 1200 jobs, which is a very poor job creation result.
	Air Quality	. . . the proposal of the port is to fill in the water bottoms of the United States, 400 acres, elevate 25 feet above sea level. This involves bringing a great deal of fill dirt through the city of Gulfport. This dirt comes through in trucks that are uncovered. It produces dust.
	Roadway Traffic	It congests traffic. This process will go on for years.
	Air Quality	. . . equipment will be put in that handles containerized shipping containers that come into the port of Gulfport from allover the world . . . there's an increase in air pollution. There's an increase in air pollution which has not in any way been addressed by the applicant. When the ships come in, the ships burn bunker fuel. They burn very, very dirty fuel.
	Air Quality	The ships should use fuel switching. The fuel switching they should use should be similar to fuel switching used at many other ports on earth. I would suggest that 50 miles out, the ship switches over from the fuel it burns on the open sea, the dirtier fuel, to the cleaner burning fuels that are available as they approach and leave the port of Gulfport.

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Commenter	Category	Comment
	Air Quality / Commercial and Recreational Navigation	I would also suggest, similar to other ports, that the speed limit of approaching ships and of departing ships from the port of Gulfport be reduced to a speed which reduces the emissions from these ships.
	Air Quality	When the ships arrive in port, they should use cold ironing, which is when the ship turns off its own generators and engines and runs off of shore power. This stops the ships from idling while in port and adding to air pollution. They switch over to the shore power.
	Air Quality	The port should maximize in the interest of public health not of offering the cheapest product to their customers but with some consideration of public health -- they should maximize the use of zero pollution and low pollution equipment. This includes the cranes; the generators; the other dockside equipment, including forklifts and other cargo handling equipment.
	Socioeconomics	The present port is looking at a facility that could handle 4 million or more TEUs of containerized shipping traffic a year. This is a huge amount of traffic compared to the present level.
	Air Quality / Noise / Railway Traffic	When cargo is offloaded from a ship and it goes to rail, this rail is now being upgraded to go 49 miles an hour and double stacked. This will greatly increase noise pollution and air pollution, particularly the closer you are to the source of pollution. Communities that live very near to existing rail lines will be the most affected. In addition, they will be affected by noise from the trains and congestion and safety issues of having that much industrial activity near a residential area.
	Air Quality / Roadway Traffic	The trucks have no requirement to use clean burning trucks or any hours of operation being limited or any truck routes in Gulfport being limited. All of these issues should be addressed. Trucks who travel in and out of the port of Gulfport should meet the same standards of trucks that travel in and out of the port of Los Angeles. The port of Los Angeles has an existing standard in the interest of public health. A policy involving local officials, representatives of the Port, and the public should come up with a policy for commercial truck traffic in Gulfport. This policy should include what routes are allowed, times of operation, and types of cargo.
	Roadway Traffic / Socioeconomics	The trucks are also requiring an elevated port connector road to take them to and from the port, to the port from the interstate. This connector road will concentrate traffic in low income and minority neighborhoods. It will cause a 162-acre wetland fill that will greatly increase local flooding. It will devalue local residential property. An alternative to the elevated connector road is a dedicated truck road using existing surface streets. This option should be considered.
	Not Applicable	The Port has a property in north Gulfport, the Inland Port Facility. It's a l50-acre facility of which approximately 35 acres will be used by the Port for container evacuation during hurricanes. This activity is improper in a residential neighborhood, a residential area. The noise; air pollution and lights -- lighting, commercial lighting; and commercial fencing are completely inconsistent with the character of the surrounding area. A far better alternative is to find a similar property north of Interstate 10 which is not near residential neighborhoods, residential areas, and is further from the strong effects of coastal storms. This combined alternative of using existing surface streets instead of the elevated road and of locating the evacuation facility north of I-l0 will stop the need for the 162-acre wetland fill, be far cheaper to do, and move the bad effects of container evacuation out of a minority neighborhood and into a more appropriate location.
	Introduction, Purpose and Need	If an effective container evacuation program can be done, the need to elevate the port 25 feet -- the port may not need to be elevated 25 feet. The only reason to elevate the port now 25 feet is to raise it out of the threat of storm surge. At 25 feet, the containers will still be 2.8 feet below the storm surge of Katrina. This present plan does not achieve its goals of protecting the footprint of the port during storms.
	Introduction, Purpose and Need	Another goal that this project does not achieve is any storm protection for the city of Gulfport. In addition to protecting the port itself, which this project does do in limited situations but fails to do in situations such as Katrina, there is no additional protection to the city of Gulfport. The Port has been including this in its public information, and it is completely false. Money that is actually used to help people recovering from Katrina should not be used for a project that claims to offer storm protection but there's absolutely no facts behind the claims.

Commenter	Category	Comment
	Socioeconomics	. . . this heavy investment in automation allows the Port to do a great deal of work with fewer workers. As a result, job creation of this project is very poor. There are actually situations where the Port could increase two or three times the amount of container traffic going through it right now and lose jobs. This means that the money is spent, the traffic is increased, and jobs are lost.
	Socioeconomics	The jobs that are being created are high-tech jobs at an automated port. Presently, there is no training specifically available to low income or minority citizens to help them create career paths to benefit from this project. Given the technical nature of many of these jobs, it will be most efficient to import already trained workers unless specific requirements are made to hire locally.
	Not Applicable	The dredge that has been requested to 45 feet so that this port can handle Panamax ships, which are designed to pass through the newly upgraded Panama Canal, will cause great problems from the constant maintenance. Many of these problems will be in maintaining the barrier islands. The channel acts as a sediment trap and traps sediment that can build the islands. Wider and deeper channels trap more sediment.
	Socioeconomics	. . . the expense of the dredging will not result in economic activity that justifies it.
	Socioeconomics	Many of the effects of this project fall most heavily on low income and minority neighborhoods . . . None of the applicant's -- none of the information in the applications indicates any environmental justice issues with this project. The fact that environmental justice issues are not recognized means that no solutions are offered. The environmental justice effects of this project should be recognized, and the solution should include using as much clean technology and community involvement to reduce the negative health effects of diesel pollution.
	Alternatives	. . . the best solution is to leave the port at its present level, modernize the existing facilities, plan for a much smaller amount of container traffic, use existing surface streets instead of the elevated connector road, and move the evacuation facility north of 1-10.
	Introduction, Purpose and Need	Segmentation of all of these issues has been a constant problem. All of the cumulative effects of the road, the rail, the inland port, the existing 84-acre expansion of the port, and the future 400-acre expansion of the port should be considered with respect to air and water pollution as well as economic benefit.
Petition Letter to Damon M. Young:		
Various commenter's (see petition names list)	Introduction, Purpose and Need	This project does not provide additional protection from storms to Gulfport, except for the immediate elevated area of the port.
	Introduction, Purpose and Need	The finished port, raised to 25 feet, will still be two feet below the level of the storm surge from Katrina and therefore fails to achieve the goal of storm resistance at a high cost.
	Socioeconomics	The project will spend Katrina Community Development Block Grant recovery funds for economic recovery while creating few jobs and may reduce jobs from the present port operation levels.
	Socioeconomics	There has been no study done to determine what jobs will be created by this project.
	Introduction, Purpose and Need	All parts of this project have been poorly or falsely presented to the public and this poor presentation of information has prevented the informed participation of affected communities.
	Socioeconomics	No part of the port expansion has acknowledged the environmental justice effects of the project.
	Socioeconomics / Air Quality	There has been no study of the health effects of this project on local communities impacted by the project.
	Roadway Traffic / Air Quality / Noise	The effects of a substantial increase in truck traffic through Gulfport which will cause traffic congestion, air and noise pollution.
	Not Applicable	The effects of a port connector road through residential areas which will concentrate air pollution along its route and the loss of flood protection of an associated 162 wetland fill.
	Not Applicable	The effects of the port at the 33rd street property on communities for storage of shipping containers during storms.
	Community Infrastructure and Municipal Services	The effects of the proposed increase in the speed of trains traveling up to 49 mph through Gulfport and a significant increase in train traffic.
	Air Quality	The cumulative detrimental health effects of the port expansion project on air quality including an increase in air pollution from ships, trucks, trains, and port operations

Commenter	Category	Comment
	Socioeconomics	The lack of substantial job creation for a project that will spend $570 million in CDBG Katrina recovery funds and that may result in job losses at the port.
	Socioeconomics	Environmental justice effects of the project.
	Air Quality	The need for a comprehensive study of the health effects of this project on community health.
	Socioeconomics	The need for a comprehensive study of the economic effects of this project, including possible detrimental effects on the tourist and hospitality business.
	Not Applicable	An alternative location for the evacuation facility from the port's 33rd street property, such as a location north of I-10.
	Introduction, Purpose and Need / Public Involvement, Review and Consultation	The effect of the lack of truthful and complete information provided by the applicant to the public for the permit including: the expansion of the port; the port connector road; the rail expansions and the port's 33rd street evacuation property.
	Introduction, Purpose and Need / Cumulative Impacts	All connected actions cumulatively, which have been considered separately, but are clearly connected.
Chad Miller		Would like to stay informed about the progress of the project. / Add to mailing list. / Prefers electronic communication
Patrick Carter		Would like to stay informed about the progress of the project. / Add to mailing list.
Narissa Behrens		Would like to stay informed about the progress of the project. / Add to mailing list. / Prefers electronic communication
Heinx Mueller, EPA	Introduction, Purpose and Need / Alternatives	The ports current capacity (permitted), usage of that existing capacity, and projected capacity associated with the proposed expansions and proposed usage should be discussed in the EIS. Any underlying capacity deficiencies or needs that exist should also be discussed and data or analysis to substantiate each identified need or deficiency should be presented.
	No Response Needed	EPA supports efforts to reduce the overall footprint on any proposed expansion as a means of minimizing adverse environmental and/or societal impacts.
	Alternatives	The EIS should include action alternatives which should be fully considered in addition to the No-Action Alternative. Alternatives should be considered that meet the basic purpose of the project including improved management of existing capacity. Alternative that support also be considered that may fulfill the projects purpose and need. When alternatives are rejected, a rationale for rejection should be provided.
	Air Quality	The EIS should contain a discussion of the regulatory transportation air quality requirements, air quality concerns in the project area, and a carbon monoxide (CO) analysis. The document should assess existing air quality conditions in terms of National Ambient Air Quality Standards (NAAQS), Federal Prevention of Significant Deterioration (PSD) increments, and state air quality standards (if they are more stringent than the federal regulations).
	Air Quality	Mississippi is currently in attainment of the NAAQS. If the project is not located in a nonattainment or maintenance area, the EIS should make a negative declaration for Section 176© of the Clean Air Act. EPA, however, expects to have new ozone designations by July 29, 2011 and Gulfport might be affected by the new designations.
	Air Quality	If so, then the EIS will need to consider the emission impacts associated with the proposed port expansion. EPA also recommends that the project implement overall diesel emission reduction activities through various measures such as: switching to cleaner fuels, retrofitting current equipment with emission reduction technologies, repowering older engines with newer cleaner engines, replacing older vehicles, and reducing idling through operator training and/or contracting policies. EPA can assist in the future development or implementation of these options.
	Air Quality / Sea Level Rise	Climate Change Adaptation Task Force has made recommendations for impacts from climate change. ... ...The EIS should consider how issues related to climate may affect their proposed action and discuss any proposed adaptive management measures (i.e., sea level rise).
	Air Quality	Evaluation of the project should include consideration of the impacts of air toxics emissions from ships, trucks, and other port-related facilities on nearby population centers and sensitive populations.
	Air Quality	The EIS should include an inventory of air toxics emissions (including diesel emissions) from both stationary and mobile sources that serve the facility, including the locomotives, switchers, tractors, and support equipment, etc.

Commenter	Category	Comment
	Air Quality	It should also include a screening level evaluation of the potential impacts of these emissions on neighboring populations. The evaluation should include a description of the recent literature concerning the impact of air toxics emissions on near-Port receptors, including sensitive receptors such as children and the elderly. The evaluation should also describe the methods that will be used to mitigate any unavoidable emissions and impacts.
	Clean Water Act Section 404(b)(1)	The requirements of the Section 404(b)(1) Guidelines must be fully and completely considered if this project is to move forward.
	Introduction, Purpose and Need / Alternatives / Clean Water Act Section 404(b)(1)	Developing the least environmentally damaging practicable alternative and associated requirements of section 230.10(a). The least environmentally damaging alternative is determined by utilizing the project's "best project purpose". If the basic project purpose can be achieved by less environmentally damaging means then EPA would prefer those. Currently, the applicant's basic project purpose is vague (i.e., to enhance the state's standing in the global economy) and conceivably can be done by not filling in 400 acres of marine bottom. EPA will review the basic project purpose and the least environmentally damaging practicable alternative to achieve that purpose very carefully.
	Water and Sediment Quality / Threatened and Endangered Species / MPRSA / Clean Water Act Section 404(b)(1)	The EIS should include information which addresses the Guidelines' prohibition on allowing the potential effects of the fill to cause violations of state water quality standards, applicable toxic effluent standards, jeopardize threatened and/or endangered species or their habitat (e.g. Gulf sturgeon) and/or violate any requirements of the Marine Protection, Research, and Sanctuaries Act.
	Clean Water Act Section 404(b)(1)	Information should be provided based upon the appropriate factual determinations, evaluations and tests required by the Guidelines in Subparts B and G after considering information outlined in subparts C-F.
	Mitigation / Clean Water Act Section 404(b)(1)	Information also will be needed outlining how impacts have been avoided and how the unavoidable impacts will compensate, Compensation for any unavoidable impacts will have to comply with Subpart J, Compensatory Mitigation for Losses of Aquatic Resources (aka, the Mitigation Rule of 2008.
	Threatened and Endangered Species	Impacts to threatened and endangered species should be discussed in the EIS.
	Socioeconomic	…. the EIS should examine the effect of the port expansion project facilities on minority and/or low-income populations. The EIS should identify, analyze and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.
	Socioeconomic	The EIS should include a demographics analysis of the affected project area. ….This information should be used in conjunction with information acquired during the public involvement and ground verification process.
	Public Involvement, Review, and Consultation / Socioeconomics	The USACE should continue to provide opportunities for meaningful community engagement in the NEPA process, including identifying potential effects, minimization and mitigation measures in consultation with affected communities. A summary of the communities potential environmental justice concerns and the agencies responses to those concerns should be included in the EIS.
	Public Involvement, Review, and Consultation	Every effort should be made to improve access to public meetings, official documents and notices to affected communities.
	Socioeconomic / Roadway Traffic / Air Quality / Mitigation	At the public meetings, some environmental justice community representatives expressed concerns that included traffic-related concerns/diesel emissions. Efforts to minimize and mitigate adverse impacts should be outlined or analyzed in the EIS, whenever feasible, should address significant and adverse environmental effects of the proposed federal actions on minority communities and low income communities.
	Air Quality / Socioeconomic	The EIS should evaluate potential environmental and human health effects of proposed expansion on children. Impacts should be assessed including those resulting from heavier traffic and from the proposed port expansion which is likely to increase diesel emissions and possibly present or exacerbate existing public health issues (i.e. respiratory).

Commenter	Category	Comment
	Cumulative Impacts / Air Quality	The EIS should estimate cumulative impacts associated with the project. Cumulative impacts should include the additive effects of a given parameter for all contributing projects in the area, as well as the cumulative impact of all parameters for all projects in the area. The EIS should define what cumulative impacts would result from implementation of the proposed project. Existing or future projects (federal and non-federal projects) with attendant pollutants should also be considered. It is suggested that the spatial/temporal criteria of the analysis be given and that they be uniform throughout the analysis of the port project, if appropriate.
	Introduction, Purpose and Need / Alternatives / Cumulative Impacts	The USACE currently has a list of several projects or developments in the area that should be considered in this analysis including the proposed port connector road.

Appendix H3

Public Workshop 2012

NEWS RELEASE

U.S. ARMY CORPS OF ENGINEERS **BUILDING STRONG®**

For Immediate Release:
August 6, 2012

Contact:
Lisa Coghlan 251-690-2505
lisa.a.coghlan@usace.army.mil.

Corps to Hold Public Workshop for the Port of Gulfport Expansion

MOBILE, Ala. – The U.S. Army Corps of Engineers, Mobile District, invites the public to participate in a public workshop for the Port of Gulfport Expansion Project Environmental Impact Statement. The workshop will take place on Thursday, August 9, from 5:30 – 8:00 p.m., at the Westside Community Center, 4006 8th Street in Gulfport.

The purpose of the workshop is to provide further information about the project, including its scope, the alternatives under consideration, and progress to date. The workshop will open at 5:30 p.m. with an informal poster session during which attendees can view the project displays and review project handouts. A presentation will begin at 6:00 p.m. followed by an open house during which project personnel will be available throughout the meeting room to discuss the proposed project.

For more information, please visit the project website at www.portofgulfporteis.com.

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Proposed Port of Gulfport Expansion Project EIS
August 9 Public Workshop
Poster Slideshow Presentation Script

Thank you, Mr. Young. Good evening. I'd like to thank all of you for joining us tonight for the workshop. We're glad for the opportunity to discuss the project with so many people from the community. Before we move to the informal discussion portion of the meeting, we wanted to take a moment to go through all of the posters that are here tonight and tell you a little bit about each one. So I am going to show slides that contain the same information as the posters and provide some background information. After this presentation, during the informal discussion session, we will have Atkins and U.S. Army Corps of Engineers staff at each of these posters available to try to answer any questions you might have and discuss theproject. Representatives from the Mississippi Development Authority and Mississippi State Port Authority will also be here to address questions as needed.

NEPA Slide:

Before we start going through the posters, I want to take just a minute to review where we are with this project and the National Environmental Policy Act (or NEPA) process. In spring of 2010 the Mississippi State Port Authority submitted a permit application to the U.S. Army Corps of Engineers for various activities associated with the proposed Port expansion. This permit application was reviewed by the Mobile District Corps of Engineers, who determined the proposed expansion project was a significant effort and that under NEPA an Environmental Impact Statement, or EIS, would need to be prepared. In March of 2011 a Notice of Intent to prepare an EIS was published in the Federal Register and a formal scoping meetingwas held in March of 2011. Since that time the NEPA team, consisting of Corps of Engineers, Mississippi Development Authority, National Marine Fisheries Service, and Atkins staff, have been coordinating with the Mississippi State Port Authority and other state and federal agencies to compile, review, and collect information to evaluate the proposed project and its potential effects. At this time we are working to prepare the Draft EIS for public review and comment.

Purpose and Need Poster:

Let's begin with the Port's purpose and need for the proposed Port of Gulfport Expansion Project. Essentially, the proposed expansion is intended to create operational efficiency and additional space for new tenants to operate at the Port and to increase the number of containers that move through the Port each year. This is referred to as Twenty Foot Equivalent Unit, or TEU, throughput. One standard shipping container that you would see on a train or truck is usually 40 foot long and counts as two TEUs. In general, the higher the TEU throughput, the higher the jobs and economic benefits generated.

The Port would like to implement the expansion project so they can increase throughput that would contribute to the long-term economic development in the state and in the region. The proposed expansion would allow the Port to bring in new tenants and grow in size and throughput resulting in additional jobs and other direct and indirect economic benefits. Because the Port is situated on land built in the Mississippi Sound, it has unique constraints to growth. Essentially, land must be built up in the Sound for the Port to grow. That is why the Port applied for the permit from the U.S. Army Corps of Engineers, so that they could build more upland to provide space for new tenants and increased TEU throughput.

Restoration vs. Expansion Project Features Poster:

Slide 1

The next two slides will show graphics that are on one of the posters here tonight. The intent of this poster is to clarify the differences between the ongoing Restoration Project and the proposed Expansion Project. Many of you are familiar with the Restoration Project, which is currently underway and will increase the size of the Port footprint by 84 acres and will raise the elevation of the West Pier to 25 feet above mean sea level. The footprint of that project is shown here in gray. The Restoration project was permitted in 1998 as an 84-acre expansion project and was under construction with approximately 60 acres completed when Hurricane Katrina impacted the area in 2005, causing significant damage. As part of the post-hurricane recovery effort, funding was provided to restore the damage to the 60-acre project and to elevate the West Pier to provide protection against future storm damage. I'm sure most of you know they have completed the addition of the 60 acres and completion of the remaining 24 acres of fill to the West Pier is currently underway. Work has also started to raise the elevation from 10 to 25 feet on the West Pier.

Slide 2

The proposed Expansion Project is the project we are here tonight to discuss. The footprint of the proposed Port expansion is shown here in yellow. We'll go through the specific components of the proposed Expansion Project on the next slide. The main point here is to show the difference between the ongoing Restoration Project and the proposed Expansion Project.

Although it's not shown on this slide, I would like to point out that the proposed Expansion Project footprint is significantly reduced from that proposed in the original permit application. This is because following notice of the permit application for the proposed Expansion Project submitted in March 2010, the Port decided to reduce the footprint of the proposed expansion in response to comments received from the public and state and federal agencies and per recent market studies. The expansion proposed in the original permit application was intended to increase throughput to up to 4 million TEUs per year and fill 700 acres of Mississippi Sound

water bottoms. The currently proposed project is intended to increase throughput to up to about 2 million TEUs per year and fill approximately 300 acres of water bottoms.

Proposed PGEP Project Features Poster-Graphic:

This poster shows the features of the proposed Expansion Project in blue. The features include expansion of the West Pier, North Harbor, East Pier, and Turning Basin and a proposed breakwater. These features would help to increase the capacity and efficiency of the Port of Gulfport and allow the Port to increase the amount of containers that pass through the Port each year.

Please note that the proposed Port of Gulfport Expansion Project does not include any modification to the existing federally authorized navigation channel. Thus, the ship channel would not be deepened or widened as part of this project. However, there are other studies currently underway that are considering modification to the Federal channel.

The West Pier expansion is intended for use as a container terminal for new tenants. It would add approximately 160 acres to the completed Restoration Project. As you can see from this 2010 aerial photograph, the 84-acre addition to the West Pier that is part of the Restoration Project, was under construction. The proposed Expansion Project would continue to build upon the West Pier, at 25 feet above mean sea level, further south into the Mississippi Sound. This addition to the West Pier would allow more berthing area for ships, more space for container processing and storage for additional tenants, and road and rail access for transferring containers to and from the Port.

The Expansion Project also includes an 85-acre expansion of the Gulfport Turning Basin to the south, adjacent to the extended West Pier. The expanded turning basin would be dredged to a depth of 36 feet, consistent with the existing federally authorized turning basin. The Port would be responsible for dredging the turning basin expansion and maintaining it at the needed depth. It would not be part of the Federal Turning Basin that is maintained by the U.S. Army Corps of Engineers. This new turning basin expansion would allow ships to use the expanded West Pier.

The East Pier Expansion would extend the existing East Pier further south into the Mississippi Sound. It is expected to be about a 15-acre expansion that would provide for additional rail operations and warehouse storage.

The North Harbor Fill area is about 9 acres. It would create an upland area where the Copa Casino barge used to be in the North Harbor. The fill area would be used as a new berthing area for ships.

The breakwater to the east of the Federal Navigation Channel would provide wave protection to the extended West Pier. The design of the breakwater was tested in ship simulations by pilots that regularly navigate the channel. The break in the structure also provides access for shallow-draft vessels from Bert Jones Yacht Basin to the Federal Navigation Channel.

I want to note that as a result of the project approximately 7.4 million cubic yards of sediment would be dredged from the Mississippi Sound for construction. This material would be used as fill for expansion of the West Pier, placed in designated beneficial use sites, or placed in an approved Ocean Dredged Material Disposal Site. Additionally, it is expected that approximately 300,000 to one million cubic yards of material would be dredged over a 50-year period to maintain the expanded turning basin. This material would be placed in a desginated beneficial use site or placed in an approved Ocean Dredged Material Disposal Site.

Alternatives Poster (Text):

As part of theNEPA process, the NEPA team conducted a thorough evaluation of other projects being constructed, permitted, or proposed in the vicinity of the Port and evaluated them to determine how they should be addressed in the Environmental Impact Statement. Three projects were identified as relevant to the Expansion Project: the Restoration Project, the I-310 MDOT project (also known as Highway 601 or the Port Connector Road), and the KCS Rail Improvements Project. Because of the status of each of these projects in regards to where they were in the permitting and/or construction phase, how they were incorporated into regional planning documents, and when each project was expected to be complete, they were all rolled into the No-Action Alternative. This means that in the proposed Port of Gulfport Expansion Project EIS, it is assumed that each of these other three efforts would move forward and be constructed, regardless of whether the proposed Expansion Project is implemented or not.

Let me explain further. NEPA requires the EIS to describe the existing environment and then, in order to address potential impacts of the proposed action, a scenario is presented that looks forward in time, assuming the proposed expansion project is not constructed. This is called the No-Action Alternative. Then other scenarios are presented looking forward in time, assuming the proposed expansion project and possibly alternatives to the proposed expansion project are constructed. Comparison of impacts from the action alternatives can then be made to the No-Action Alternative so that the differences between constructing the proposed project or not can be clearly seen.

In the case of the proposed Expansion Project, it is assumed for the No-Action Alternative and all of the action alternatives, that the three efforts listed above (the Restoration Project, I-310 MDOT Project, and KCS Rail Improvements Project) have been constructed as permitted and are in place and functional.

For the No-Action Alternative, it is assumed that the permit for construction of the expansion is denied by the U.S. Army Corps of Engineers. Therefore, a future scenario is envisioned that assumes completion of the Restoration Project, I-310 MDOT Project, and the KCS Rail Improvements Project but without the proposed Expansion Project. In this alternative the Port would operate at between 250,000 and 400,000 TEU throughput each year.

The other two alternatives evaluated in the EIS are action alternatives. Both alternatives assume that the three projects are in place, just as for the No-Action Alternative, but they also add the Expansion Project in two forms. The first alternative assumes that the Expansion Project is permitted and operates at a medium efficiency, increasing TEU throughput beyond that anticipated for the Restoration Project. This medium level of efficiency combined with the extra tenant space provided for by the expansion would allow the Port to operate at up to about 1.2 million TEU throughput each year.

The second action alternative also assumes that the three projects are in place and that the Expansion Project is permitted and constructed and that it would operate at a level of efficiency higher than the first action alternative. This level of efficiency would be achieved by slightly reconfiguring the tenants on the space and increasing the level of automation at the Port. Such changes would allow the Port to operate at between 1.7 and 2 million TEU throughput each year.

No-Action Alternative Poster:

As you can see in this figure of the No-Action Alternative, it is assumed that the Restoration Project is complete and that the existing tenants are configured for wheeled and stacked handling of containers. Chiquita and Dole would both continue to operate using wheeled containters, loading the containers from the ships to be placed in the container yard without stacking containers on top of each other and using wheeled carts to move the containers around on the yard and to trucks or rail to be moved off the Port. Note that Crowley and the new tenant on Terminal #4 would use a stacked container operation in which containers are double stacked in the yard and are moved using rail-mounted gantry cranes to load and off-load ships. Also note that the improved rail line is shown in its existing alignment and that the I-310 MDOT road is expected to cross over Highway 90 at approximately 29th street.

Alternative 1 Poster:

The first action alternative is shown here. It's referred to as Alternative 1 and as previously mentioned it assumes a medium level of efficiency. As you can see, the footprint of the Restoration Project is configured the same as described for the No-Action Alternative, assuming the same tenants would occupy the space using the same type of operation. For this alternative it is assumed that the extended portion of the West Pier would provide concession space for

new tenants with stacked container operation, the same type of operation as used by Crowley. You can see additional rail-mounted gantry cranes used for loading and off-loading ships and the covered chasis storage area adjacent to the extended road and rail facilities. Wheeled chasis would be used to transfer containers to or from the container stacks to trucks or trains to be transported to or from the Port. This proposed layout assumes that all berths would be utilized as common berths. This extended West Pier would increase TEU throughput up to about 1.2 million TEUs per year by reducing handling times and increasing tenant space.

Alternative 2 Poster:

The second action alternative is referred to as Alternative 2 and as I mentioned before it assumes a higher level of automation and efficiency than Alternative 1. As you can see, the footprint is the same size as Alternative 1 but the operation on the West Pier extension is assumed to be a semi-automated operation instead of a stacked operation. Additionally, there is a staging area for loading and unloading between the container stacks and the road and rail system. For this alternative there is no warehouse shown on the northern end of the West Pier, which would provide increased space for wheeled containers. With this tenant layout and level of automation the extended West Pier would increase TEU throughput up to about 1.7 to 2 million TEUs per year.

Special Studies Poster:

Slide 1

Since preparation of the EIS for the proposed Expansion Project began, the NEPA team has been working to review, compile, process, and collect data to evaluate the potential impacts associated with the proposed Port expansion. To date, we have identified certain topics that have required additional study to properly assess project-related effects. For ease of viewing, I've split this poster into two slides.

Working with the National Marine Fisheries Service, we have conducted a benthic sampling study in which we sampled the sediment in the Mississippi Sound around the Port. The purpose of the study was to determine if the area was suitable for Gulf sturgeon, which is a federally protected species, or if the area included is what's called Essential Fish Habitat by National Marine Fisheries Service, meaning it provides food or shelter for important species found within the Gulf. These data have been collected and processed and we are currently preparing a report that will outline the results and recommendations from the study, which will be incorporated into the EIS.

Another study being done based on coordination with the National Marine Fisheries Service is a tagging and monitoring program for Gulf Sturgeon. This two-year study will begin in the next

couple of months and includes placing up to 40 electronic tags in young Gulf sturgeon and setting up about 19 recievers around the Port and between the Port and the Pascagoula and Pearl Rivers. This study will allow us to determine if Gulf sturgeon are crossing through the area so we can better understand how the proposed expansion might impact this endangered fish. This study will continue through the end of 2014 and results will be incorporated into the Final EIS and Record of Decision, as appropriate.

We've also determined the need to conduct a new road and rail traffic study to evaluate potential impacts resulting from the proposed Port Expansion. It is logical to assume that increased container throughput at the Port would result in more truck and train trips into and out of the Port facilities. Keep in mind that our look forward at impacts from the proposed expansion assumes that the I-310 MDOT project is completed and functional, as approved in their NEPA document, and that the KCS rail improvements have been completed, as approved in their NEPA documenation. The traffic study we will be conducting will include collecting current, real-time traffic counts at certain intersections in Gulfport that are most likely to be impacted by the proposed project. Engineers will then use existing regional traffic forecasts to determine what traffic would be for the No-Action Alternative, without the proposed expansion. They will then use container volume projections for Alternative 1 and Alternative 2, and forecast traffic associated with each into the future. By comparing this information to the No-Action Alternative, we will be focusing on the incremental difference in forecasted traffic between the future with and without the project. This traffic study will also include a projection of Port employee traffic. Highway capacity, traffic delays, and safety will be evaluated looking into the future at the years 2020, 2040, and 2060. The traffic study will also consider potential traffic impacts during construction of the proposed Port Expansion Project, taking into consideration construction employee traffic and traffic associated with transporting materials to the site via road or rail. Results of this study will be incorporated into the EIS.

Slide 2

Although air emissions studies have been done for the area, such as the emissions modeling that was done by MDEQ for the I-310 MDOT Project, none of them focused on the impact associated with the proposed port expansion, using the same container throughput and traffic volumes we are considering at this time. While this information is useful and will be used to the extent practical in the evaluation presented in the EIS, it was determined a separate analysis of air emissions needed to be conducted for evaluation of impacts specific to the proposed Expansion Project being considered by the Corps of Engineers. Therefore, using traffic forecasts from the traffic analysis, an air emissions study will be conducted. Like the traffic study, this study will assume that the I-310 MDOT project and the KCS rail project are constructed as permitted, in place, and functioning. The air emissions study will focus on construction and

operation of the expanded Port and, like the traffic study, will only consider the impacts associated with the proposed Port Expansion. To consider construction-related impacts, the analysis will look at air emissions from all construction equipment, both land-based and dredging, as well as construction workers and supplies traveling to and from the job site. Consideration of operational air emissions will take into account on-site facility emissions from large equipment such as cranes, emissions from ships, trucks, and trains transporting goods to and from the Port, and emissions from Port employee vehicles. The specific emissions studied will include those for which National Ambient Air Quality Standards have been established, like ozone, carbon monoxide, lead, and particulate matter, typical mobile air toxins like benzene, and formaldehyde, and greenhouse gasses associated with vehicle emissions, like carbon dioxide. Results of this study will be used in the EIS to determine impacts for the No-Action and the two action alternatives. As done for traffic, this will provide a look into the future both with and without the proposed Port expansion.

The EIS will also include an expanded evaluation of potential impact to areas designated as low-income or minority. This evaluation will provide a community-based analysis and will take into consideration issues such as air-quality, traffic, noise, and economics.

In addition to the studies I've already mentioned, the EIS will also include results of a container volume projection study and an economic impact study. The container volume study considers current container markets in the Gulf, takes into consideration ongoing efforts such as the expansion of the Panama Canal, and estimates potential future TEU throughput at the Port of Gulfport. To be consistent with typical U.S. Army Corps of Engineers planning guidelines, the study looks approximately 50 years into the future, which for our project that would be until about 2060. This container study describes four different potential future scenarios at the Port of Gulfport: a baseline projection, which is equivalent to the No-Action Alternative; a low-growth scenario, which assumes a lower growth rate than is currently expected based on existing markets and forecasts; a high growth scenario, which is consistent with Alternative 1;, and an optimistic growth scenario, which is consistent with Alternative 2.

The economic impact study considers the No-Action and two action alternatives and estimates job creation and revenue from construction and operation of the proposed expansion project. The study is based on previous economic studies and projections done at Gulfport and other ports such as New York, Los Angeles, and Long Beach. It is also based on a Port Economic Impact Kit developed at the University of Southern California and uses tools typical to the industry, such as a program called IMPLAN, to project direct, indirect, and induced jobs that could be expected from the proposed Expansion Project. Results of both of these studies will be included in the EIS.

Progress to Date Poster:

These last two slides show a timeline of what we have accomplished so far, the remaining steps to complete the NEPA process, and final steps to get to the decision by the U.S. Army Corps of Engineers whether or not to issue the requested permit.

As you can see here, this process was initiated in the fall of 2010. Since then, as I've mentioned, we have been collecting and evaluating existing information, conducting public involvement efforts such as the scoping meeting in spring of 2011 and this public workshop, evaluating existing conditions, developing alternatives to be considered in the EIS, and identifying the need for special studies.

Looking Forward Poster:

From this point on, we will continue efforts to evaluate potential impacts associated with the proposed Port of Gulfport Expansion Project to complete a Draft EIS for public and agency review. Upon completion of the Draft EIS, which is currently expected to be about this time next year, there will be a comment period and a public hearing. The comment period and public hearing will provide an opportunity for agencies and the public to submit formal comments on the proposed project and the information presented in the Draft EIS. We will then take about another year to process the comments received, prepare responses to the comments and revise the EIS as appropriate. The Final EIS will then be published for agency and public review and comment. This will be the final opportunity to submit formal comments. Those comments will be addressed in the Record of Decision, which will include the Corps' decision regarding whether or not to issue the requested permit. Up until about six months prior to the expected decision, which is currently anticipated in spring of 2015, we will be conducting special studies, such as the Gulf sturgeon study, to adequately address comments and evaluate the proposed expansion project.

This concludes the formal presentation and I'll turn it back over to Mr. Young. Thank you.

Appendix H4

Scoping Meeting 2013

Dated: May 3, 2013.

Aaron Siegel,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

DELETION:

F036 AFPC N

SYSTEM NAME:

Air Force Personnel Test 851, Test Answer Sheets (January 22, 2009, 74 FR 4012).

REASON:

This is a duplicate system of records; active records are covered under SORN F036 AFPC K, Enlisted Promotion Testing Record (March 21, 2013, 78 FR 17386). Therefore, SORN F036 AFPC N, Air Force Personnel Test 851, Test Answer Sheets, can be deleted.

[FR Doc. 2013–10983 Filed 5–8–13; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Department of the Army, Corps of Engineers

Modification of Permit Application and Intent for Additional Public Scoping for an Environmental Impact Statement for the Port of Gulfport Expansion Project, Harrison County, Mississippi (Department of the Army Permit Number SAM–2009–1768–DMY)

AGENCY: U.S. Army Corps of Engineers, DoD.

ACTION: Notice of Intent.

SUMMARY: The U.S. Army Corps of Engineers, Mobile District (USACE) announces a modification to a project proposed by the Mississippi State Port Authority (MSPA) for which an Environmental Impact Statement (EIS) is being prepared. The Mississippi Development Authority (MDA) and the National Marine Fisheries Service (NMFS) are cooperating agencies in the preparation of the EIS. The proposed port expansion project involves impacting up to 200 acres of open-water bottom in the Mississippi Sound from the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, dredging and dredged material disposal and infrastructure, and construction of a breakwater of approximately 4,000 linear feet. The recently received permit application modification proposes additional dredging and dredged material placement to modify the Gulfport Harbor Federal Navigation Channel (FNC) for a length of approximately 20 miles from the current federally authorized dimensions. The federally authorized turning basin would also be modified, as would the proposed turning basin expansion. The proposed project will include modifications to the authorized FNC and other navigation features to support a navigable channel depth of up to 47 feet in the Mississippi Sound and 49 feet in the Bar Channel plus advance maintenance and allowable over depth requirements. Modification to navigation features adjacent to the port facilities include deepening the existing Federal turning basin area and port berthing areas, a turning basin expansion, and new berthing areas. Widening the channel may be requested based on results of planned ship simulations. Final channel design and associated environmental impacts will be addressed during the permitting and EIS process. The EIS will evaluate the effects of construction and long term effects of the proposed expansion and channel modification, including placement of new work and maintenance dredged material in beneficial use sites or other placement areas, such as open water and ocean dredged material disposal sites. Alternatives to the proposed action will be evaluated in the EIS, which will assist the USACE in deciding whether to issue a Department of the Army permit.

The purpose of this Notice of Intent is to inform and educate the public of changes to the proposed project; invite public participation in the EIS process; announce the plans for an additional public scoping meeting; solicit public comments for consideration in establishing the scope and content of the EIS; and provide notice of potential impacts to open-water benthic and other habitats potentially impacted by the project.

DATES: A scoping meeting will be held on May 21, 2013. Comments will be accepted in written format at the scoping meeting or via mail/email until June 17, 2013. To ensure consideration, comments should be post-marked by this date. Late comments will be considered to the extent practicable.

ADDRESSES: The scoping meeting will be held at the Courtyard Marriott Gulfport Beachfront Hotel, 1600 East Beach Boulevard, Gulfport, MS. Written comments regarding the proposed EIS scope or permit application modifications should be addressed to Mr. Damon M. Young, P.G. USACE, Mobile District, Post Office Box 2288, Mobile, Alabama 36628. Individuals who would like to electronically provide comments should contact Mr. Young by electronic mail: *port.gulfporteis@usace.army.mil.*

FOR FURTHER INFORMATION CONTACT: For information about this project, to be included on the mailing list for future updates and meeting announcements, or to receive a copy of the DRAFT EIS when it is issued, contact Damon M. Young, P.G., at the USACE at (251) 694–3781 or the address provided above. Mr. Ewing Milam, at the MDA can also be contacted for additional information at P.O. Box 849, Jackson, Mississippi 39205–0849, telephone (601)–359–2157 or by electronic mail at *emilam@mississippi.org.*

SUPPLEMENTARY INFORMATION:

1. *Background:* The Gulfport Harbor Navigation Project was adopted by the Rivers and Harbors Act approved on July 3, 1930 (House Document Number 692, 69th Congress, 2nd session) and the Rivers and Harbors Act approved on June 30, 1948 (House Document Number 112, 81st Congress, 1st session). Construction of the existing Gulfport Harbor commenced in 1932 and was completed in 1950. The FNC is approximately 20 miles in length, including 11 miles of channel in the Mississippi Sound (Sound Channel), 2 miles of Bar Channel, and 7 miles of channel in the Gulf of Mexico (Gulf Channel). Authorization to conduct improvements to the harbor was issued in the Fiscal Year 1985 Supplemental Appropriations Act (Pub. L. 99–88). The Water Resources Development Acts (WRDAs) 1986 and 1988 further modified the previous authorization to cover widening and deepening and thin-layer disposal, respectively. The authorized deepening was completed in 1993. In 2012 the channel was widened to the federally authorized dimensions. The navigation channel is currently federally authorized at 36 feet deep and 300 feet wide in the Sound Channel and 38 feet deep and 400 feet wide in the Bar and Gulf Channels. The Port's North Harbor (Inner Harbor) is authorized at a depth of 32 feet and the South Harbor (Outer Harbor) and Gulfport Turning Basin are authorized at a depth of 36 feet. A Department of the Army Permit MS96–02828–U was issued in 1998 authorizing an 84-acre expansion to fill the West Pier to construct new tenant terminals and infrastructure. Phases I and II of that project are complete and Phase III is currently under construction.

2. *Location:* The proposed Port of Gulfport Expansion Project is located in the City of Gulfport, Harrison County, Mississippi. The proposed project is approximately 80 miles west of Mobile, Alabama, and 80 miles east of New Orleans, Louisiana. The Port encompasses approximately 184 acres

and is located within 5 miles of the Gulf Intracoastal Waterway (GIWW) and approximately 7 miles south of Interstate Highway 10. The FNC runs from the Port, between Cat and West Ship islands (in Ship Island Pass) into the Gulf of Mexico and is approximately 20 miles long.

3. *Work:* The proposed project involves filling of up to 200 acres of open-water bottom in the Mississippi Sound, the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, expansion of the existing turning basin, dredging and dredged material disposal and infrastructure, and construction of a breakwater of approximately 4,000 linear feet. The proposed expanded port facility will be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The permit application modification for the proposed project includes deepening and possible widening of the existing FNC from the federally authorized dimensions. The federally authorized turning basin would also be modified, as would the proposed adjacent turning basin expansion. A Department of the Army permit is required for the proposed project, pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1251), Section 10 of the Rivers and Harbors Act (33 U.S.C. 403), and Section 103 of the Marine Protection, Research, and Sanctuaries Act (33 U.S.C. 1401–1445, 16 U.S.C. 1431 et seq., also 33 U.S.C. 1271).

An EIS is being prepared pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321 et seq.), and the Council on Environmental Quality NEPA regulations (40 CFR Parts 1500–1508) to assess the potential environmental impacts associated with the construction, operation, and maintenance of the proposed project as submitted and modified by the MSPA.

4. *Need:* According to the MSPA, this project will contribute to the long-term economic development of Mississippi and the Gulf Coast region by expanding the Port footprint and facilities to increase cargo throughput, provide additional employment opportunities, and to increase the economic benefits produced by the Port. This project is needed to expand the Port's current footprint, thus providing an opportunity to increase the Port's capacity for moving cargo and growing. Specific alternatives are being developed as part of the EIS process and feedback provided during the additional scoping meeting will be taken into consideration.

5. *Affected Environment:* Environmental characteristics that may be affected by the proposed project include geological, chemical, biological, physical, socioeconomic, and commercial and recreational activities. Offshore, the navigation channel extends 20 miles south into the Gulf of Mexico, passing close to the western end of Ship Island. On-shore, the regional environment is characterized as Coastal Lowlands, and the shore area, where not developed, consists typically of gently undulating swampy plains. The beach area is man-made and bordered by constructed seawalls. The existing Port, as part of the man-made environment of Gulfport, is constructed on fill material. The Gulfport area is well developed. Beyond the seawalls are extensive commercial and residential developments. The nearshore and offshore area is known for its valuable resources as a productive fishery and is also utilized extensively for commercial and recreational shipping and boating.

6. *Applicable Environmental Laws and Policies:* The proposed project could result in both beneficial and negative environmental impacts. These impacts will be evaluated in the EIS in accordance with applicable environmental laws and policies, which include NEPA; WRDA; Endangered Species Act; Clean Water Act; Clean Air Act; U.S. Fish and Wildlife Coordination Act; National Historic Preservation Act; Coastal Barrier Resources Act; Magnuson–Stevens Fishery Conservation and Management Act; Coastal Zone Management Act; Marine, Protection, Research, and Sanctuaries Act; Rivers and Harbors Act; National Marine Sanctuaries Act; Fishery Conservation Act; Marine Mammal Protection Act; Executive Order 12898, Environmental Justice in Minority Populations and Low-Income Populations; Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risk (among other Executive Orders); and Ports and Waterways Safety Act.

7. *Preliminary Identification of Environmental Issues:* The following list of environmental issues has been tentatively identified for analysis in the EIS. This list was developed during preliminary internal scoping, through previous public scoping efforts, and from information from similar projects, and is neither intended to be all inclusive nor a predetermined set of potential impacts. It is presented to facilitate public comment on the planned scope of the EIS. Additions to or deletions may occur as a result of the public scoping process. Preliminary identified environmental issues include but are not limited to the loss of aquatic resources (impact to potential submerged and shoreline aquatic habitat); water quality; salinity and flows; sediment transport and currents; threatened and endangered species (including critical habitat and essential fish and shellfish habitat); air quality; traffic; socioeconomics; and impacts to low income and minority populations. The evaluation will consider alternatives, secondary and cumulative impacts, and mitigation.

8. *Scoping meeting:* A public scoping meeting was held in spring of 2011 in Gulfport, Mississippi to solicit comments from the public and agencies in regards to the original permit application and proposed project. To ensure that all of the issues related to this proposed project and permit action modification are addressed, the USACE will conduct an additional public scoping meeting in which agencies, organizations, and members of the general public are invited to present comments or suggestions with regard to the range of actions, alternatives, and potential impacts to be considered in the EIS, given the proposed project changes. The scoping meeting will be held at the Courtyard Marriott Gulfport Beachfront Hotel, 1600 East Beach Boulevard, Gulfport, MS, on May 21, 2013. The scoping meeting will begin with an informal open house from 5:30 p.m. to 6:30 p.m. followed by a formal presentation of the proposed permit action and modifications. Comments will be accepted following the formal presentation until 8:00 p.m. Displays and other forms of information about the proposed action and modifications will be available, and the USACE, the MSPA and the MDA personnel will be present at the informal session to discuss the proposed project and modifications and the EIS Process. The USACE invites comments on the proposed scope and content of the EIS from all interested parties. Verbal or written comments will be taken at the scoping meeting following the formal presentation until 8:00 p.m. A time limit will be imposed on verbal comments, as necessary. If hearing impaired or language translation services are needed, please contact Damon M. Young, P.G., at the USACE at (251) 694–3781, at *port.gulfporteis@usace.army.mil,* or at the street address provided above.

9. *Draft EIS:* It is anticipated that a Draft EIS will be made available for public review in early calendar year 2014. A public hearing will be held during the public comment period for the Draft EIS.

Approved By:

Craig J. Litteken,

Chief, Regulatory Division.

[FR Doc. 2013–11038 Filed 5–8–13; 8:45 am]

BILLING CODE 3720–58–P

DEPARTMENT OF DEFENSE

Department of the Navy

[Docket ID: USN–2013–0013]

Privacy Act of 1974; System of Records

AGENCY: Department of the Navy, DoD.

ACTION: Notice to delete a System of Records.

SUMMARY: The Department of the Navy is deleting a system of records notice in its existing inventory of record systems subject to the Privacy Act of 1974 (5 U.S.C. 552a), as amended.

DATES: This proposed action will be effective on June 10, 2013 unless comments are received which result in a contrary determination. Comments will be accepted on or before June 10, 2013.

ADDRESSES: You may submit comments, identified by docket number and title, by any of the following methods:

* *Federal Rulemaking Portal: http://www.regulations.gov.*

Follow the instructions for submitting comments.

**Mail:* Federal Docket Management System Office, 4800 Mark Center Drive, East Tower, 2nd Floor, Suite 02G09, Alexandria, VA 22350–3100.

Instructions: All submissions received must include the agency name and docket number for this **Federal Register** document. The general policy for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet at *http://www.regulations.gov* as they are received without change, including any personal identifiers or contact information.

FOR FURTHER INFORMATION CONTACT: Ms. Robin Patterson, HEAD, FOIA/Privacy Act Policy Branch, Department of the Navy, 2000 Navy Pentagon, Washington, DC 20350–2000, or by phone at (202) 685–6545.

SUPPLEMENTARY INFORMATION: The Department of the Navy's systems of records notices subject to the Privacy Act of 1974 (5 U.S.C. 552a), as amended, have been published in the **Federal Register** and are available from the address in **FOR FURTHER INFORMATION CONTACT**. The proposed deletion is not within the purview of subsection (r) of the Privacy Act of 1974 (5 U.S.C. 552a), as amended, which requires the submission of a new or altered system report.

Dated: May 2, 2013.

Aaron Siegel,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

DELETION:

N05100–3

Safety Equipment Needs, Issues, Authorizations (May 9, 2003, 68 FR 24959).

REASON:

Records are covered under NM05100–5, Enterprise Safety Applications Management Systems (ESAMS) (March 25, 2011, 76 FR 16739); therefore, N05100–3, Safety Equipment Needs, Issues, Authorizations can be deleted.

[FR Doc. 2013–10984 Filed 5–8–13; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF EDUCATION

Applications for New Awards; National Institute on Disability and Rehabilitation Research—Traumatic Brain Injury Model Systems Centers Collaborative Research Project

AGENCY: Office of Special Education and Rehabilitative Services, Department of Education.

ACTION: Notice.

Overview Information

National Institute on Disability and Rehabilitation Research (NIDRR)—Disability and Rehabilitation Research Projects and Centers Program—Disability and Rehabilitation Research Projects—Traumatic Brain Injury Model Systems Centers Collaborative Research Projects; Notice inviting applications for new awards for fiscal year (FY) 2013.

Catalog of Federal Domestic Assistance (CFDA) Number: 84.133A–7.

DATES:

Applications Available: May 9, 2013.

Date of Pre-Application Meeting: May 30, 2013.

Deadline for Transmittal of Applications: July 8, 2013.

Full Text of Announcement

I. Funding Opportunity Description

Purpose of Program: The purpose of the Disability and Rehabilitation Research Projects and Centers Program is to plan and conduct research, demonstration projects, training, and related activities, including international activities, to develop methods, procedures, and rehabilitation technology that maximize the full inclusion and integration into society, employment, independent living, family support, and economic and social self-sufficiency of individuals with disabilities, especially individuals with the most severe disabilities, and to improve the effectiveness of services authorized under the Rehabilitation Act of 1973, as amended (Rehabilitation Act).

Disability and Rehabilitation Research Projects (DRRPs)

The purpose of NIDRR's DRRPs, which are funded through the Disability and Rehabilitation Research Projects and Centers Program, is to improve the effectiveness of services authorized under the Rehabilitation Act by developing methods, procedures, and rehabilitation technologies that advance a wide range of independent living and employment outcomes for individuals with disabilities, especially individuals with the most severe disabilities. DRRPs carry out one or more of the following types of activities, as specified and defined in 34 CFR 350.13 through 350.19: Research, training, demonstration, development, utilization, dissemination, and technical assistance.

An applicant for assistance under this program must demonstrate in its application how it will address, in whole or in part, the needs of individuals with disabilities from minority backgrounds (34 CFR 350.40(a)). The approaches an applicant may take to meet this requirement are found in 34 CFR 350.40(b). Additional information on the DRRP program can be found at: *www.ed.gov/rschstat/research/pubs/res-program.html#DRRP*.

Priorities: This notice contains two absolute priorities for this competition. Priority 1, the *DRRP Priority for the Traumatic Brain Injury Model Systems Centers Collaborative Research Projects* is from the notice of final priority for this program, published elsewhere in this issue of the **Federal Register**. Priority 2, the *General DRRP Requirements* priority, which applies to DRRP competitions, is from the notice of final priorities for the Disability and Rehabilitation Research Projects and Centers Program, published in the **Federal Register** on April 28, 2006 (71 FR 25472).

Absolute Priorities: For FY 2013 and any subsequent year in which we make awards from the list of unfunded applicants from this competition, these priorities are absolute priorities. Under

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, MOBILE DISTRICT
P.O. BOX 2288
MOBILE, ALABAMA 36628-0001

REPLY TO
ATTENTION OF:

CESAM-RD-M May 2, 2013

PUBLIC NOTICE
U.S. ARMY CORPS OF ENGINEERS
MOBILE DISTRICT

SCOPING MEETING
FOR THE
PROPOSED PORT OF GULFPORT EXPANSION PROJECT, HARRISON COUNTY, MISSISSIPPI
ENVIRONMENTAL IMPACT STATEMENT

TO WHOM IT MAY CONCERN:

Notice is hereby given that the U.S. Army Corps of Engineers (USACE), Mobile District, in coordination with the Mississippi State Port Authority (MSPA), has scheduled a public open house and scoping meeting on May 21, 2013, at the Courtyard Marriott Gulfport Beachfront Hotel, 1600 East Beach Boulevard, Gulfport, MS. The open house will begin at 5:30 pm followed by a formal presentation at 6:30pm. Comments will be accepted at the meeting until 8:00 pm.

The purpose of the meeting is to receive public input concerning the scope and alternatives to be considered in the Environmental Impact Statement (EIS) for the Department of the Army Permit Application **SAM-2009-1768-DMY** for the Port of Gulfport Expansion Project, Harrison County, Mississippi. The USACE is the lead federal agency with the responsibility of evaluating the environmental impacts of the proposed project for the applicant, the Mississippi State Port Authority, and is preparing the EIS in accordance with National Environmental Policy Act requirements. The Mississippi Development Authority and the National Marine Fisheries Service are cooperating agencies for the preparation of the EIS. A Department of the Army permit is required for the proposed project, pursuant to Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act, and Section 103 of the Marine Protection, Research, and Sanctuaries Act.

The proposed project as described in the permit application which was filed on March 17, 2010, included filling approximately 700 acres of open-water benthic habitat. Since submitting the application, Mississippi State Port Authority has modified the proposed project footprint to reduce the overall potential fill required for implementation (see attached figure). The revised proposed project involves impacting up to 200 acres of open-water bottom in the Mississippi Sound from the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, dredging and dredged material disposal and infrastructure, and construction of a breakwater of approximately 4,000 linear feet. The proposed expanded port facility will be elevated 25 feet above sea level to provide protection against future tropical storm surge events. The permit application modification for the proposed project includes deepening and possible widening of the existing Gulfport Harbor Federal Navigation Channel (FNC) from the federally authorized dimensions. These modifications will include the navigation channel from the Gulf to the port facilities to support a navigable channel depth of up to 47 feet in the Mississippi Sound and up to 49 feet in the Bar Channel plus advance maintenance and allowable over depth requirements. Widening the channel may be

requested based on results of planned ship simulations. The federally authorized turning basin would also be modified, as would the proposed adjacent turning basin expansion. The depth of these features will be appropriate to the deeper navigation channel. Final channel design and associated environmental impacts will be addressed during the permitting and EIS process.

According to the MSPA, this project will contribute to the long-term economic development of Mississippi and the Gulf Coast region by expanding the Port footprint and facilities to increase cargo throughput, provide additional employment opportunities, and to increase the economic benefits produced by the Port. Specific alternatives are being developed as part of the EIS process and feedback provided during the additional scoping meeting will be taken into consideration.

The proposed project could result in both beneficial and negative environmental impacts. These impacts will be evaluated in the EIS in accordance with applicable environmental laws and policies. Environmental characteristics that may be affected by the proposed project include geological, chemical, biological, physical, socioeconomic, and commercial and recreational activities.

The meeting agenda includes an open house with opportunities for discussions with project personnel, followed by staff presentations and a comment session. Verbal and written comments may be made at the meeting, or written comments may be provided via mail through the end of the official comment period (see below). All interested individuals are invited to attend. The scoping meeting will be conducted in English. If hearing impaired or language translation services are needed, please contact Mr. Damon M. Young, P.G., at the USACE (251) 694-3781, or at Port.GulfportEIS@usace.army.mil, or at the mailing address provided below by May 14, 2013.

Written comments can also be emailed to the project at port.gulfporteis@usace.army.mil, or mailed to: Mr. Damon M. Young, P.G. USACE - Mobile District, Post Office Box 2288, Mobile, Alabama 36628. To comment online, visit the project website at http://www.portofgulfporteis.com/. The deadline for submitting scoping comments is June 17, 2013.

It is anticipated that a Draft EIS will be made available for public review in early 2014. A public hearing will be held during the public comment period for the Draft EIS.

FOR FURTHER INFORMATION CONTACT: For information about this project, to be included on the mailing list for future updates and meeting announcements, or to receive a copy of the draft EIS when it is issued, contact Mr. Damon M. Young, P.G., at the USACE (251) 694-3781 or the address provided above. Mr. Ewing Milam, at the MDA can also be contacted for additional information at Post Office Box 849, Jackson, Mississippi, 39205-0849, telephone (601) 359-2157 or by electronic mail at emilam@mississippi.org.

For additional information about our Regulatory Program, please visit our web site at: http://www.sam.usace.army.mil/Missions/Regulatory.aspx and please take a moment to complete our customer satisfaction survey while you're there. Your responses are appreciated and will allow us to improve our services.

Encls

MOBILE DISTRICT
U.S. Army Corps of Engineers

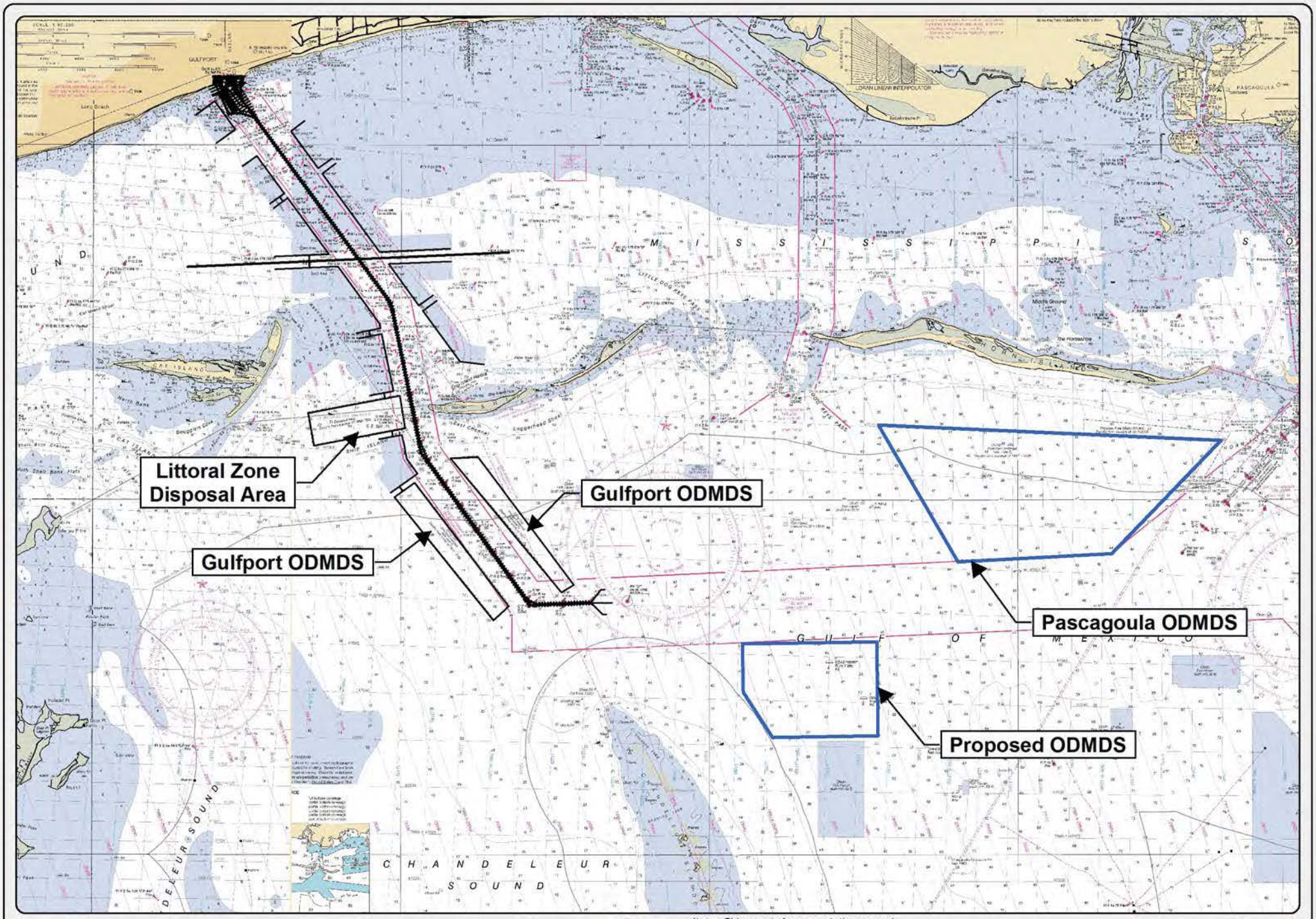

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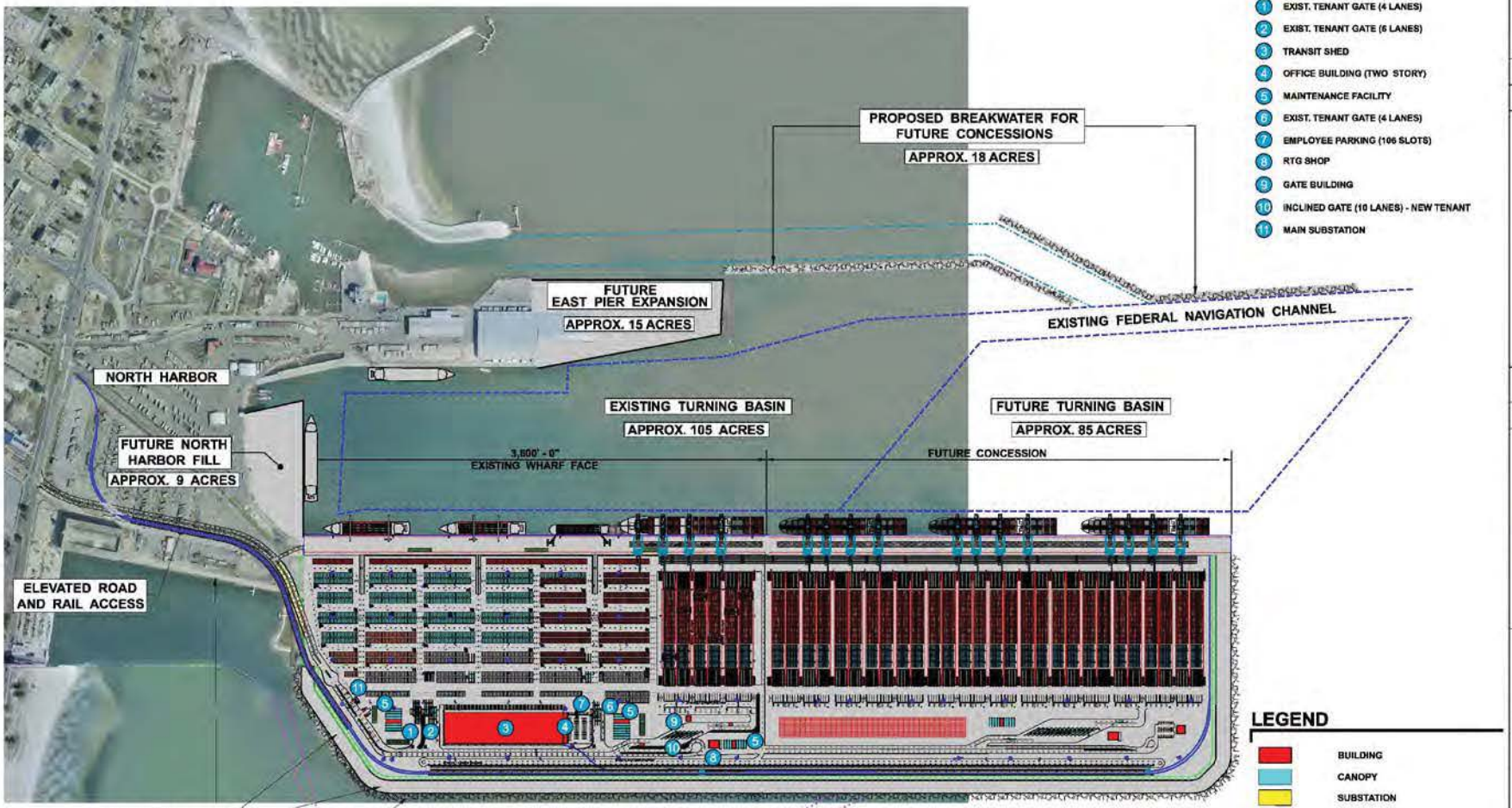
Figure 6
Ocean Dredge Material Disposal Sites and Littoral Zone Disposal Area

Document Path: \\12-envir-serv\Envir\PROJECT\39009\74911 - MSPA USACE Permit Modification Task Order 8.3\GIS\Port of Gulfport\MapFiles\Revised Permit Application\Figure 6 Ocean Dredge Material and Beneficial.mxd



ALTERNATIVE 2 - MAXIMUM EFFICIENCY

VOLKERT

NOT TO SCALE

Note: This map is for presentation use only and not to be used for construction purposes

REVISED FIGURE

Figure 3
Proposed Plan

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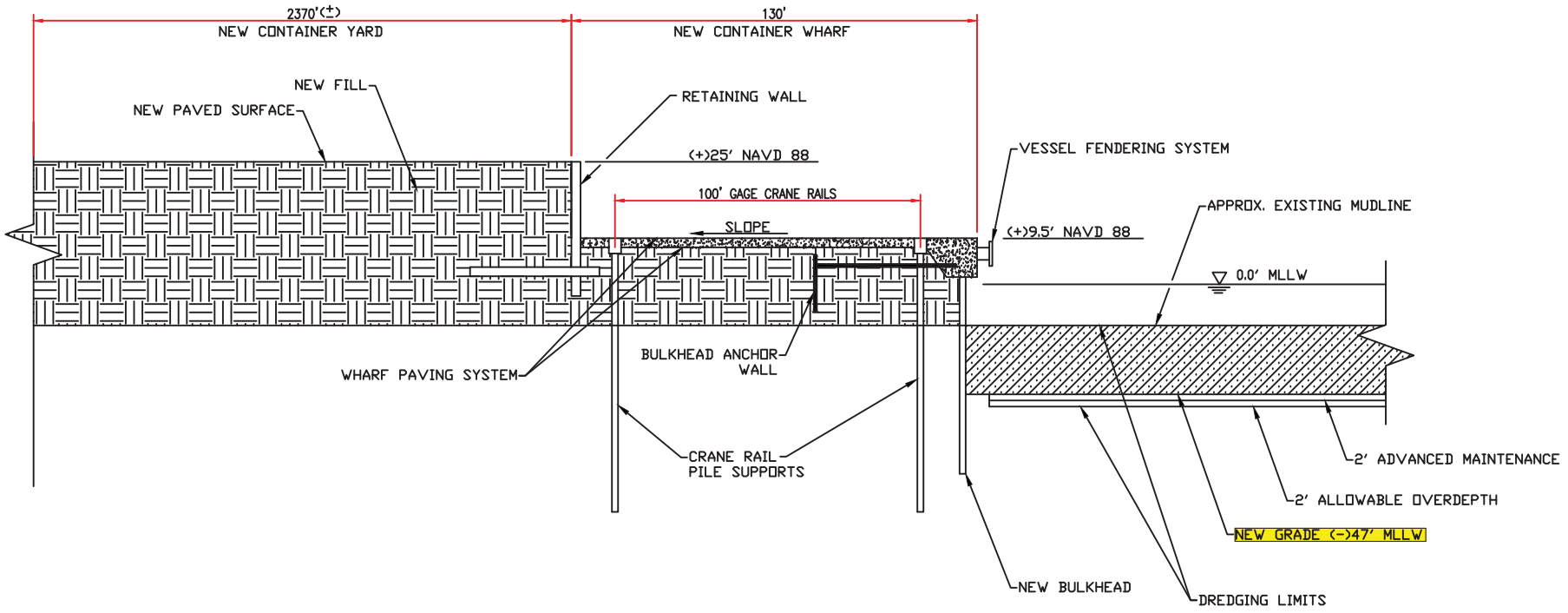

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REVISED FIGURE

FIGURE□□
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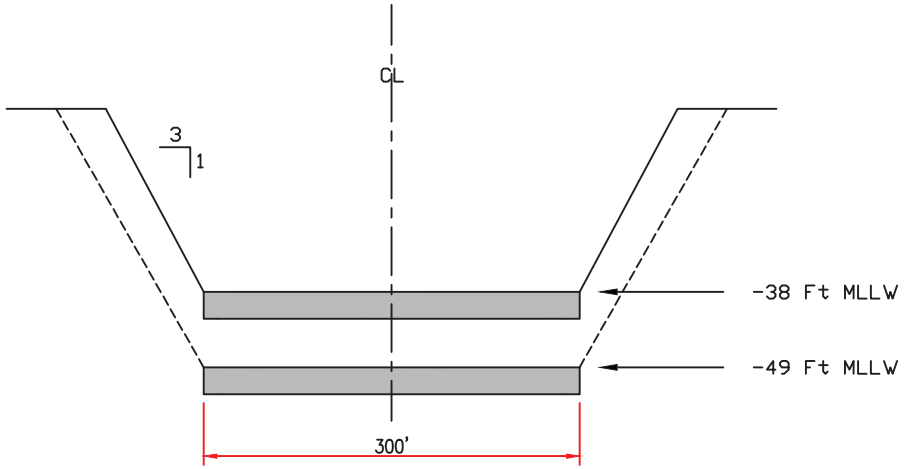
LEGEND

2 Ft Allowable Overdepth

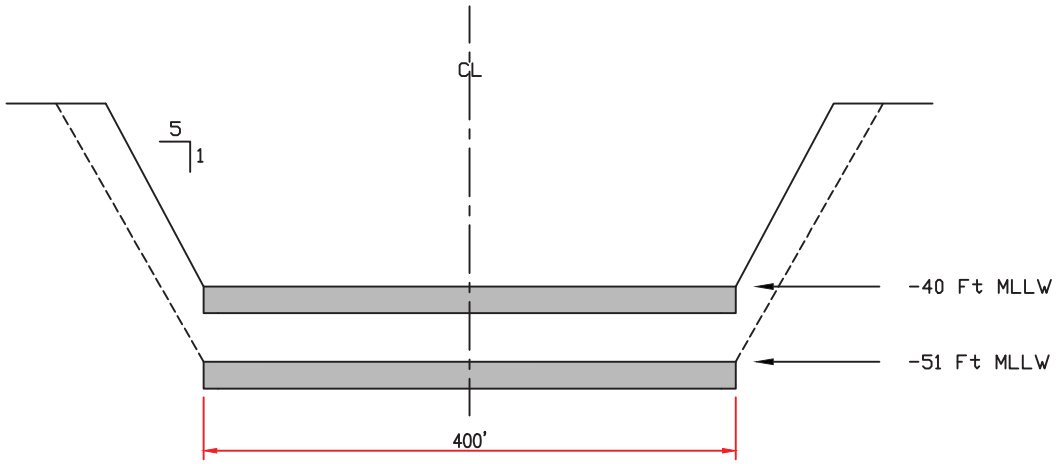
Existing Required Dredging Prism

Proposed Dredging Prism



Gulfport Sound Channel Typical Section

Not To Scale



Gulfport Bar Channel Typical Section

Not To Scale

NOTE:

1. Required dredging depth equals the project depth plus two feet of advance maintenance.

2. Channel widths vary from 300 feet in the Gulfport Sound Channel to 400 feet in the Gulfport Bar channel.

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FIGURE

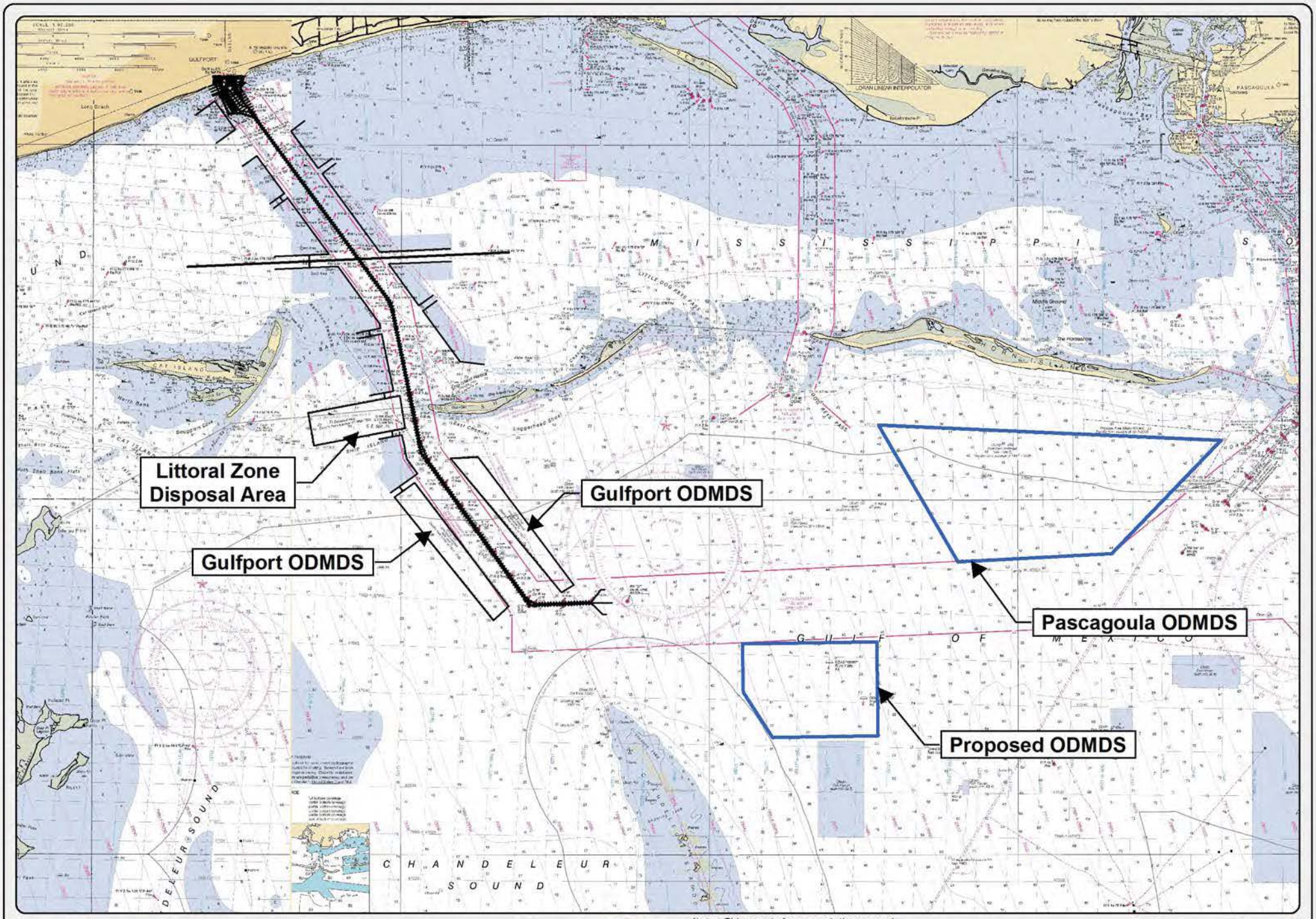

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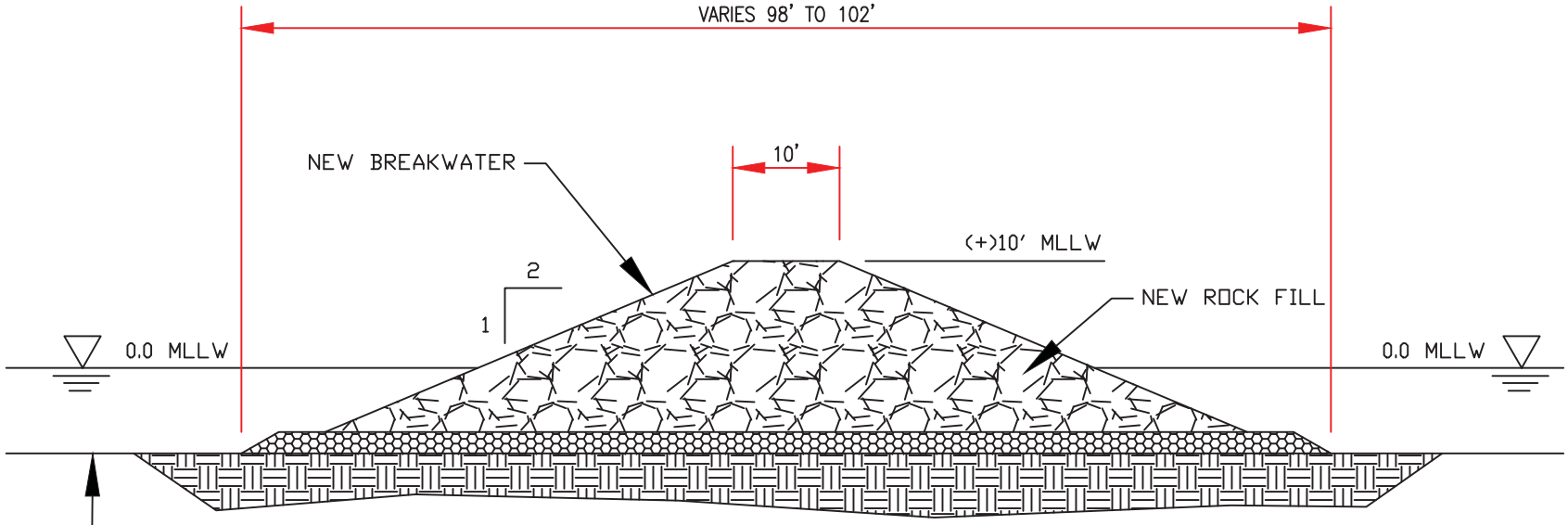
Figure 6
Ocean Dredge Material Disposal Sites and Littoral Zone Disposal Area

Document Path: \\12-envir-serv\Envir\PROJECT\39009\74911 - MSPA USACE Permit Modification Task Order 8.3\GIS\Port of Gulfport\MapFiles\Revised Permit Application\Figure 6 Ocean Dredge Material and Beneficial.mxd

NOTE:

APPROXIMATELY 4,000 LF OF NEW BREAKWATER REQUIRED.



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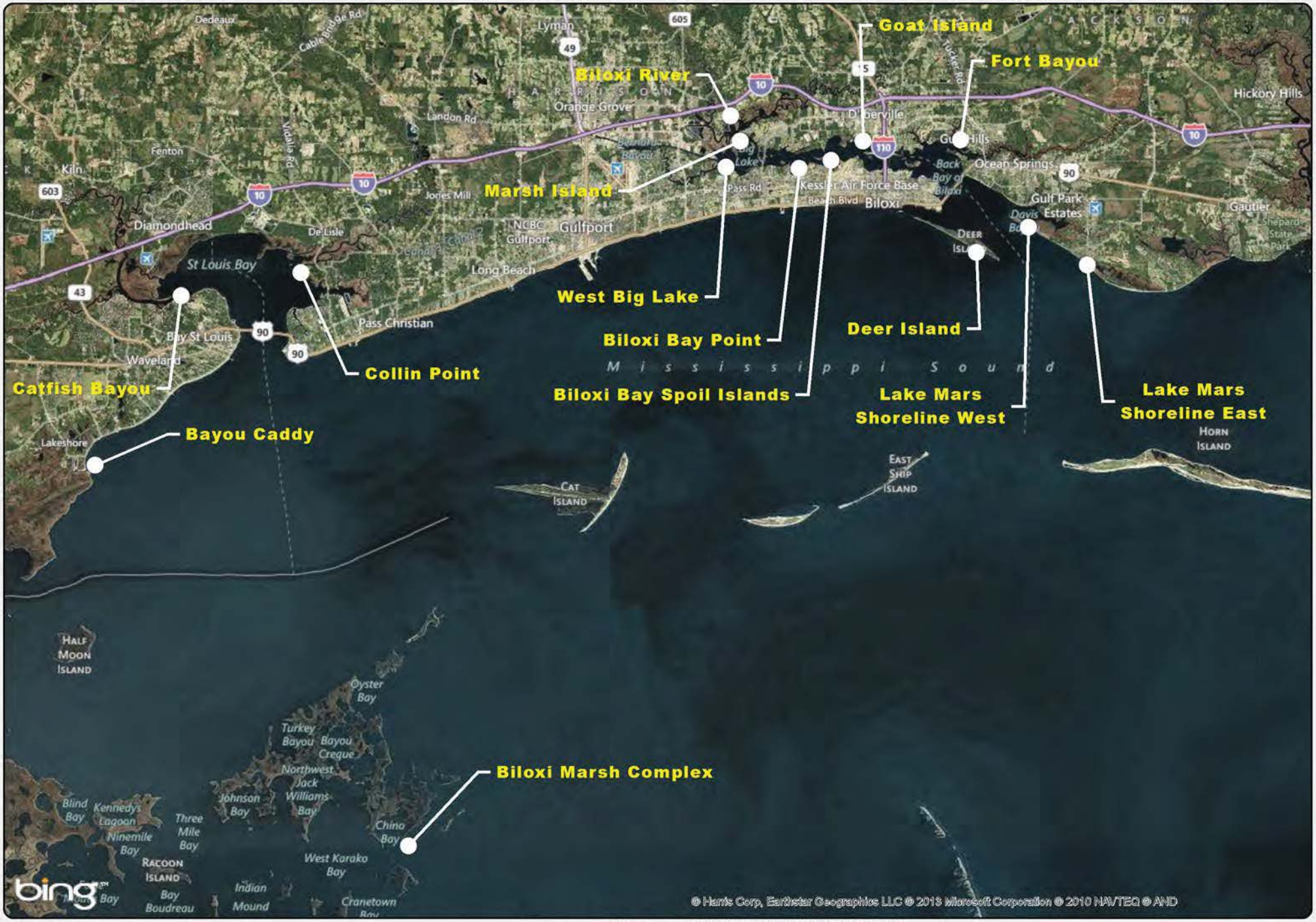
REVISED FIGURE

FIGURE



VOLKERT

0 2.5 5 Miles

1 inch = 5 miles

Note: This map is for presentation use only and not to be used for construction purposes.

FIGURE

Figure 8
Potential Beneficial Use Sites

Port of Gulfport Expansion Project - Scoping Meeting Comments Summary - May 2013

Commenter	Category	Comment
Russel B. Dobbyn	No Response Needed	Surprised the deepening/widening was not part of the original PGEP. Feels that building a larger harbor without channel-turning improvements is a waste of time and money.
	No Response Needed	Does not believe the "scaremongers" as none of their predictions have yet to occur. They just shift jobs from shipping/building/commerct to advertising and the legal system.
Oscar Eckhoff	Coastal Geologic Processes	Believes that deepening the channel will decrease or destroy the barrier islands.
	No Response Needed	Believes once all the natural resources are gone, there will be little use for a deepwater port or the expanded Panama Canal.
Evelyn J. Caldwell	Socioeconomics	Do you do any work on Turkey Creek in the Turkey Creek community?
Darius Johnson	Socioeconomics	Feels that it is essential to get the port back up and running because of the hundreds of jobs that were lost following hurricane Katrina at the port.
Burdine Transcript:	**Burdine Transcript:**	
Kenneth L. Casey, Sr.	Socioeconomics	Concerned about job creation and that the community has not seen any gain in employment since the construction process on the expansion and on the elevation began.
Howard Page	Introduction, Purpose, and Need	Surprised that another scoping meeting was scheculed. Were always told that channel deepening is a part of the port project and believes the original comments reflect the concerns about effects o fthe channel deepening. A lot of the TEUs that were supposed to come in were based on a deeper channel
	Socioeconomics	Would like for the Port economist to look at the viability of the economics of this project as the only concessionair hear mentioned is a Chinese shipping company that is going to use this facility. Encourages Port to look into the viability of this information as independently as possible and see if it is going to give economic local benefits.
	Introduction, Purpose, and Need	Points out the information discrepancies on the Port's website between the "Facts About Revitalization" fact sheet and the Trans System report on the same website, one says 1 million TEU capacity and the other 480,000 TEUs.
	Socioeconomics	Concerned that money is being spent on this and it is very likely we could spend all this money on the project and not create jobs.
	Socioeconomics / Roadway and Rail Traffic / Air Quality	Asks that environmental justice be looked at carefully, since the increase in TEUs will also increase the number of trains and ships, increasing pollution going into the communities. Should consider that the Port does nothing right now and unless required by the USACE they are not going to do anything about the air pollution.
John Sneed	No Response Needed	Recognizes the importance of the Port for economic development and are in favor of the project. The Harrison County Development Commission passed a resolution in favor of the efforts to maintain and deepen the channel. Commenter provided the resolution to be entered into the record.
	Socioeconomics	Feels that it might want to change the name to Economic Impact Study, instead of Environmental Impact Study.
Toshja Brown	Introduction, Purpose, and Need	Would like for the USACE to give the other projects in the Port vicinity more than just consideration, because the other projects, when considered with the expansion of the Port, create a huge impact in several communities in Gulfport.
	Introduction, Purpose, and Need	Expresses concern about the degree of relevancy between considering the other projects and actually studying them. Encourages the USACE to weight this entire project and its impact on the community.
Spencer Garrett	No Response Needed	Commenter does not believe there will be any environmental impacts from this project.
	Socioeconomics	Asks that the USACE consider what would happen if the channel is not deepened. With the Panamax II standards, if the channel is not deepened, the Port will die and jobs will be lost.

Port of Gulfport Expansion Project - Scoping Meeting Comments Summary - May 2013

Commenter	Category	Comment
	Socioeconomics	Would like for not only the environmental impacts to be looked at but also the economic impact of not expanding the Port.
Rose Johnson	Socioeconomics	Asks that the USACE adequately address environmental justice, looking at the impact the Port expansion would have on low-income, under-served minority communities as it would increase rail traffic that comes through their community. Wants to make sure that one population does not disproportionately bear the burden of pollution from these connected project.
		Asks that the USACE make sure all the applicants are working from the same set of facts and forecasts on traffic, air pollution, and wetland laws.
	Not Applicable	Wants to see a roadside air and noise study done for the Port connector road.
		Asks that the USACE look at the flooding impact from all of these connected projects.
Oscar Eckhoff	No Response Needed	Believes an economic collapse will happen with massive unemployment and massive starvation, rendering the Port useless.
William T. Stone	No Response Needed	Encourages the USACE to get the EIS done and don't let it drag out.
	Alternatives / Affected Environment	Commenter is unclear on what the baseline is for the project.
	Alternatives	Unclear about if the project is going to be 25 feet.
	No Response Needed	Believes that if we don't get moving on this project, the US will not be able to compete with other countries and will be left behind.
Glenn Cobb	No Response Needed	Commenter is optomistic that the USACE will include some of the concerns they (Port Campaign Coalition) have in the North Gulfport Community and include them in their conversations and they are willing to work with you for the progress in Gulfport.
Reilly Morse	No Response Needed	Supports the modification to the application. Comments that this is something that the Port Campaign Coalition and the Steps Coalition have sought, to have a functioning set of elements that will allow the Port to achieve the larger throughput that would achieve job creation and other elements.
	Cumulative Impacts	Welcomes the consideration of the related projects, the domain, the 33rd Street property, the Port Connector Road and that the new EIS is going to take a coordinated look at these.
	Socioeconomics	Concerned about the environmental justice portion of the EIS. When the Port did its own environmental analysis they only looked at Cencus Tract 14. The USACE needs to look at Census Tracts 2, 23, 24, and 18, the ones where the increased traffic and throughput would pass. Feel that it is necessary to look at those effects as part of the overall connected activity that goes through the port
	Air Quality	Want the USACE to look at air emissions issues, the various ways through more modern technology to avoid and minimize and mitigate air emissions from ships onboard transit trains and trucks. Look at the GreenPort technologies that are underway elsewhere.
	Roadway and Rail Traffic / Cumulative Impacts	Ask that when this analysis takes place that we have this conciliation of both projects, that the throughput, the forecast about traffic coming through the Port from this expanded channel be used uniformly across the study and in consideration of the other projects.
	Roadway and Rail Traffic / Cumulative Impacts	Saw conflicting forecasts about how much traffic would go throuth and feels that consistency and correctly analyzing requires a uniform set of baseline numbers.
Michael Vitt	No Response Needed	Feels that there would be a dramatic increase in employment within his company if the proposed project is completed.
	Alternatives	If Gulfport does not proceed with this project, commenter feels that the Port will be bypassed for other locations.

Port of Gulfport Expansion Project - Scoping Meeting Comments Summary - May 2013

Commenter	Category	Comment
	No Response Needed	Believes that a lot of good can come out of accepting the modification that the Port is proposeing to increase shipping efficiency and safety and navigation.
	No Response Needed	Believes that business is being taken away from the Port of Gulfport to other more efficient ports (i.e. New Orleans) and thus not benefiting the people of Mississippi.
William Davis	No Response Needed	Commenter feels that the environmental impacts will be minimal and that the Port needs to complete the project before we loose what we have.
Murrell Hilton	No Response Needed	Is in support of the project and feels that it will allow more efficiency for ships, less pollution and without the deepening there is little point in the expansion.
Francis Fredericks	Air Quality	Supports the project bit is concerned about the potential increase in air pollution from the project.
	Socioeconomics	Asks that the USACE consider all of the things that can go wrong for the community if this project were to be built.
Lettie Caldwell	Introduction, Purpose, and Need	Feels that the Port is creating confusion and that someone needs to get an overview of this before the USACE gets involved.
	Socioeconomics	Feel that the promise of job creation is only a pretense.
	Socioeconomics	Feel that the people in the community have not been considered and that the Port builds your project in their neighborhoods anyway, regardless that they are polluting.
Mark Whestine	Air Quality	Believes that as far as the pollution problem goes in trucking, engins are cleaner than the cars that run through the Gulfport neighborhoods.
	No Response Needed	Supports the project and believes that without the port we have nothing, no port, no trucks, no jobs.
Maxine Ramsay	Socioeconomics	Although there were promises of over 1,200 permanent jobs by Port officials and the Governor, there is not proof of any jobs being created.
	Socioeconomics	Feels that it is a crime for MDA and the Governor to make statements they can not back up (i.e. job creation) when there is no chance this project will be built in anyones lifetime.
Kenneth Jones II	No Response Needed	Commenter is in full support of the project being built which will bring jobs, economic recovery, and more efficient shipping.
Johnnie Jacobs	Public Involvement	Requests that they be forwarded a copy of the archaeological survey and any SHPO comments regarding the project.
Stanley Fournier	No Response Needed	In support of the project as it would allow them to compete for some of the business currently going to New Orleans.
M.W. Hilton, Jr.	No Response Needed	Feels that in order to fully utilize the benefits of the Port expansion the ship channel will need to be both deepened and widened and is in favor of the project.
Andrew Whitehurst	Cumulative Impacts	Feels that the USACE needs to look at the connected actions earlier in the process.
	Cumulative Impacts	The USACEs own input to the MsCIP plan has recognized the need to protect wetlands in North Gulfport and this plan lists an enumerated project in the Turkey Creek drainage, not yet funded by Congress, to execute a buyout of wetlands in order to create an easement for flood water storage.
	Cumulative Impacts	The money used to pay for the Port expansion is one large sum, so to the degree possible, the individual infrastructure project components to re-work the Port with that money should be considered together. A singular funding source should carry with it a holistic treatment of the various projects made possible by that funding. A directive from EPA has called for this sort of holistic treatment at least with respect to the Ward wetlands.

Port of Gulfport Expansion Project - Scoping Meeting Comments Summary - May 2013

Commenter	Category	Comment
	Cumulative Impacts	The scope of the EIS for channel dredging and port modifications here should be broad, holistic and comprehensive as possible, encompassing all the pieces of this project and treating them as a connected web. The pieces are all connected in a project that starts in the channel between Ship and Cat Islands and ends with road connections at Interstate 10.
	Cumulative Impacts	Would like to see this EIS talk holistically about the interconnected parts of the Port Expansion. In Mississippi Sound and Gulfport, they are, in part: • Dredging in the Sound and Port for ship channels basins/berths • Railroad construction • Proposed Port connector road construction • Development of the wetlands on the Ward Property • Development of the property located at 33rd Street and 34th Avenue
	Cumulative Impacts	The integration into this project of the wetlands on the Ward properties in North Gulfport will have a significant impact on flooding and storm water storage in the Turkey Creek floodplain. If they are converted, then mitigation will need to take place in the floodplain. However, it will be more cost effective to let the wetlands remain unfilled and work to hold floodwaters than to try to create engineered solutions to flooding in North Gulfport after construction of road infrastructure. Particular attention should be given to improving existing surface roads between the Port and Interstate10 before the Wetlands on the Ward property are allowed to be filled and converted.
	Coastal Geologic Processes	Dredging of the bar channel and Mississippi Sound to deeper and wider dimensions will adversely affect Ship Island by further alteration of littoral sediment transport. Great sums of BP Oil spill penalty money are planned to be spent to fill the cut between East and West Ship Islands. The altered deepened and widened channel will better intercept sediment from the longshore currents and hamper restoration efforts for Ship Island. It will be important to manage spoil from dredging and place suitable spoil strategically offshore and up-current of East and West Ship Islands to help the island restoration. The long term health of the Barrier Islands must be given the strongest consideration in the EIS treatment of dredging operations.
	Threatened and Endangered Species	The data from the sturgeon tracking studies should be presented in the EIS in some form. The presence or absence of Gulf sturgeon in the channels or dredged areas of the Port is significant and should be noted in the EIS, and if they are present, their movements should continue to be monitored and studied.
E. Gail Suchman	No Response Needed	Believed that the 21-day minimum notice for the scoping meeting was insufficient. That request was not addressed and the scoping meeting proceeded as scheduled on May 21,2013.
	Cumulative Impacts / Alternatives / Socioeconomics	Believe that the MSPA has changed its plan for the Port multiple times, and has not undertaken a comprehensive EIS process to look at the cumulative impacts of the multiple projects associated with the Port, conduct a proper alternatives analysis, or address environmental justice concerns. Feel the MSP A and other state agencies have ignored the community concerns and refused to participate in a meaningful dialogue to address them.
		Request that a draft scoping report be issued by the USACE to allow for formal public review and comment.
	Cumulative Impacts	The USACE must design its scope of study for the EIS to include, directly, the port connector road and inland port (including the Ward application).

Commenter	Category	Comment
	Socioeconomics	Feels that the USACE did not comply with its mandate to study the environmental justice impacts from the Port and its associated projects which is required by NEPA. Formlally request that the USACE establish a community advisory group for the EIS process and require the applicant to provide modest funding (i.e., $25,000) to allow the community advisory group to hire a technical support professional to assist in the review of the draft EIS.
Comments received	**Comments received in 2011 relevant to channel modification:**	
Steve Shepard	Water and Sediment Quality / Groundwater and Surfacewater Hydrology / Aquatic Ecology	Any expansion of the channel only magnifies the saltwater intrusion problem, elimination of freshwater wells, damage to the estuary's biotic communities. What about the Gulfport ship channel is different and less potentially destructive than the Mississippi Gulf Outlet Canal?
Maxine Ramsay	Alternatives	On dredging the ship channel, where will the spoils be placed?
Carol Campbell	Water and Sediment Quality	The even deeper dredging could increase storm surges. Mississippi Sound protects us from hurricanes; it must be considered in the EIS whether the increased dredging will compromise that valuable environmental service.
Casey DeMoss Roberts	Alternatives / Socioeconomics / Coastal Geologic Processes	The expanded Navigation Channel does not seem to have a maintenance plan. The MSPA has stated that the Port of Gulfport future plan is to "encourage USACE dredging of the navigation channel." This strategy raises many questions. First, will the Port have the financial ability to maintain the channel if the Corps declines responsibility? If not, then how will the channel be maintained? If the Corps decides to take on this responsibility, how will the Channel be managed? Will the Corps maintain this channel? And if yes, how will the Corps ensure that significant erosion does not occur like that which happened with the Mississippi River Gulf Outlet in Louisiana? How much business will the port have to grow to justify the cost to maintain the channel?
	Coastal Geologic Processes	The USACE must analyze how the deeper and wider channel will impact the National Gulf Island Seashores, particularly Ship Island.
	Coastal Geologic Processes	The USACE must also consider impacts to the Channel from the westward migration pattern of the barrier islands and how the westward migration of islands will impact channel maintenance.
	Water and Sediment Quality / Aquatic Ecology / Wetlands and SAV / Threatened and Endangered Species	The USACE must analyze what impact a deeper and wider navigation channel will have on salinity concentrations near the project area and how this potential change may impact water quality and the fauna and flora that depend on the current saline concentrations.
	Commercial and Recreational Navigation / Water and Sediment Quality / Cumulative Impact	The EIS should determine how the deeper and wider navigation channel, increased ship traffic, water quality degradation, and larger port footprint will impact the MSCIP. If impacts to the MSCIP are found, then those impacts should be avoided or the MSCIP should be re-studied. The State of Mississippi, Department of Marine Resources, the USACE, Mobile District, and the DMR should consider if the plan is consistent with Mississippi Coastal Improvement Plan.
Therese Collins	Alternatives / DMMP	The required channel dredging has not been considered. The dredge spoil disposal plan is not part of this. We have no idea what you're doing to do with that.
Howard Page	Coastal Geologic Processes / DMMP	The dredge that has been requested to 45 feet so that this port can handle Panamax ships, which are designed to pass through the newly upgraded Panama Canal, will cause great problems from the constant maintenance. Many of these problems will be in maintaining the barrier islands. The channel acts as a sediment trap and traps sediment that can build the islands. Wider and deeper channels trap more sediment.

Appendix H5

Agency Workshops

US Army Corps of Engineers
Mississippi Development Authority

Port of Gulfport – Expansion Application
Environmental Impact Statement

Agency Workshop

March 31, 2011

Location: Fleming Education Center Classroom
University of Southern Mississippi, Gulf Park Campus
730 East Beach Boulevard, Long Beach, MS 39560

- 1400 – Welcome from USACE and MDA and introductions (Damon Young and Ewing Milam)
- 1415 – Review of agenda and objectives (Angela Bulger)
  - Ensure understanding of the Expansion Project
  - Confirm all relevant resources are covered in the EIS and appendices
  - Identify available data to aid in evaluations
  - Determine need for additional studies
- 1425 – Description of permitted efforts and Expansion Project (Joe Conn)
  - Handouts available
  - Q&A
- 1440 – Review of EIS content and known environmental concerns (Angela Bulger/Kim Fitzgibbons)
  - Handouts available
  - Discussion of content
  - Discussion of available data
  - Discussion of additional studies (if needed)
- 1520 – Wrap up and close workshop (Damon Young)

Port of Gulfport – Restoration and Revitalization Application
Environmental Impact Statement

Agency Workshop
Summary of Meetings

Date: March 31, 2011

Location: Fleming Education Center Classroom, University of Southern Mississippi, Gulf Park Campus, Long Beach, MS

Participants: See attached sign-in sheets

Summary of Discussion:

- **Introduction:**
  - Joe Conn (MSPA) – description of permitted efforts and expansion project
    - A short video was shown
    - 160 acre container facility
    - Western edge of the facility will be open to the public (pier, biking , and trail)
    - Once completed, there will be space for an additional tenant. Current tenants include Dole, Chiquita, and Crowley.
    - Port operates at 1 million TEU's per year / 3 million TEU's additional with the expansion project to 4 million TEU's total
    - Current work will take 7 years to complete
    - 12,500 when at 1 million TEU's
    - New expansion will include up to 400 acres for the West Pier after all projects are completed
    - With the expansion project the port will be able to handle 5 times more

- **Open Discussion with agencies:**
  - Maya Roe (MDEQ)
    - In 2012 Gulfport will be designated non-attainment for ozone by the EPA
    - Impacts include:
      - Major industries – will be harder for new industries to come in
      - Transportation conformity – road construction
      - Mobile source emissions increase
  - Ntale Kajumba (EPA)
    - Air toxics within that framework – hotspots and communities
    - No air toxics issues on the coast
  - Mark Thompson (NMFS)
    - Gulf sturgeon:

- Ongoing studies (Ship Island) – monitoring and tagging (Ryan Hendren is the point of contact for this information)
- They have done some tagging studies with BP (BP info may be confidential)
- 1998 permit – there were some sediment, infauna, and water quality analysis performed, contact Larry Lewis (BMI) for specifics
- Essential Fish Habitat – general information on the website
- Paul Necaise (NMFS) is the contact for piping plovers

- Jennifer Wittmann (MDMR)
  - Coastal Zone Management – coastal program guidelines
  - 1988 document with information that she provided
- Florance Watson (MDEQ)
  - Section 404b – guidelines have been provided
- Ntale Kajumba (EPA)
  - Is there funding for the EIS?
    - South expansion and the current expansion are not funded yet
- Will take 3 to 6 months to formulate the alternatives and therefore a year to produce the Preliminary Environmental Impact Statement

Action Items:

- Video Joe Conn showed will be placed on the Port of the Future website
- Scoping meeting posters and information from the meeting will be placed on the 3rd party website

MEETING ADJOURNED.

US Army Corps of Engineers
Mississippi Development Authority

Port of Gulfport-Expansion Application
Environmental Impact Statement

Agency Workshop
March 31, 2011 1400-1530 hrs

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US Army Corps of Engineers
Mississippi Development Authority

Port of Gulfport-Expansion Application
Environmental Impact Statement

Agency Workshop
March 31, 2011 1400-1530 hrs

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US Army Corps of Engineers
Mississippi Development Authority
National Marine Fisheries Service

Port of Gulfport Expansion Project
Third-Party Environmental Impact Statement

Agency Workshop #2

May 21, 2013 1400-1600

Location: Courtyard Marriott, Gulfport, MS – Coastal Room 3

- Introductions
- Purpose for Meeting
- Status of the Project
- Proposed Changes to Project
    - Current Footprint Review
    - Proposed/Possible Changes to Channel
    - Ship Simulations and Moving Forward
- Review of Agency Input and Concerns/Discussion

US Army Corps of Engineers
Mississippi Development Authority
National Marine Fisheries Service

Port of Gulfport Expansion Project
Third-Party Environmental Impact Statement

Agency Workshop #2

Date: May 21, 2013 1400-1600

Location: Courtyard Marriott, Gulfport, MS – Coastal Room 3

Participants: See attached sign-in sheets

Summary of Discussion:

- **Introduction:**
  - Angela Bulger (Atkins)
    - Purpose of the meeting
    - Visuals – handouts
    - Focus on the channel modification for this meeting and make sure you understand what is being proposed
    - Ship simulations are done – processing the data now and this will feed into the alternatives analysis
    - Goal is to determine which channel configuration will give Port the biggest benefit for the cost
    - MS Channel and outer Bar Channel
    - 300 foot x 36 feet deep is the current authorized MS Channel, 400 x 38 is current authorized Bar Channel
    - The Port proposes to deepen up to 47 feet in the MS Channel and the outer Bar Channel up to 49 feet deep
    - Width changes may also be considered
      - The pilots have concern about this so we added a width option to the ship simulation
    - Process
      - 2010 – permit application was submitted
      - 2011 – had the Notice of Intent for the scoping meeting that was held in March
      - 2013 – re-notice to get public input on the modification to the project
- **Open Discussion with agencies:**
  - Munther Sahawneh (USACE)

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        - Are we going to add to the length of the existing channel?
    - Angela Bulger (Atkins)
        - May extend the length of the channel, depends on existing depth at current end of channel
        - Depends on what the results of the ship simulations as to how deep and if we have to extend the channel
    - Ntale Kajumba (EPA)
        - Range of depths?
    - Angela Bulger (Atkins)
        - We don't know now, thinking between 42 and 49
    - Mark Thompson (NMFS)
        - Are you looking at alternatives and options for material placement?
    - Angela Bulger (Atkins)
        - Yes, DMMP will have an evaluation of the new work and maintenance material placement options
    - Ntale Kajumba (EPA)
        - What about overdredge?
    - Angela Bulger (Atkins)
        - 2 foot allowable and 2 foot advance maintenance, for a variance of 4 feet
        - 47 foot deep channel could be 51 feet deep
    - Ntale Kajumba (EPA)
        - What about sediment testing?
    - Angela Bulger (Atkins)
        - Maintenance material is sampled prior to each maintenance dredging event
    - Elizabeth Calvit (CH2M)
        - Anchor QEA did additional sampling of the virgin material and this information will be in the DMMP
    - Angela Bulger (Atkins)
        - Toxicity testing too
        - Did the full suite of testing (grain size, bioassay, etc)
    - Ntale Kajumba (EPA)
        - Doug Johnson (EPA) is the person that will handle this
    - Elizabeth Calvit (CH2M)
        - Anchor QEA is working with Doug
    - Mark Thompson (NMFS)
        - Has concerns with unconfined disposal
        - Support beneficial use with the new work and maintenance material
        - Is the USACE going to take over maintenance?
    - Angela Bulger (Atkins)
        - Possibly – would have to address with the USACE separately
    - Mark Thompson (NMFS)
        - Will this be added to the EIS?
    - Angela Bulger (Atkins)
        - It will be noted in the EIS
    - Munther Sahawneh (USACE)

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        - Another process to follow is the 408 – important to federal channel/civil work
        - Economics – required by the Port and goes to planning and operation
        - 204 process – separate outside regulatory
    - Mark Thompson (NMFS)
        - Will it be treated as a 404 permit application?
    - Munther Sahawneh (USACE)
        - Yes
    - Ntale Kajumba (EPA)
        - Can you tell us what the Purpose and Need is for the newer folks
    - Angela Bulger (Atkins)
        - Purpose and Need is to have a channel to allow large ships and increase attractiveness of the Port to meet throughput goals – 2 million TEUs/year
    - Joe Conn(MSPA)
        - What changes is the increased throughput of containers
    - Ntale Kajumba (EPA)
        - Some of the comments will remain the same
        - Look at the alternatives in relation to the purpose and need
        - Alan Powell (EPA) will deal with air quality issues, criteria pollutants, and air toxics
            - Local impacts and diesel emissions reduction methods
    - Alan Powell (EPA)
        - Trying to get a good picture with this project and other projects
        - Interested in the impacts and the design to minimize impacts
        - This is what EPA likes to see
    - Angela Bulger (Atkins)
        - We have some posters to address this at the scoping meeting and how we are going to handle these issues
    - Ntale Kajumba (EPA)
        - Other issue areas:
            - Doug Johnson – sediment dispersal issue and fill concerns
                - Would appreciate having a reduced amount of fill – would reduce the involvement with other people
            - Noise related issues
                - Particularly associated with the transportation corridors and activities along these inland facilities – this needs to be examined as part of the process
                - Need to look at particularly where related to EJ issues
            - Need to coordinate with state groups
            - Children's health
            - Climate change
            - Cumulative impacts to all projects in the area
    - Angela Bulger (Atkins)
        - We have posters at the scoping meeting to address these concerns
        - We are at the beginning stages of developing the alternatives
        - There are a combination of things to look at

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        - Traffic/air/noise/EJ are all on the radar and we can sit down and go through to let you know where we stand
- Alan Powell (EPA)
    - Will there be increased ship trafic or same amount regardless of improvement
- Angela Bulger (Atkins)
    - Anticipate an increase in federal navigation channel not in the Gulf of Mexico, but will look closely at this in EIS
- Alan Powell (EPA)
    - Are you looking to make the channel deeper so you can increase the number of ships coming in?
- Angela Bulger (Atkins)
    - Anticipate increased ship traffic in the navigation channel to access the Port but not in the Gulf of Mexico itself
- Ryan Hendren (?)
    - No increase in the numbers?
- Angela Bulger (Atkins)
    - Yes, there will be an increase in numbers in regards to ships calling at the Port
    - The analysis is not complete yet but the traffic is expected to increase some going in and out of the Port
    - There will be more ships in/out of the Port for each user
    - We are at the beginning stage of looking at this
    - Logic would say there would be an increase in traffic in the channel
- Joe Conn (MSPA)
    - The restoration program will bring in new tenants which would increase traffic
- Elizabeth Calvit (CH2M)
    - Different kind of tenant – higher capacity containers than currently have
- Angela Bulger (Atkins)
    - The Port is looking at different tools
- Joe Conn (MSPA)
    - Yes, considering adding cold-ironing capabilities
- Mark Thompson (?)
    - Are you looking at the bends in channel?
    - In addition to what the USACE recently did?
- Angela Bulger (Atkins)
    - Ship simulations considered existing channel conditions and different depths
    - They had issues with the bends so they ran some with wider areas in the channel
- Wendell Mears (Anchor QEA)
    - Smoother cut bends so the ships can get through more easily
- Elizabeth Calvit (CH2M)
    - Did we meet Alan at the last scooping meeting?
- Alan Powell (EPA)

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        - No – EPA Region 4
- Elizabeth Calvit (CH2M)
    - Now is a good opportunity to ask us questions and discuss now, what are your concerns?
- Alan Powell (EPA)
    - Whether or not the goal is economic development or just to allow big ships to come in and no increase in container traffic
- Joe Conn (MSPA)
    - With the restoration project we now have a mandate to increase jobs which will increase traffic
- Alan Powell (EPA)
    - Look at importance of increased container traffic
        - More cranes operating – more businesses operating – more trucks/trains operating
        - Importance of channel deepening
        - Really like to see:
            - Air quality model – develop emissions inventory of land equipment and information from sea side then do a comparison
            - If know what you have then you know where the problem is
            - Localized impact – still have on local level or air quality community
            - Where improvements will really occur and how to minimize impacts
        - We will ask for everything and hope we get it
- Angela Bulger (Atkins)
    - Starting traffic evaluation and air quality evaluation
    - Onsite emissions and ships
    - Proceed with the no action and each alternative
    - The air evaluation is on hold now – going back and looking at the existing conditions without the road
    - Looking at traffic without the road and this information will feed into the air evaluation
    - EJ – census track/block - >65 and <18 years of age
- Alan Powell (EPA)
    - Need local analysis
    - Dispersion analysis to identify hot spots and where you can fix them
- Angela Bulger (Atkins)
    - Alternatives
        - The no action assumes the restoration project is completed
        - There will be a whole suite of potential alternatives to screen
        - There are a huge number of possibilities that meet the purpose and need of the project and we will need to screen those down to a reasonable level for evaluation in the EIS
- Ntale Kajumba (EPA)

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        - Do you have a list of these alternatives?
    - Angela Bulger (Atkins)
        - No, it would be too confusing to the public
        - We met in January to discuss
        - We have lots of alternatives to screen out
        - Still developing the screening criteria
    - Kim Fitzgibbons (Atkins)
        - We have a board discussing alternatives but it doesn't line them up and show all the possible combinations
    - Wendell Mears (Anchor QEA)
        - DMMP and BU Plan
        - DMMP tested for ODMDS and chemistry
        - Had to pick where had current capacity and left in the BU option
        - One cut through the barrier island – all that material left in littoral process
    - Mark Thompson (NMFS)
        - You are looking at more than unconfined open water placement?
    - Wendell Mears (Anchor QEA)
        - Yes, for the new work material
        - Would satisfy the USACE to assume maintenance
    - Ryan Hendren
        - Material within the sound?
    - Wendell Mears (Anchor QEA)
        - BU or ODMDS site
    - Elizabeth Calvit (CH2M)
        - State DMR has master plan for the BU
        - The DMMP identified existing and proposed BU sites
        - Anticipate as new sites become permitted, will work with applicant to make sure material is not lost
        - Expect to work with DMR to permit a new BU site
    - Ryan Hendren
        - Stressed with USACE to develop a program for BU site to permit faster
    - Elizabeth Calvit (CH2M)
        - Should be able to figure something out
    - Wendell Mears (Anchor QEA)
        - One BU program in the master plan
        - Biloxi marsh – is evaluated in the DMMP
    - Mark Thompson (NMFS)
        - Looking at through NERDA?
    - Wendell Mears (Anchor QEA)
        - Yes, looking to that as well
        - There is lots of capacity there
    - Mark Thompson (NMFS)
        - Have to assume that Louisiana would want all of the material (for Biloxi marsh)
    - Elizabeth Calvit (CH2M)
        - Louisiana has indicated they want it going to Biloxi Marsh

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        - Wraps around Hancock, County, MS – put most material there to serve as a buffer to storms
    - Ntale Kajumba (EPA)
        - Want to know more about the industry coming to the Port as a result of the project
    - Joe Conn (MSPA)
        - That is difficult to get a commitment until the project is built
        - Expansion project provides 160 acres for new tenants – this is what would expect to be a high capacity area
        - Current tenants – leave by truck within 24 hours of arrival
            - Export products to and from the Caribbean
        - 2nd largest importer of green fruit to the US
            - Predominately bananas
        - Dole/Chiquita export paper to the Caribbean
        - Crowley ships out a lot of raw cotton cloth – clothing made and brought back in to the US
        - DuPont – ore from Australia and Western Africa
        - Restoration – will allow for future high capacity tenant
    - Daron Wilson (MDA)
        - Focus on growth
        - Potential for granite market in South America
        - 2nd European market on energy sectors
        - Aerospace, auto, lumber, agriculture, many factors
        - Focus on looking at market not current existing
        - Will identify these new markets to see how they fit into the economic growth potential
        - Growth exists and attracts new markets that can grow
    - Alan Powell (EPA)
        - Cranes?
    - Joe Conn (MSPA)
        - We own cranes
        - Will replace with new and add rail cranes
    - Lon Elledge (CH2M)
        - Have the capacity for intermodal port
        - Includes effects of containerized rail
    - Joe Conn (MSPA)
        - Expect larger tenant bringing in containers to ship out of the state
    - Elizabeth Calvit (CH2M)
        - Considering coal because of increased need
    - Joe Conn (MSPA)
        - Will upgrade the entire fleet and can provide that capacity
    - Lon Elledge (CH2M)
        - Expect other tenants – install to increase capabilities
        - Length of the proposed channel?
    - Wendell Mears (Anchor QEA)
        - Will have to do the math to see how far out the dredging will occur

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- Mark Thompson (NMFS)
  - Assume you have gone back to regulatory history and mitigation associated with it – all brought up to current mitigation?
- Angela Bulger (Atkins)
  - Introduction to the EIS will discuss the history but it is not focused on in the EIS
- Jennifer Wittmann (MDMR)
  - We are in discussions with the Port and have to come up with creative mitigation
  - Not included in application yet but are aware of the mitigation requirement
- Mark Thompson (NMFS)
  - Look at historic mitigation – some may/may not be successful
  - Can discuss this at some point
- Jennifer Wittmann (MDMR)
  - Project for restoration was done, changed the site to near DuPont
  - Port is up to date on mitigation from past projects
- Mark Thompson (NMFS)
  - Discovery Bay?
- Jennifer Wittmann (MDMR)
  - Discovery Bay was changed to the DuPont site
- Mark Thompson (NMFS)
  - Mitigation?
- Elizabeth Calvit (CH2M)
  - Get update from John Webb for mitigation
- Lon Elledge (CH2M)
  - If the material goes to Biloxi Marsh – BU then BU in another state (i.e. Oklahoma)
- Jennifer Wittmann (MDMR)
  - That's up to the state
  - Required by law
- Elizabeth Calvit (CH2M)
  - Might be out of state or the material goes to the ODMDS
- Jennifer Wittmann (MDMR)
  - Beneficial impact on Mississippi
  - Not concerned if material goes to Louisiana
- Ntale Kajumba (EPA)
  - Supports BU options
  - Mitigation options?
- Angela Bulger (Atkins)
  - No solid impacts to mitigation yet – early on in the process
- Jennifer Wittmann (MDMR)
  - Restore water flow to marsh areas – these are types of mitigation that will happen
- Mark Thompson (NMFS)
  - Loss of 200 acres of Mississippi sound bottom is worthy of mitigation

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        - Mitigated for 1989 permit
    - Jennifer Wittmann (MDMR)
        - Will mitigate for it again
    - Angela Bulger (Atkins)
        - We are discussing mitigation options
    - Wendell Mears (Anchor QEA)
        - Dredging will add 5 miles to the channel length for the 42-foot and 10 miles for the 47-foot
        - All south of the barrier islands at an easterly setting
    - Lon Elledge (CH2M)
        - Safety fairway where the channel extends out
    - Wendell Mears (Anchor QEA)
        - Compound the numbers
        - 2 foot advanced maintenance and 2 foot allowable overdredge
    - Mark Thompson (NMFS)
        - What is the depth of the new Outer Bar Channel?
    - Wendell Mears (Anchor QEA)
        - 50 feet
    - Mark Thompson (NMFS)
        - How many miles maintained away from the Port?
        - Deeper channel require more maintenance?
    - Wendell Mears (Anchor QEA)
        - Don't know
        - Dead east where we turn
        - Look at Pascagoula as a comparison
    - Alan Powell (EPA)
        - Total max depth is 51 feet?
    - Wendell Mears (Anchor QEA)
        - Yes
    - Wendell Mears (Anchor QEA)/Angela Bulger (Atkins)
        - Channel lengths:
            - Sound Channel 10 miles
            - Bar Channel 3 miles
            - Gulf Channel 4-5 miles
            - 20 miles total
    - Ntale Kajumba (EPA)
        - Still need to include the roadway capacity or use existing roads
    - Angela Bulger (Atkins)
        - We are working with MDOT looking at the existing roadways and what future roadways will be realistic to include in the model
        - If find impacts, will look at mitigation to alleviate
    - Ntale Kajumba (EPA)
        - Where are we in the process to mitigate for traffic impacts? Will there be a need for increased capacity?
    - Angela Bulger (Atkins)

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        - We are working with MDOT to set up a traffic model so we don't know exactly what the impacts will be or where mitigation will be needed. We have an idea but need to get the models run.
    - Elizabeth Calvit (CH2M)
        - Going in one direction with the traffic study but this feeds into the reduction with things – SR601 road
        - Had to go back to square one when the connector road permit was pulled
    - Angela Bulger (Atkins)
        - Had to take our SR601 from the baseline
    - Carla Brown (MDEQ)
        - Harrison County is in attainment for ozone
        - Air quality issues need to be addressed
        - Visibility should be addressed
    - Angela Bulger (Atkins)
        - We will look at VOC and NOx
        - Our air quality experts are used to dealing with these issues
        - No general conformity determination because the area is still in attainment
        - Could be a permit condition if area is not in attainment at the time
    - Alan Powell (EPA)
        - Can do analysis even though you don't have to
    - Ntale Kajumba (EPA)
        - What is the timeline on the progress of the DEIS and FEIS?
        - Will you send scoping minutes from meeting
    - Angela Bulger (Atkins)
        - Minutes will be distributed to everyone here
        - Timeline for the DEIS is early 2014 (Quarter 1)
        - FEIS is July 2015
        - Gulf sturgeon monitoring/tagging is ongoing
            - Tagging juveniles in the Pearl and Pascagoula rivers
            - Arrays are located around the Port footprint
            - We are seeing them there
            - Preliminary data
            - Coordinating with Ryan Hendren

MEETING ADJOURNED.

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Port of Gulfport
EXPANSION PROJECT EIS
HARRISON COUNTY, MISSISSIPPI

Tuesday, May 21, 2013
2:00 P.M. – 4:00 P.M.
Marriott Courtyard Gulfport Beachfront Hotel
1600 East Beach Boulevard
Gulfport, Mississippi 39501

Agency Workshop Sign-In Sheet

#	Name	Agency Affiliation	Address	Phone	E-mail
1	Carrie Barefoot	MDEQ	515 E. Amite-Jackson. MS	601-961-5322	Carrie_Barefoot@deq.state.ms.us
2	Carla Brown	"	"	601-961-5235	cbrown@deq.ms.gov
3	Sid Cawthorn	"	"	—	sid_cawthorn@deq.ms.gov
4	Jennifer Withmann	MDMR	1141 Bayview Ave. Biloxi	228-374-5000	jennifer.withmann@dmr.ms.gov
5	Kim Fitzgibbons	ATKINS	7406 Fullerton St. Suite 350	904-363-8447	Kimberly.fitzgibbons@atkinsglobal.com
6	Lisa Vitale	ATKINS	6504 Bridgepoint Pkwy	512 343 3389	lisa.vitale@atkinsglobal.com
7	Joe Conn	MSPA	262 Southern Circle Gulfport MS	228-865-4300	jconn@shipmsp4.com
8	Ewing Milam	MDA	500 Lamar ST Jackson MS 39201	601 359-2157	emilam@mississippi.org
9	Elizabeth Calvert	CH2M Hill	2510 14th St Suite 1013	228-822-2080	ecalvert@ch2m.com
10	Paul Bradley	Volkert	3809 Moffett Rd 36618 Mobile AL 251 753-3472	251 753-3472	Paul.bradley@Volkert.com
11	Lon Elledge	CH2M Hill	2510 14th ST, Suite 1013 Gulfport, MS	228-822-2080	lon.elledge@ch2m.com
12	PHILIP CARTER	MDA	501 N. WEST ST. JACKSON, MS 39201	601.359.2569	PCARTER2@MISSISSIPPI.ORG

US Army Corps of Engineers®
Mobile District

Port of Gulfport
EXPANSION PROJECT EIS
HARRISON COUNTY, MISSISSIPPI

Tuesday, May 21, 2013
2:00 P.M. – 4:00 P.M.
Marriott Courtyard Gulfport Beachfront Hotel
1600 East Beach Boulevard
Gulfport, Mississippi 39501

Agency Workshop Sign-In Sheet

#	Name	Agency Affiliation	Address	Phone	E-mail
13	DARON WILSON	MDA	501 NORTH WEST STREET JACKSON, MS 39201	(601) 359-2378	dwilson@mississippi.org
14	CHRIS CARRON	Balch & Bingham LLP	1310 25th Ave. Gulfport, MS 39501	(228)214-0432	ccarron@balch.com
15	Ntale Kajumba	EPA	61 Forsyth Street Atlanta, GA 30310	(404) 562-9620	Kajumba.ntale@epa.gov
16	Alan Powell	"	"	404/562-9045	Powell.alan@epa.gov
17	Christiana Hassin	WATKINS & EAGER/MDA	400 East Capital St. Jxn, MS 39201	601-965-1834	CHASSIN@WATKINSEAGER.com
18	Kaaren Neumann	USACE		228-[illegible]	Kaaren.M.Neumann@usace.army.mil
19	Maryellen Farmer	USACE		228-523-[illegible]4116	Maryellen.J.farmer@usace.army.mil
20	Wendell Mears	Anchor QEA		2288189626 251-533-1881	WMears@anchorqea.com
21	On phone:				
22	Ryan Hendren Mark Thompson	NMFS			
23	Paul Necaise	USFWS			

US Army Corps of Engineers
Mobile District

Port of Gulfport
EXPANSION PROJECT EIS
HARRISON COUNTY, MISSISSIPPI

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1600 East Beach Boulevard
Gulfport, Mississippi 39501

Agency Workshop Sign-In Sheet

#	Name	Agency Affiliation	Address	Phone	E-mail
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25					
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Appendix H6

General Correspondence

MISSISSIPPI CENTER FOR JUSTICE

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JACKSON, MS 39215-1023
601-352-2269
fax 601-352-4769
www.mscenterforjustice.org

A Mississippi Nonprofit Corporation

BILOXI OFFICE
974 Division Street
Biloxi, MS 39530-2960
228-435-7284
fax 228-435-7285

March 15, 2011

Daron Wilson
PMO Disaster Recovery Division
Mississippi Development Authority
Post Office Box 849
Jackson, Mississippi 39205-0849

re: DOA Permit MS-96-02828-U - February 11, 2011 Notice of FONSI/RROF

Dear Mr. Wilson:

On February 25, 2011, at 2:55 pm, I sent the attached letter to the address identified in your notice, disasterrecoverycomments@mississippi.org. See attached email. MDA is the only party who claims not to have received this communication directly. MDA's contention that the objectors did not submit a copy of this document within the prescribed deadline is false. Please immediately retract the assertion and correct the record.

MDA did not forward to the objectors a copy of the March 10, 2011, letter and any supporting documentation sent to HUD requesting the release of funds. Please do so immediately, per my phone call to you this morning.

Please also make available for inspection the original environmental assessment performed on the project prior to the original EA/FONSI. Please contact my office to schedule the appointment. In this and all future communications, be advised that communication to me should be directed to our Gulf Coast Office, not the Jackson office. I may be reached by email at rmorse@mscenterforjustice.org.

We accept your offer to meet within the next two weeks at the Knight Center Conference room, Gulfport, Mississippi, where MDA has an office. Please propose acceptable dates.

Very Truly Yours,

Reilly Morse

Reilly Morse

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cc. Scott Davis, CPD, US Department of Housing and Urban Development
Joe Rich, Esq.
Roberta Avila, Steps Coalition
Robert Alessi, Esq., Dewey and Leboeuf LLP
Damon Young, US Army Corps of Engineers
Charles Bearman, Esq.

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February 25, 2011

Mr. Daron Wilson
Mississippi Development Authority
P.O. Box 849
Jackson. MS 39205

Re: Comments and Objections to the Notice of Finding of No Significant Impact and Notice of Intent to Request Release of Funds Issued by MDA for a Project Known as the "24-Acre Fill, New Tenant Terminals and Infrastructure Project at the Port

Dear Mr. Wilson:

We write to you on behalf of Steps Coalition to interpose our comments on and objections to the February 7, 2011 Notice of Finding of No Significant Impact ("FONSI") and Notice of Intent to Request Release of Funds ("RROF") (the "February 2011 Notices") issued by the Mississippi Development Authority ("MDA") for the 24 Acre Fill, New Tenant Terminals and Infrastructure Project (the "24 Acre Fill Project").

I. SUMMARY

The FONSI and RROF contained in the February 2011 Notices are illegal because they are based on an environmental analysis ("EA") that failed to aggregate the 24 Acre Fill Project with the other component activities of the Port of the Future Project (as hereinafter defined). The United States Department of Housing and Urban Development ("HUD") regulations require MDA to group together and evaluate as a single project all individual activities which are related either on a geographical or functional basis, or are logical parts of a composite of contemplated actions. The 24 Acre Fill Project and the other components of the Port of the Future Projects are clearly related on both a geographical and functional basis and the 24 Acre Fill Project is a logical part of a composite of several contemplated actions to revitalize and rebuild the Port of Gulfport (the "Port"). Therefore, the 24 Acre Fill Project and the other components of the Port of the Future Project must be aggregated and evaluated as a single project for environmental review purposes. Moreover, HUD and National Environmental Policy Act ("NEPA") (42 U.S.C. 4321 et seq.) regulations require any environmental review of the 24 Acre Fill Project to analyze the cumulative impacts of all of the components of the Port of the Future Project. Accordingly, MDA should withdraw the FONSI and RROF contained in the February 2011 Notices.

Furthermore, under HUD's regulations, the release of $481 million in federal Community Development Block Grant ("CDBG") funds (over 80% of the total funding allocated for the entire Port of the Future Project)[1] for just the 24 Acre Fill Project, which comprises just three of the nine programs/activities contemplated by the Port of the Future Project (as embodied in the MDA's action plans), would constitute a substantial amendment to MDA's action plans. As a result, HUD's regulations require MDA to draft and publish a new action plan detailing the substantial amendment and issue the amended action plan for public notice and comment before it is submitted to HUD for review and approval. The amended action plan must receive HUD approval before any release of CDBG funds can be sought.

II. BACKGROUND

There are ten projects/plans/permits relevant to this comment and objection letter, including: 1) the 84 Acre Fill Project; 2) the 1998 Army Corps Permit; 3) the 2007 Gulfport Master Plan; 4) the 2007 Application to the Army Corps; 5) the September 2007 Action Plan; 6) the December 2007 Action Plan; 7) the September 2008 modification of the 2007 Master Plan approved by the MSPA on October 24, 2008, which has been called the Port of the Future Project; 8) the October 27 2008 Action Plan Modification; 9) the 2010 Application to the Army Corps; and 10) the April 2010 Army Corps Notice.[2] They are summarized and discussed below to illuminate why the 24 Acre Fill Project should be aggregated with the Port of the Future Project for environmental impact review under NEPA and HUD regulations.

A. The 1998 Port Expansion Permit

The Port of Gulfport ("Port") has a long history of expansion proposals and this history demonstrates that well before the major expansion plan devised by the Mississippi State Port Authority ("MSPA") after Hurricane Katrina, there were major environmental concerns raised that were never properly addressed. Prior to 1991, the Port facility occupied 286 acres in the Mississippi Sound. In 1991, a 29-acre fill expansion was permitted to accommodate existing and anticipated future containers throughput for the next 50 years. In 1994, the MSPA devised a master plan for greater expansion of the Port (the "1994 Gulfport Master Plan").

As part of the 1994 Gulfport Master Plan, MSPA sought dredge and fill permits from the U. S. Army Corps of Engineers ("Army Corps") for, among other things, the filling of 84 acres of open water, the dredging of 300,000 cubic yards (cy) of material, and the construction of a 900' by 150' pier extension (the "84 Acre Fill Project"). In response to MSPA's application to the Army Corps for the dredge and fill permits associated with the 84 Acre Fill Project, the National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS"), the U. S. Department of

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[1] In fact, news reports now indicate that the 24 Acre Fill Project is expected to consume all of the $570 million in federal CDBG funds. See http://www.portofthefuture.com/News.aspx?NewsID=138.

[2] Capitalized terms not previously defined are defined below.

Interior's Fish and Wildlife Service, and the U.S. Environmental Protection Agency ("EPA") found that the 84 Acre Fill Project may result in substantial and unacceptable impacts. Also, the EPA recommended that an environmental impact statement ("EIS") be prepared and that an environmental assessment ("EA") would not adequately document significant effects of the 84 Acre Fill Project as proposed. Despite these objections, an EIS was not completed for the 84 Acre Fill Project, and the Army Corps issued a permit for the 84 Acre Fill Project in July 1998 (the "1998 Army Corps Permit").[3]

The 84 Acre Fill Project was to be completed in three phases. Under Phase I, 30 acres were to be filled for expansion of the container storage area and construction of the extension of the West Pier. Phase II called for filling an additional 30 acres of open water. Phase III called for filling the remaining 24 acres and for an on-dock intermodal facility providing transfer to a railroad extension. Thereafter, apparently because of the lack of funds, little work was done on the 84 Acre Fill Project. Notwithstanding, MSPA sought and received several permit extensions from the Army Corps. The last extension, which was granted by the Army Corps in 2009, extended the expiration date of the 1998 Army Corps Permit through July 9, 2013.

B. New Proposals for the Expansion of the Port

In 2003, consultants for MSPA formulated a new master plan (the "2003 Gulfport Master Plan") that called for construction of four casinos and two cruise terminals, in addition to expanding the piers as provided for in the 1994 Gulfport Master Plan. However, after Hurricane Katrina, and after Mississippi was awarded over $5.5 billion in CDBG funds by HUD for recovery from the disaster, the MSPA hired a consultant to analyze and reevaluate the 2003 Gulfport Master Plan. As a result of that analysis, in June 2007, the MSPA approved a proposal involving a major expansion of the Port, dwarfing the 1994 and 2003 Gulfport Master Plans and what was envisioned when the 1998 Army Corps Permit was issued (the "2007 Gulfport Master Plan"). Indeed, the 2007 Gulfport Master Plan called for the single greatest expenditure of taxpayer money for any state enterprise in the history of Mississippi, with a cost that was ten times the cost required for hurricane-related damage to the Port.

On September 7, 2007, MDA submitted a proposal to HUD in the form of an Action Plan (the "September 2007 Action Plan") seeking diversion of $600 million of CDBG funds from housing recovery programs to expand the Port. The September 2007 Action Plan addressed the 2007 Gulfport Master Plan with the following statement: "[t]he Mississippi Port Authority has completed a master plan for the re-development of the Port. The Plan projects approximately 5,400 direct and indirect maritime jobs to be generated by the year 2015." By letter of September 24, 2007, the undersigned objected

[3] At that time, the Office of Chief Engineers directed the Army Corps' Mobile District to evaluate the direct, secondary and cumulative impacts of the port expansion in a programmatic EIS that was being prepared to address large-scale coastal development in Mississippi. This programmatic EIS was not finalized until 2005, and, in any event, failed to adequately address concerns related to expansion of the Port.

to the September 2007 Action Plan. On December 12, 2007, the MDA submitted another proposal to HUD in the form of an Action Plan (the "December 2007 Action Plan") which is virtually identical to the September 2007 Action Plan, again stating that "[t]he 2007 Master Plan Update projects approximately 5,400 direct, induced and indirect maritime jobs to be generated by the year 2015." Over our objection to the December 2007 Action Plan, by letter of January 23, 2008, HUD approved the December 2007 Action Plan on January 25, 2008.

In addition, during the period that MDA was seeking the $600 million diversion in funding from HUD, the MSPA submitted on November 20, 2007 an application to the Army Corps for dredge and fill permits associated with the 2007 Gulfport Master Plan (the "2007 Application to the Army Corps"). Despite the obvious increase in the environmental impact and the tremendous size of the 2007 Gulfport Master Plan, the MSPA did not prepare or submit an EIS with the 2007 Application to the Army Corps and instead relied on a mere EA.

Several agencies and organizations, including the undersigned, submitted in depth objections to the Army Corps' proposed issuance of dredge and fill permits related to the 2007 Gulfport Master Plan.[4] Prior to the Army Corps completing its review, the MSPA withdrew its 2007 Army Corps Application in the spring of 2008. The MSPA's withdrawal was based on an analysis of a consulting firm hired as project manager for the 2007 Gulfport Master Plan, which concluded, among other things, that "no competitive position assessment or clear business plan" had been prepared for the 2007 Gulfport Master Plan.

On September 12, 2008, MSPA announced a new expansion "concept" for the Port (the "Port of the Future Project"). While there was no written plan accompanying this conceptual plan, it was apparent that the Port of the Future Project included, among other things, completing Phase III of the 84 Acre Fill Project with the filling of the remaining 24 acres. Despite the lack of a formal written plan, on October 24, 2008, the MSPA adopted the Port of the Future Project.

Because the MDA concluded that certain actions contemplated by the Port of the Future Project were substantially different than the actions set forth in the 2007 Gulfport Master Plan (as embodied in the December 2007 Action Plan), on October 27, 2008, MDA submitted to HUD a modification to the December 2007 Action Plan (the "October 2008 Action Plan Modification"). On November 10, 2008, the undersigned submitted comments objecting to the October 2008 Action Plan Modification, because it was based

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[4] By way of background, on December 20, 2007, NMFS submitted a letter concerning the 2007 Application to the Army Corps, which raised major environmental concerns with the filling and dredging of the harbor and the wetlands fill of 70 acres for the inland port. The letter recommended (1) that the permit for the filling of 145 acres and excavating 430 acres of the Mississippi Sound be denied; and (2) that further consideration of any Port expansion should require extensive, objective analysis of less damaging alternatives and suitable mitigation options accomplished through the preparation of an EIS. The undersigned's objection to MSPA's application to the Army Corps also asserted that the EA was inadequate and that a proposal of this breadth and impact required a full EIS.

only on a concept plan and would require funding beyond the $600 million approved for the December 2007 Action Plan. In short, a major basis for our objection was that MDA had not demonstrated how the Port of the Future Project would be financed beyond the $600 million approved. MDA ignored our comments and submitted the concept plan to HUD on November 18, 2008. Before we even had a chance to comment, HUD approved the concept plan (i.e., the Port of the Future Project) on November 21, 2008, with little apparent consideration but reduced the CDBG funding to $570 million.

On February 6, 2009, the MDA issued a FONSI and RROF similar to those contained in the February 2011 Notices. The February 6, 2009 RROF sought the release of more than $22 million of the $570 HUD CDBG funding that had been approved in 2008. This funding was for the completion of the 60-acre fill project contemplated under Phases I and II of the 1998 Army Corps Permit, which was only a portion of the Port of the Future Project proposal. By letter of March 6, 2009, the undersigned objected to the February 6, 2009 Notices on grounds that 1) MSPA still had not yet released a detailed plan for the Port of the Future Project; and 2) MSPA could not rely on the 1998 Army Corps Permit without aggregating the Port of the Future Project with the 84 Acre Fill Project and conducting comprehensive environmental review of both projects, which in light the massive scope and significant environmental impacts of the Port of the Future Project, would require preparation of an EIS. Nonetheless, MDA's request was apparently approved and $22 million was released by HUD for completion of Phases I and II of the 1998 Army Corps Permit.

III. EVENTS LEADING TO THE FEBRUARY 2011 NOTICE

In March 2010, the MSPA submitted a new application to the Army Corps for dredge and fill permits related to the Port of the Future Project expansion plan (the "2010 Application to the Army Corps"). The 2010 Application to the Army Corps seeks approval for, among other things, the filling of approximately 700 acres of open water, completing Phase III of the 84 Acre Fill Project with the filling of the remaining 24 acres, the construction of wharves, piers, bulkheads and breakwater structures, the construction of new a turning basin, dredging operations for a new turning basin, and elevating the Port to +25 feet.

MSPA hired a consultant to prepare an EIS for the Port of the Future Project in October 2010, and the consultant is in the early stages of formulating an EIS.[5] Preparation of the EIS for the Port of the Future Project is expected to take well over a year. The Army Corps will not make a decision on the 2010 Application to the Army Corps until the EIS is completed.

MSPA has conceded that any environmental analysis completed with respect to the 1998 Army Corps Permit and 84 Acre Fill Project cannot be used for the Port of the Future Project, because MSPA has hired a consultant to prepare an EIS for the Port of the Future Project. Given the substantial changes in the scope, nature and extent of the 84

[5] The first public scoping meeting for this proposal is scheduled for March 31, 2011.

Acre Fill Project that have occurred since 1998, and the new circumstances and environmental conditions that have arisen since the issuance of the 1998 Army Corps Permit (e.g., the aftermath of Hurricane Katrina and the nearly $600 million in federal funding earmarked for rebuilding the Port), an EIS is required for the aggregated projects contemplated by the Port of the Future Project, including the 24 Acre Fill Project. In order for the Army Corps to be able to fully assess the Port of the Future Project's true impacts from an environmental, public health, and environmental justice perspective, an EIS is clearly necessary.

Nonetheless, even before the MSPA had hired a consultant to do a full EIS for the entire Port of the Future Project, MSPA started the process of preparing an EA for the 24 Acre Fill Project for which release of $481 million is now sought in the February 2011 RROF. This EA has been completed and is the putative basis for the FONSI issued on February 7, 2011.

On September 27, 2010, MSPA also sought Army Corps approval to modify the 1998 Army Corps Permit and commence with Phase III of the 84 Acre Fill Project. Specifically, MSPA sought significant modifications to the 1998 Army Corps Permit to accommodate the following actions: 1) changing the proposed location of the 24 acre fill site; 2) allowing for additional disposal alternatives (i.e., beneficial use) for the dredged material; 3) elevating the West Pier terminal area to +25 feet; and 4) constructing new pile supported crane rail structures. By letter dated December 13, 2010, the Army Corps approved MSPA's requested modifications to the 1998 Army Corps Permit and granted authorization for MSPA to commence with the completion of Phase III of the 84 Acre Fill Project (i.e., filling 24 Acres of open water).

The 24 Acre Fill Project (which encompasses Phase III of the 84 Acre Fill Project) is plainly only one part of the Port of the Future Project. Indeed, on April 16, 2010 the Army Corps published a notice with respect to the 2010 Application to the Army Corps (the "2010 Army Corps Notice"), which explicitly states that the Port of the Future Project would "include the 84-acre fill area that was originally authorized under Department of the Army permit MS96-02828-U." (emphasis added). In addition, the 2010 Army Corps Notice also describes the Port of the Future Project as a project with far greater activities than the 24 Acre Fill Project.

Furthermore, it is clear from the 2010 Army Corps Notice, as was indicated in the December 2007 Action Plan and October 2008 Action Plan Modification approved by HUD, that the MSPA then contemplated that the $570 million in CDBG funds would be funding the entire Port of the Future Project. As stated in the 2010 Army Corps Notice: "the purpose of the proposal is for the restoration and revitalization of the existing port facility associated with a Community Development Block Grant through the U.S. Department of Housing and Urban Development in the amount not to exceed $570 million."

IV. DISCUSSION

As discussed in greater detail below, the FONSI and RROF contained in the February 2011 Notices are illegal; consequently, the MDA must withdraw both the FONSI and the RROF. First, the MDA has violated federal laws and regulations by failing to aggregate the 24 Acre Fill Project with the Port of the Future Project in its environmental review. Second, the proposed use of all of the $570 million in CDBG funds approved by HUD for the Port of the Future Project for just one part of the project (i.e., the 24 Acre Fill Project) constitutes a substantial amendment to MDA's 2007 and 2008 Action Plans and, thus, requires MDA to prepare of a modification to those plans which will be subject to public notice and comment before it is submitted to HUD for final consideration.

A. MDA's Failure to Aggregate the 24 Acre Fill Project With the Expanded Port Project In Its Environmental Review Is a Violation of Federal Laws and Regulations

NEPA and the Council on Environmental Quality's ("CEQ") implementing regulations (40 C.F.R. 1500 et seq.) require federal agencies proposing to take a major federal action to determine whether that action will significantly affect the quality of the human environment.[6] 42 U.S.C. § 4332(C). To that end, the agency must prepare an EA. 40 C.F.R. § 1501.4(b). In determining the significance of a project's impacts, an EA must analyze direct, indirect and cumulative impacts. 40 C.F.R. §§ 1508.7, 1508.8.

Moreover, HUD regulations require MDA to "group together and evaluate as a single project all individual activities which are related either on a geographical or functional basis, or are logical parts of a composite of contemplated actions." 24 C.F.R. § 58.32(a). Section 58.32 explains in relevant part that:

> The purpose of project aggregation is to group together related activities so that the responsible entity can: (1) Address adequately and analyze, in a single environmental review, the separate and combined impacts of activities that are similar, connected and closely related, or that are dependent upon other activities and actions [See 40 CFR 1508.25(a)]; (2) Consider reasonable alternative courses of action; (3) Schedule the activities to resolve conflicts or mitigate the individual, combined and/or cumulative effects; (4) Prescribe mitigation measures and safeguards including project alternatives and modifications to individual activities.

24 C.F.R. § 58.32(c).

In addition, Section 58.32(d) provides:

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[6] While HUD has delegated its NEPA responsibilities to MDA, under HUD's regulations, the responsible entity (i.e., MDA) must assume responsibilities for environmental review, decision-making and action that would apply to HUD under NEPA, and CEQ and HUD regulations. See 24 C.F.R. §§ 58.4, 58.5, 58.10 and 58.18.

> . . . When a recipient's planning and program development provide for activities to be implemented over two or more years, the responsible entity's environmental review should consider the relationship among all component activities of the multi-year project regardless of the source of funds and address and evaluate their cumulative environmental effects. The estimated range of the aggregated activities and the estimated cost of the total project must be listed and described by the responsible entity in the environmental review and included in the RROF. The release of funds will cover the entire project period.

24 C.F.R. § 58.32(d).

The EA on which MDA relies in issuing the FONSI for the 24 Acre Fill Project contravenes federal regulations because it does not aggregate the 24 Acre Fill Project with the other component activities of a multi-year project (i.e., the Port of the Future Project) for environmental review purposes, even though all of the activities are part of a greater effort to revitalize and rebuild the Port. Moreover, upon information and belief, the EA fails to analyze the cumulative environmental impact of all the components of the Port of the Future Project as required under NEPA and HUD regulations.[7] Instead, the EA only analyzes the impact of the 24 Acre Fill Project.[8]

The 24 Acre Fill Project (i.e., Phase III of the 84 Acre Fill Project) is inextricably linked to the Port of the Future Project on both a geographical and functional basis. As the 2010 Army Corps Notice states "[t]he [Port of the Future Project] would . . . include the 84-acre fill area that was originally authorized under [the 1998 Army Corps Permit]." Due to the passage of time and changed circumstances (e.g., the aftermath of Hurricane Katrina and the nearly $600 million in federal funding earmarked for rebuilding the Port), MDA can neither rely on the environmental review conducted in 1998 with respect to the 84 Acre Fill Project, nor rely on an EA that does not aggregate the 24 Acre Fill Project

---

[7] Because we do not have a copy of the EA, we are unable to conclude with certainty whether a proper cumulative impact analysis was performed. To the extent the EA does not evaluate the 24 Acre Project with the Port of the Future Project on a cumulative basis, the EA is defective under NEPA and HUD regulations. The fact that the EA is not readily available (e.g., posted on the internet) is grounds to delay the release of funds and extent the comment period until such document and attendant Environmental Review Record are provided to the undersigned or made readily accessible on the internet. Indeed, for all projects in the Port using CDBG funds, all project permitting and environmental impact review documents should be placed on the web promptly after their creation.

[8] In December 2010, when the Army Corps approved the modifications to the 1998 Army Corps Permit, it appears to have done so without conducting additional NEPA review or providing public notice. Because the MSPA's requested modifications result in "significant increases in scope of a permitted activity," the Army Corps should have processed the modification request as a new application for a permit. 33 C.F.R. § 325.7. Accordingly, the Army Corps should have issued the proposed modification to the 1998 Army Corps Permit for public notice and comment and conducted further environmental review under NEPA. Furthermore, such additional NEPA review necessarily would require the Army Corps to aggregate Phase III of the 84 Acre Fill Project (i.e., filling 24 acres) with the other component activities of the Port of the Future Project, because all of those activities are related either on a geographical and functional basis, or are logical parts of a composite of contemplated actions to revitalize and rebuild the Port.

with the other components of the Port of the Future Project, or consider the cumulative impact of all of the components of the Port of the Future Project. MDA is clearly required to "group together" the 24 Acre Fill Project with the other components of the Port of the Future Project and "evaluate them as a single project."

Furthermore, in light of the 2010 Army Corps Notice, we disagree with the statement contained in the February 2011 Notices that "the [24 Acre Fill Project] will have substantial independent utility irrespective of any future, proposed expansion." MDA's statement is conclusory and is devoid of analysis. The 24 Acre Fill Project, which incorporates Phase III of the 84 Acre Fill Project, has clearly been an integral part of the revitalization and rebuilding of the Port as evidenced by the fact that the completion of Phase III of the 84 Acre Fill Project has been a one component of every master plan issued since Hurricane Katrina. Moreover, the fact that the entire $570 million in federal CDBG funding allocated for the Port of the Future Project is now being used solely for the 24 Acre Fill Project, proves that 24 Acre Fill Project is intrinsically linked to the overall Port of the Future Project and does not have independent utility.

MSPA has already started preparing an EIS for the entire Port of the Future Project, which as stated above, includes the 24 Acre Fill Project. As such, the basis for MDA's issuance of a FONSI is fatally flawed. Segregating the modified 24 Acre Fill Project from the other components of the Port of the Future Project frustrates the purpose of NEPA and contravenes HUD regulations by preventing environmental review of the separate and combined impacts of similar, closely related, interdependent activities. In short, MDA cannot now rely on an EA for issuing a FONSI for the 24 Acre Fill Project at the same time that MSPA is preparing an EIS for the entire Port of the Future Project, of which the 24 Acre Fill Project is but one part. Instead, MDA is required to aggregate all of the components of the Port of the Future Project, including the 24 Acre Fill Project, for environmental review purposes in a single EIS.

B. MDA's Proposed Use of the $570 Million in CDBG Funding For One Portion of the Port of the Future Project Constitutes a Substantial Amendment to the October 2008 Action Plan Modification and, Thus, Requires Further Public Notice and Comment

HUD regulations require MDA to submit an Action Plan in order for MDA to receive federal CDBG funds. The Action Plan is a planning document which, among other things, indicates the activities for which CDBG funds will be spent. Importantly, HUD regulations require MDA to amend its Action Plan whenever it makes one of the following decisions: 1) to make a change in its allocation priorities or a change in the method of distribution of funds; 2) to carry out an activity using funds from any program covered by the Action Plan (including program income), not previously described in the action plan; or 3) to change the purpose, scope, location or beneficiaries of an activity. 24 C.F.R. § 91.505. Moreover, as MDA concedes in its January 27, 2011 letter to us, "adding or deleting an activity or changing the planned beneficiaries of an activity may necessarily constitute a substantial change requiring an amendment to the action plan."

Substantial amendments must be subject to at least a 30-day notice and comment period before the substantial amendment can be implemented. 24 C.F.R. § 91.115.

As noted above, MDA submitted its initial action plan in September 2007 and resubmitted this plan in December 2007. The December 2007 Action Plan states that the projects contemplated by the plan include, but are not limited to, an inland port program, the dredging/wharf construction program, the terminal backlands, and the terminal gates program. In October 2008, MDA submitted Modification 1 to the December 2007 Action Plan (i.e., the October 2008 Action Plan Modification). MDA conceded that the October 2008 Action Plan Modification was a substantial amendment to the December 2007 Action Plan, because it allowed for, among other things, 1) mitigation through raising the elevation of the Port to an estimated 25 feet; 2) the deepening the channel to accommodate larger ships; 3) the purchase of land for environmental mitigation; 4) the purchase of maritime and/or construction related assets and equipment to assist in restoration and provide for the long term recovery of the operating capacity of the Port; and 5) the commissioning of studies to assist permitting agencies in evaluation of the plan.

Despite the fact that December 2007 Action Plan and October 2008 Action Plan Modification list nine programs/activities which are to be funded by the $570 million CDBG grant, the February 2011 RROF limits over 80% of the funding to the 24 Acre Fill Project, just a mere fraction of the activities (three of nine) contemplated in either the December Action Plan or the October 2008 Action Plan Modification. Moreover, as noted above news reports now indicate that the 24 Acre Fill Project is expected to consume all the $570 million in federal funds. Clearly, MDA has effectively deleted six programs/activities from its action plans and has changed its allocation priorities by allocating the entire $570 million in CDBG funding to only the three activities contemplated by the 24 Acre Fill Project. Such a major change constitutes a substantial amendment to the October 2008 Action Plan Modification approved by HUD and requires the substantial amendment to be formally issued for public comment and then submitted to HUD for consideration. In short, MDA must seek and obtain approval of this substantial amendment before it can seek release of the CDBG funds approved for the Port.

V. CONCLUSION

For the forgoing reasons, the FONSI and RROF contained in the February 2011 Notices are illegal; therefore, MDA should withdraw the FONSI and RROF contained in the February 2011 Notices. An environmental review, including the preparation of an EIS that aggregates all of the component activities of the Port of the Future Project is required before funding for any aspect of the Port of the Future Project can be released. Moreover, the release of the entire $570 million in federal CDBG funds for a small fraction of the activities included in the December 2007 Action Plan and the October 2008 Action Plan Modification would constitute a substantial amendment to those action plans. Under HUD's regulations, this substantial amendment must be drafted and

published for public notice and comment and then submitted to HUD for consideration before any request for release of the funds is appropriate.

Sincerely,

Reilly Morse
Senior Attorney
Mississippi Center for Justice

Joseph D. Rich
Director, Fair Housing Project
Lawyers Committee for Civil Rights
Under Law

cc: Mercedes Marquez, Assistant Secretary CPD, US Department of Housing and Urban Development
Scott Davis, CPD, US Department of Housing and Urban Development
Roberta Avila, Steps Coalition
Robert Alessi, Esq. Dewey and LeBoeuf LLP
Damon Young, US Army Corps of Engineers

From: reilly morse <reillymorse@mac.com>
Subject: **Comments on February 7, 2011 FONSI/RROF**
Date: February 25, 2011 2:55:44 PM CST
To: disasterrecoverycomments@mississippi.org
Cc: Scott G Davis <Scott.G.Davis@hud.gov>, Joe Rich <joerich@lawyerscommittee.org>, roberta avila <ravila@cableone.net>, "Robert J. Alessi" <RAlessi@deweyleboeuf.com>, Mercedes M Marquez <Mercedes.M.Marquez@hud.gov>
Bcc: John Jopling <jjopling@mscenterforjustice.org>, howard page <stepsorg1@gmail.com>, Beth Orlansky <borlansky@mscenterforjustice.org>
Mime-Version: 1.0 (Apple Message framework v1082)
Content-Type: multipart/mixed; boundary=Apple-Mail-22-385080717
X-Smtp-Server: smtp.me.com:reillymorse
X-Universally-Unique-Identifier: 4db572aa-e0a8-4daf-b249-af87d72660d2
Message-Id: <91EC0463-8CC9-45BA-83F8-C58FEABFF087@mac.com>
▶ 1 Attachment, 480 KB

Please see attached letter.

Sincerely,

Reilly Morse
Mississippi Center for Justice
963 Division Street
Biloxi, MS 39530



DOCrm.pdf (480 KB)

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April 10, 2013

Ed Jennings, Jr.
Regional Administrator
U.S. Department of Housing and Urban Development
Atlanta Regional Office
Five Points Plaza Building
40 Marietta Street
Atlanta, GA 30303
VIA FAX 404-730-2392

re: Mississippi State Port at Gulfport
HUD/State identification number: B06DG280001

Dear Mr. Jennings:

We write on behalf of the Port Campaign Coalition, comprised of several community organizations, including the North Gulfport Community Land Trust, NAACP Gulfport Chapter, Gulf Restoration Network, Soria City Civic Organization, Gulf Coast Group of the MS Chapter of the Sierra Club, North Gulfport Civic Club, and Steps Coalition. We request that the U.S. Department of Housing and Urban Development ("HUD") reevaluate the environmental assessment submitted as part of MDA's 2011 request for the release of disaster-related CDBG funds, a request which was approved by HUD in 2011 for the captioned Mississippi State Port at Gulfport project (the "Port" or "Project"). That environmental review did not meet the requirements under the National Environmental Policy Act ("NEPA").[1] We call your attention in particular to the environmental justice determination, which was required as part of the December 2010 environmental assessment for the MSPA's request to HUD and which has significant flaws (see attachment A).

The MSPA's environmental justice assessment confines its inquiry to Census Tract 14, which is an overwhelmingly white beachfront enclave in Gulfport. By limiting the analysis to the beachfront, the analysis fails to correctly analyze the broad environmental justice geography affected by the Project. Four predominantly African American census tracts will have disproportionately higher concentrations

[1] This letter is in supplement to our letter of March 18, 2013 to Assistant Secretaries Johnston and Trasvina, of which you received a copy.

APR 12 2013

of exposure to air pollution from increases in truck and rail traffic traveling along the I-10/SR 601 port connector road and the Kansas City Southern Railway. A comparison of Census Tract 14, population 1,691, and these four census tracts which represent approximately 12,000 residents, appears below. A map depicting this geography is included as attachment B.

Census Tract	Location	Percent Minority	Percent White
14	East Beach	12%	79%
2	Soria City to Brickyard Bayou	47%	44%
23	Central Gulfport	57%	36%
18	N. Gulfport to Turkey Creek	81%	13%
24	North Gulfport	83%	12%

The City of Gulfport has demanded that the MSPA conduct a roadside air emissions study to determine if there would be disproportionate adverse air emissions effects upon these four census tracts, but the MSPA has refused this request. Since the requirement to assure compliance with NEPA was delegated to HUD under the Supplemental Appropriation bill and related regulations, we are asking you to reevaluate this issue.

More broadly, we also write to request that HUD, along with the U.S. Environmental Protection Agency ("EPA"), the U.S. Department of Transportation ("DOT") and the U.S. Army Corps of Engineers Mobile District ("Army Corps"), coordinate in the re-evaluation of the overall environmental impact of the planned expansion of the Port. Thus far, environmental review of Port-related projects has been conducted in a piecemeal fashion, resulting in both the extreme segmentation of the reviews and in faulty or no consideration of environmental justice and

cumulative impact issues. Because of this, re-evaluation of previous environmental reviews is required. Specifically, we refer to the reviews submitted as part of the following permit applications:

1. Approval of the modification of permit no. MS9602828U by the Army Corps in December 2010 concerning Phase III of the 84 acre fill related to the Port project. The faulty environmental review for this permit was performed by the State of Mississippi as part of its request for the release of disaster-related CDBG funds administered by HUD.
2. The Environmental Impact Statement associated with application SAM 2009-1768 DMY to the Army Corps. This review is pending and should be re-evaluated because the plan originally submitted has been fundamentally modified in recent months.
3. The review done with respect to Port connector road permit issued by the Army Corps with regard to the SAM-2007-1082 MFM, 162+ acre wetlands fill. This permit has been vacated by court order and thus a new Environmental Assessment ("EA") is required.
4. The EA completed for HUD as part of the permit for Kansas City Southern track upgrade: Gulfport to Hattiesburg.
5. The environmental review needed for pending application SAM-2012-01418-DMY to the Army Corps for a permit related to a Turkey Creek area proposal which includes a 300+ acre wetlands fill for port transportation and warehouse elements, referred to as the Domain at Prime Center.

In addition, there may be additional environmental reviews required in the future because (1) the Port is presently considering using the Gulfport Fertilizer site, which contains over 100 acres of wetlands, located on 33rd Street near the predominantly African-American community of North Gulfport for an inland terminal,[2] and (2) future federal ship channel dredging of the Gulfport Ship Channel has been proposed.

Given the scope of the Project, the numerous permits already sought without consideration of environmental justice or cumulative impacts, and the dramatic level of project segmentation that has already occurred in past reviews, a coordinated

---

[2] *See* Mississippi Department of Environmental Quality's corrective action plan found at http://www.deq.state.ms.us/mdeq.nsf/page/CE_GulfportFertilizerGulfportMS?OpenDocument.

review by HUD, DOT, EPA and the Army Corps is necessary and, in fact, required by NEPA and environmental justice policy enunciated by the White House (see attachment C). We respectfully request that you initiate such a coordinated review by these agencies by bringing all of the above mentioned activities under a single comprehensive EIS. The 1994 Executive Order Executive Order 12898 created the Federal Interagency Working Group on Environmental Justice to guide, support and enhance federal environmental justice and community-based activities. This effort was reinforced by President Obama's Memorandum of Understanding on Environmental Justice, which was signed by HUD, DOT, EPA and the Department of Defense. It is further reinforced by the April 1, 2013 letter from EPA to the Army Corps suggesting the same approach (see attachment D). Where a project has such significant potentially adverse ramifications, a comprehensive and thoughtful strategy is especially appropriate.

We would welcome the opportunity to meet with you to discuss this request further.

Very Truly Yours,

Reilly Morse
Mississippi Center for Justice

Joseph D. Rich
Lawyers' Committee for Civil Rights
Under Law

Gail Suchman
Stroock & Stroock & Lavan

cc.
Gwendolyn Keyes Fleming
Regional Administrator

U. S. Environmental Protection Agency
Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street SW
Atlanta GA 30303

Craig Littiken, Chief- Regulatory Division
US Army Corps of Engineers, Mobile District
P O Box 2288
Mobile, AL 36628

REVIEWED BY ENVIRONMENTAL COMPLIANCE:

DATE 12/14/10

ENVIRONMENTAL ASSESSMENT

AND

ENVIRONMENTAL REVIEW RECORD

Community Development Block Grant Disaster Recovery Project

24-ACRE FILL, NEW TENANT TERMINALS AND INFRASTRUCTURE
MISSISSIPPI STATE PORT AT GULFPORT
GULFPORT, MISSISSIPPI



Prepared For:
Mississippi Development Authority
Jackson, Mississippi

By:
The Mississippi State Port at Gulfport
2510 14th Street, Suite 1450
Gulfport, Mississippi 39501

December 2010

Environmental Assessment

for HUD-funded Proposals

Recommended format per 24 CFR 58.36, revised March 2005
[Previously recommended EA formats are obsolete].

entification: 24-Acre Fill, New Tenant Terminals and Infrastructure Project

seph O. Conn, P.E., Director of Disaster Recovery
ssissippi State Port at Gulfport

ntity: Mississippi Development Authority

mber 2010

Attachment A

Environmental Justice

[Executive Order 12898]

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, is designed to focus the attention of federal agency actions that may result in a disproportionately high and adverse human health or environmental effects on minority and low-income populations. A Census Tract is considered to have a disproportionate percentage of minority populations under either of two conditions: (1) the percentage of persons in minority populations in the Census Tracts exceeds the percentage in the county, or (2) the percentage of minority populations in the Census Tract exceeds 50 percent. The Port lies within the Census Tract 14, Harrison County, Mississippi. According to U.S. Census Bureau data for the 2000 Census, the total population for Census Tract 14 was 4,215 with a minority population of 497 individuals (11.8%). The proposed action will not negatively impact a disproportionately high number of minority or low-income residents. Based on the 2000 Census, Census Tract 14 is not considered to be a Census Tract with a disproportionately high percentage of minority populations. The percentage of minority populations in Harrison County is 26.9 percent, therefore Census Tract 14, with a minority percentage of 11.8 percent is not considered to have a disproportionately high minority population. Census Tract 14 has a median family income of over $30,341 compared to $32,779 for City of Gulfport and $35,624 for Harrison County; therefore, the proposed action will not have a disproportionate impact on low income residents. Also, there are no relocations required for the propose project. A copy of the Census Tract Data is provided in the ERR.

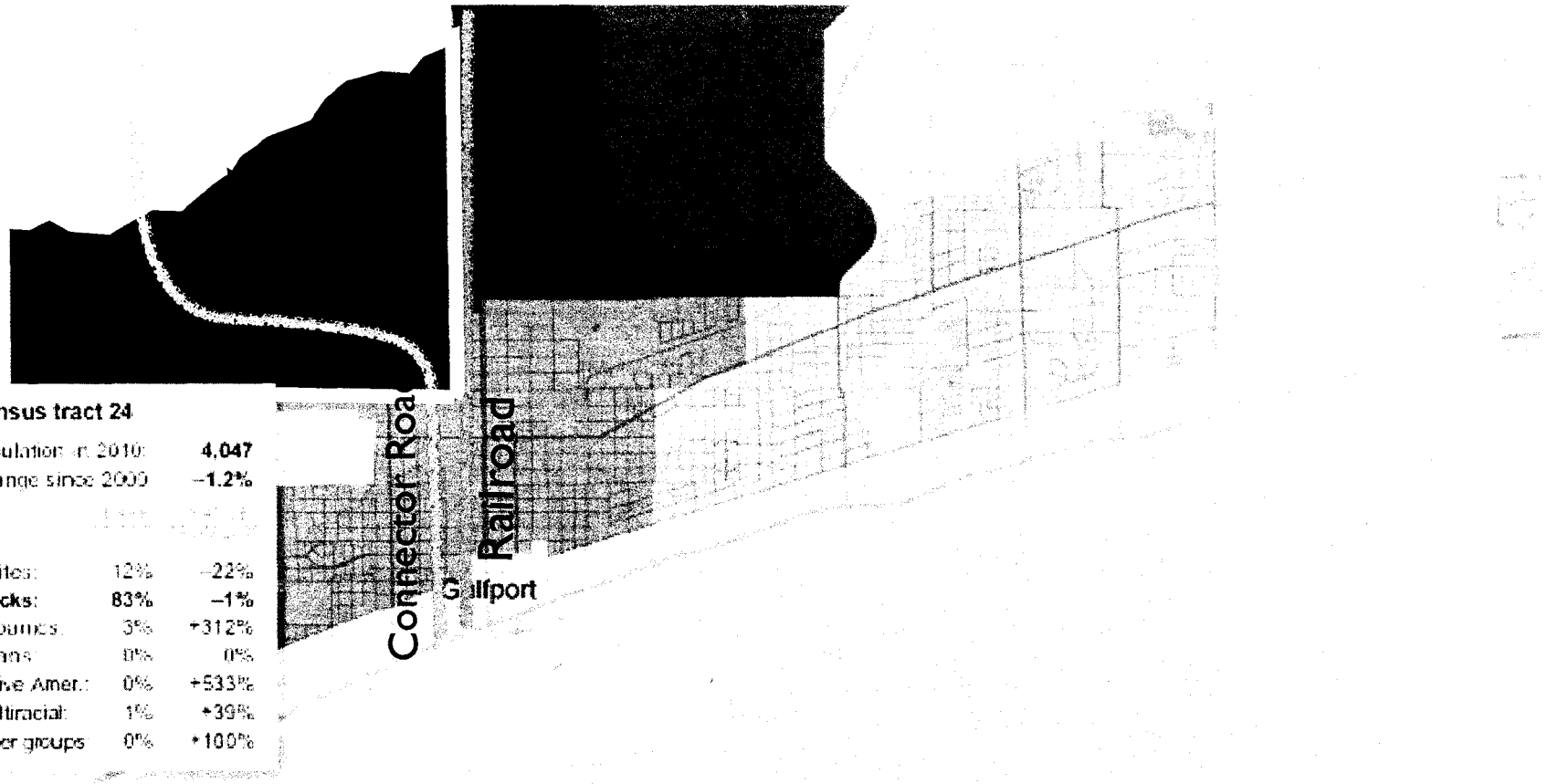
Census tract 14

Population in 2010:	**1,691**
Change since 2000:	**–59.9%**

	SHARE OF POP.	CHANGE FROM 2000
Whites:	79%	–63%
Blacks:	**12%**	**–43%**
Hispanics:	4%	–52%
Asians:	2%	–59%
Native Amer.:	1%	–15%
Multiracial:	2%	–35%
Other groups:	0%	–44%

Map data ©2011 G

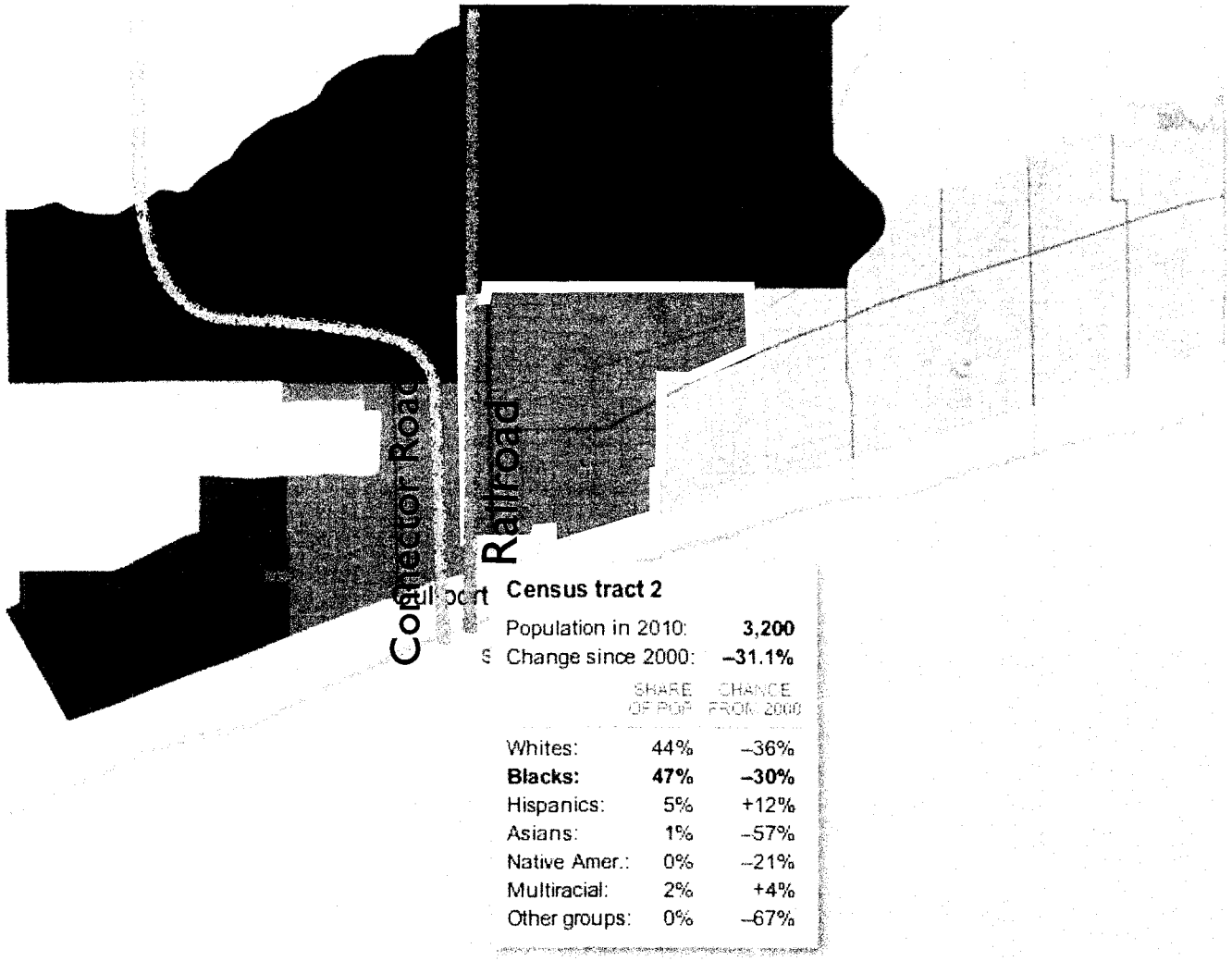
Attachment B

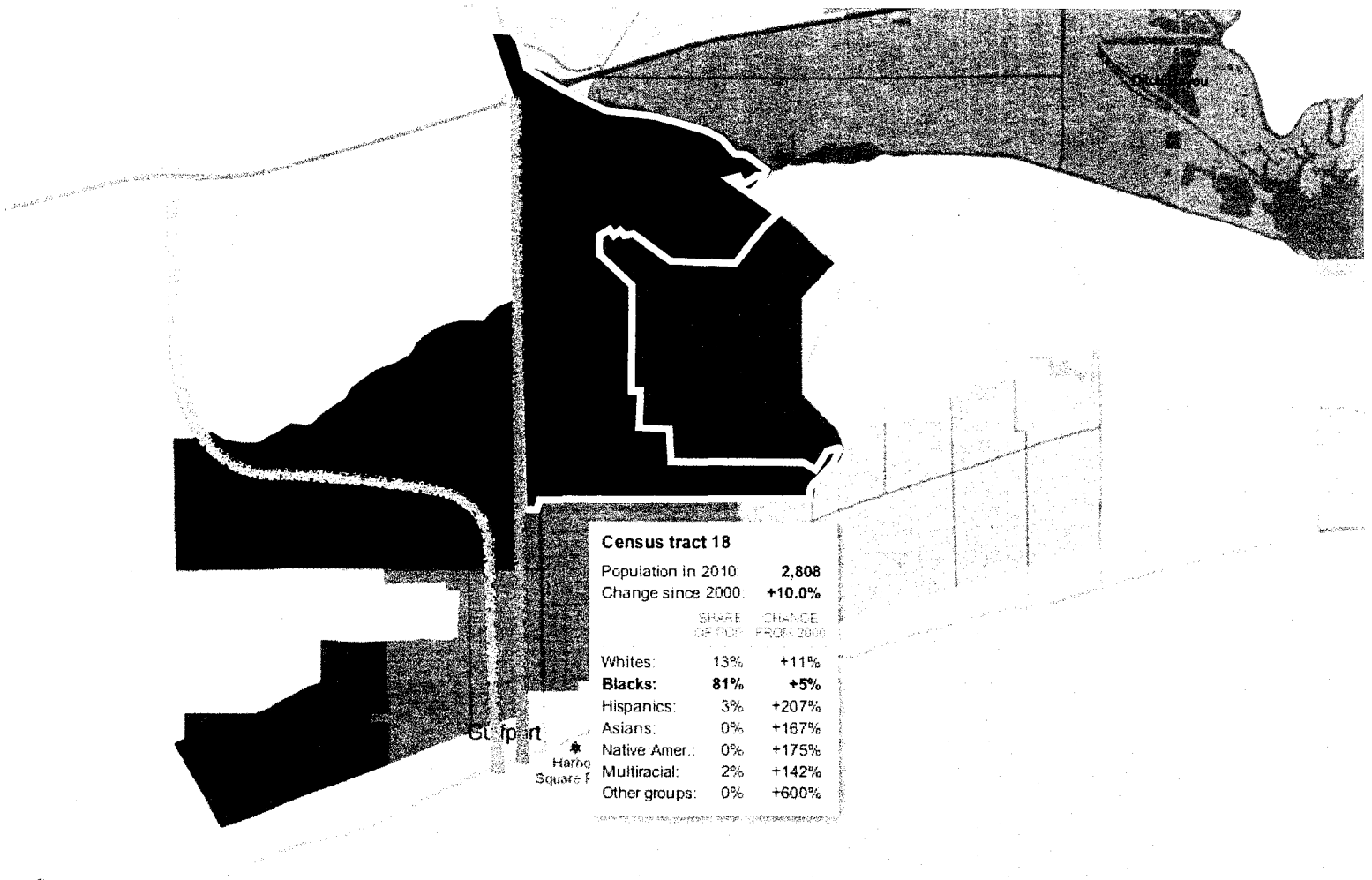

Census tract 24
Population in 2010: 4,047
Change since 2000 −1.2%
Whites: 12% −22%
Blacks: 83% −1%
Hispanics: 3% +312%
Asians: 0% 0%
Native Amer.: 0% +533%
Multiracial: 1% +39%
Other groups: 0% +100%
Connector Roa
Railroad
Gulfport
Map data ©2

Census tract 23

Population in 2010:	**2,153**
Change since 2000:	**–14.1%**

	SHARE	CHANGE
Whites:	36%	–27%
Blacks:	**57%**	**–7%**
Hispanics:	4%	+54%
Asians:	2%	–5%
Native Amer.:	0%	–67%
Multiracial:	1%	0%
Other groups:	0%	+500%


Railroad
Census tract 2
Population in 2010: 3,200
Change since 2000: –31.1%
SHARE OF POP
CHANGE FROM 2000
Whites: 44% –36%
Blacks: 47% –30%
Hispanics: 5% +12%
Asians: 1% –57%
Native Amer.: 0% –21%
Multiracial: 2% +4%
Other groups: 0% –67%


Census tract 18
Population in 2010: 2,808
Change since 2000: +10.0%
SHARE OF POP. CHANGE FROM 2000
Whites: 13% +11%
Blacks: 81% +5%
Hispanics: 3% +207%
Asians: 0% +167%
Native Amer.: 0% +175%
Multiracial: 2% +142%
Other groups: 0% +600%
ong Beach

Federal Register
Vol. 59, No. 32
Wednesday, February 16, 1994

Presidential Documents

Title 3—

The President

Executive Order 12898 of February 11, 1994

Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1–1. *Implementation.*

1–101. *Agency Responsibilities.* To the greatest extent practicable and permitted by law, and consistent with the principles set forth in the report on the National Performance Review, each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions, the District of Columbia, the Commonwealth of Puerto Rico, and the Commonwealth of the Mariana Islands.

1–102. *Creation of an Interagency Working Group on Environmental Justice.* (a) Within 3 months of the date of this order, the Administrator of the Environmental Protection Agency ("Administrator") or the Administrator's designee shall convene an interagency Federal Working Group on Environmental Justice ("Working Group"). The Working Group shall comprise the heads of the following executive agencies and offices, or their designees: (a) Department of Defense; (b) Department of Health and Human Services; (c) Department of Housing and Urban Development; (d) Department of Labor; (e) Department of Agriculture; (f) Department of Transportation; (g) Department of Justice; (h) Department of the Interior; (i) Department of Commerce; (j) Department of Energy; (k) Environmental Protection Agency; (l) Office of Management and Budget; (m) Office of Science and Technology Policy; (n) Office of the Deputy Assistant to the President for Environmental Policy; (o) Office of the Assistant to the President for Domestic Policy; (p) National Economic Council; (q) Council of Economic Advisers; and (r) such other Government officials as the President may designate. The Working Group shall report to the President through the Deputy Assistant to the President for Environmental Policy and the Assistant to the President for Domestic Policy.

(b) The Working Group shall: (1) provide guidance to Federal agencies on criteria for identifying disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;

(2) coordinate with, provide guidance to, and serve as a clearinghouse for, each Federal agency as it develops an environmental justice strategy as required by section 1–103 of this order, in order to ensure that the administration, interpretation and enforcement of programs, activities and policies are undertaken in a consistent manner;

(3) assist in coordinating research by, and stimulating cooperation among, the Environmental Protection Agency, the Department of Health and Human Services, the Department of Housing and Urban Development, and other agencies conducting research or other activities in accordance with section 3–3 of this order;

(4) assist in coordinating data collection, required by this order;

(5) examine existing data and studies on environmental justice;

Attachment C

(6) hold public meetings as required in section 5–502(d) of this order; and

(7) develop interagency model projects on environmental justice that evidence cooperation among Federal agencies.

1–103. *Development of Agency Strategies.* (a) Except as provided in section 6–605 of this order, each Federal agency shall develop an agency-wide environmental justice strategy, as set forth in subsections (b)–(e) of this section that identifies and addresses disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations. The environmental justice strategy shall list programs, policies, planning and public participation processes, enforcement, and/or rulemakings related to human health or the environment that should be revised to, at a minimum: (1) promote enforcement of all health and environmental statutes in areas with minority populations and low-income populations; (2) ensure greater public participation; (3) improve research and data collection relating to the health of and environment of minority populations and low-income populations; and (4) identify differential patterns of consumption of natural resources among minority populations and low-income populations. In addition, the environmental justice strategy shall include, where appropriate, a timetable for undertaking identified revisions and consideration of economic and social implications of the revisions.

(b) Within 4 months of the date of this order, each Federal agency shall identify an internal administrative process for developing its environmental justice strategy, and shall inform the Working Group of the process.

(c) Within 6 months of the date of this order, each Federal agency shall provide the Working Group with an outline of its proposed environmental justice strategy.

(d) Within 10 months of the date of this order, each Federal agency shall provide the Working Group with its proposed environmental justice strategy.

(e) Within 12 months of the date of this order, each Federal agency shall finalize its environmental justice strategy and provide a copy and written description of its strategy to the Working Group. During the 12 month period from the date of this order, each Federal agency, as part of its environmental justice strategy, shall identify several specific projects that can be promptly undertaken to address particular concerns identified during the development of the proposed environmental justice strategy, and a schedule for implementing those projects.

(f) Within 24 months of the date of this order, each Federal agency shall report to the Working Group on its progress in implementing its agency-wide environmental justice strategy.

(g) Federal agencies shall provide additional periodic reports to the Working Group as requested by the Working Group.

1–104. *Reports to the President.* Within 14 months of the date of this order, the Working Group shall submit to the President, through the Office of the Deputy Assistant to the President for Environmental Policy and the Office of the Assistant to the President for Domestic Policy, a report that describes the implementation of this order, and includes the final environmental justice strategies described in section 1–103(e) of this order.

Sec. 2–2. *Federal Agency Responsibilities for Federal Programs.* Each Federal agency shall conduct its programs, policies, and activities that substantially affect human health or the environment, in a manner that ensures that such programs, policies, and activities do not have the effect of excluding persons (including populations) from participation in, denying persons (including populations) the benefits of, or subjecting persons (including populations) to discrimination under, such programs, policies, and activities, because of their race, color, or national origin.

Sec. 3–3. *Research, Data Collection, and Analysis.*

3–301. *Human Health and Environmental Research and Analysis.* (a) Environmental human health research, whenever practicable and appropriate, shall include diverse segments of the population in epidemiological and clinical studies, including segments at high risk from environmental hazards, such as minority populations, low-income populations and workers who may be exposed to substantial environmental hazards.

(b) Environmental human health analyses, whenever practicable and appropriate, shall identify multiple and cumulative exposures.

(c) Federal agencies shall provide minority populations and low-income populations the opportunity to comment on the development and design of research strategies undertaken pursuant to this order.

3–302. *Human Health and Environmental Data Collection and Analysis.* To the extent permitted by existing law, including the Privacy Act, as amended (5 U.S.C. section 552a): (a) each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information assessing and comparing environmental and human health risks borne by populations identified by race, national origin, or income. To the extent practical and appropriate, Federal agencies shall use this information to determine whether their programs, policies, and activities have disproportionately high and adverse human health or environmental effects on minority populations and low-income populations;

(b) In connection with the development and implementation of agency strategies in section 1–103 of this order, each Federal agency, whenever practicable and appropriate, shall collect, maintain and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding facilities or sites expected to have a substantial environmental, human health, or economic effect on the surrounding populations, when such facilities or sites become the subject of a substantial Federal environmental administrative or judicial action. Such information shall be made available to the public, unless prohibited by law; and

(c) Each Federal agency, whenever practicable and appropriate, shall collect, maintain, and analyze information on the race, national origin, income level, and other readily accessible and appropriate information for areas surrounding Federal facilities that are: (1) subject to the reporting requirements under the Emergency Planning and Community Right-to-Know Act, 42 U.S.C. section 11001–11050 as mandated in Executive Order No. 12856; and (2) expected to have a substantial environmental, human health, or economic effect on surrounding populations. Such information shall be made available to the public, unless prohibited by law.

(d) In carrying out the responsibilities in this section, each Federal agency, whenever practicable and appropriate, shall share information and eliminate unnecessary duplication of efforts through the use of existing data systems and cooperative agreements among Federal agencies and with State, local, and tribal governments.

Sec. 4–4. *Subsistence Consumption of Fish and Wildlife.*

4–401. *Consumption Patterns.* In order to assist in identifying the need for ensuring protection of populations with differential patterns of subsistence consumption of fish and wildlife, Federal agencies, whenever practicable and appropriate, shall collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. Federal agencies shall communicate to the public the risks of those consumption patterns.

4–402. *Guidance.* Federal agencies, whenever practicable and appropriate, shall work in a coordinated manner to publish guidance reflecting the latest scientific information available concerning methods for evaluating the human health risks associated with the consumption of pollutant-bearing fish or

wildlife. Agencies shall consider such guidance in developing their policies and rules.

Sec. 5–5. *Public Participation and Access to Information.* (a) The public may submit recommendations to Federal agencies relating to the incorporation of environmental justice principles into Federal agency programs or policies. Each Federal agency shall convey such recommendations to the Working Group.

(b) Each Federal agency may, whenever practicable and appropriate, translate crucial public documents, notices, and hearings relating to human health or the environment for limited English speaking populations.

(c) Each Federal agency shall work to ensure that public documents, notices, and hearings relating to human health or the environment are concise, understandable, and readily accessible to the public.

(d) The Working Group shall hold public meetings, as appropriate, for the purpose of fact-finding, receiving public comments, and conducting inquiries concerning environmental justice. The Working Group shall prepare for public review a summary of the comments and recommendations discussed at the public meetings.

Sec. 6–6. *General Provisions.*

6–601. *Responsibility for Agency Implementation.* The head of each Federal agency shall be responsible for ensuring compliance with this order. Each Federal agency shall conduct internal reviews and take such other steps as may be necessary to monitor compliance with this order.

6–602. *Executive Order No. 12250.* This Executive order is intended to supplement but not supersede Executive Order No. 12250, which requires consistent and effective implementation of various laws prohibiting discriminatory practices in programs receiving Federal financial assistance. Nothing herein shall limit the effect or mandate of Executive Order No. 12250.

6–603. *Executive Order No. 12875.* This Executive order is not intended to limit the effect or mandate of Executive Order No. 12875.

6–604. *Scope.* For purposes of this order, Federal agency means any agency on the Working Group, and such other agencies as may be designated by the President, that conducts any Federal program or activity that substantially affects human health or the environment. Independent agencies are requested to comply with the provisions of this order.

6–605. *Petitions for Exemptions.* The head of a Federal agency may petition the President for an exemption from the requirements of this order on the grounds that all or some of the petitioning agency's programs or activities should not be subject to the requirements of this order.

6–606. *Native American Programs.* Each Federal agency responsibility set forth under this order shall apply equally to Native American programs. In addition, the Department of the Interior, in coordination with the Working Group, and, after consultation with tribal leaders, shall coordinate steps to be taken pursuant to this order that address Federally-recognized Indian Tribes.

6–607. *Costs.* Unless otherwise provided by law, Federal agencies shall assume the financial costs of complying with this order.

6–608. *General.* Federal agencies shall implement this order consistent with, and to the extent permitted by, existing law.

6–609. *Judicial Review.* This order is intended only to improve the internal management of the executive branch and is not intended to, nor does it create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by a party against the United States, its agencies, its officers, or any person. This order shall not be construed to create any right to judicial review involving the compliance or noncompliance

of the United States, its agencies, its officers, or any other person with this order.



THE WHITE HOUSE,
February 11, 1994.

[FR Citation 59 FR 7629]

MEMORANDUM OF UNDERSTANDING ON

ENVIRONMENTAL JUSTICE AND EXECUTIVE ORDER 12898

WHEREAS, on February 11, 1994, the President signed Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" ("Executive Order 12898" or "Order"), and issued an accompanying Presidential Memorandum (references to this Order herein also generally include this Memorandum), and

WHEREAS, Executive Order 12898 applies to the following agencies: the Department of Agriculture, Department of Commerce, Department of Defense, Department of Energy, Department of Health and Human Services, Department of Housing and Urban Development, Department of the Interior, Department of Justice, Department of Labor, Department of Transportation, and the Environmental Protection Agency. The Order applies to the following offices in the Executive Office of the President: Office of Management and Budget, Office of Science and Technology Policy, Office of the Deputy Assistant to the President for Environmental Policy, Office of the Assistant to the President for Domestic Policy, National Economic Council, and Council of Economic Advisers. The Order also applies to other agencies and offices as the President may designate, Executive Order 12898, sec. 1-102, 6-604 (Feb. 11, 1994). The agencies and offices that are listed in section 1-102 or designated by the President under section 6-604 of the Order are referred to herein as "covered agencies" and "covered offices," respectively, and

WHEREAS, Executive Order 12898 requires each covered agency to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations," *id.*, sec. 1-101, and

WHEREAS, each responsibility of a covered agency under Executive Order 12898 "shall apply equally to Native American programs," *id.*, sec. 6-606, and

WHEREAS, Executive Order 12898 establishes an Interagency Working Group on Environmental Justice ("Interagency Working Group") consisting of the heads of the agencies and offices listed above and any other officials designated by the President, or their designees, *id.*, sec. 1-102(a), and

WHEREAS, Executive Order 12898 directs the Interagency Working Group to assist the covered agencies by providing guidance and serving as a clearinghouse, *id.*, sec. 1-102(b), and

WHEREAS, Executive Order 12898, as amended, required that the then-covered agencies submit to the Interagency Working Group by March 24, 1995, an agencywide environmental justice strategy to carry out the Order, *id.*, sec. 1-103(e), as amended by Executive Order 12948 (Jan. 30, 1995), and

WHEREAS, Executive Order 12898 further required, within two (2) years of issuance, that the then-covered agencies provide to the Interagency Working Group a progress report on implementation of the agency's environmental justice strategy, Executive Order 12898, sec. 1-103(f), and

WHEREAS, Executive Order 12898 requires that covered agencies conduct internal reviews and take such other steps as may be necessary to monitor compliance with the Executive Order, *id.*, sec. 6-601, and provide additional periodic reports to the Interagency Working Group as requested by the Group, *id.*, sec. 1-103(g), and

Attachment D

WHEREAS, Executive Order 12898 provides that a member of the public may submit comments and recommendations to a covered agency relating to the incorporation of environmental justice principles into the agency's programs or policies and provides that the agency must convey such recommendations to the Interagency Working Group, *id.*, sec. 5-5(a), and

WHEREAS, the covered agencies and the Interagency Working Group remain committed to full ongoing compliance with Executive Order 12898, and

WHEREAS, Executive Order 12898 does not preclude other agencies from agreeing to carry out the Order and to participate in the activities of the Interagency Working Group as appropriate, and as consistent with their respective statutory authorities and the Order;

NOW THEREFORE, the undersigned agencies (referred to herein as "Federal agencies") hereby agree:

I. Purposes

A. To declare the continued importance of identifying and addressing environmental justice considerations in agency programs, policies, and activities as provided in Executive Order 12898, including as to agencies not already covered by the Order.

B. To renew the process under Executive Order 12898 for agencies to provide environmental justice strategies and implementation progress reports.

C. To establish structures and procedures to ensure that the Interagency Working Group operates effectively and efficiently.

D. To identify particular areas of focus to be included in agency environmental justice efforts.

II. Authorities

This Memorandum of Understanding on Environmental Justice and Executive Order 12898 ("Memorandum of Understanding" or "MOU") is in furtherance of the Order, including the authorities cited therein. Federal agencies shall implement this Memorandum of Understanding in compliance with, and to the extent permitted by, applicable law.

III. Actions and Responsibilities

A. Adoption of Charter. This Memorandum of Understanding adopts the Charter for Interagency Working Group on Environmental Justice ("Charter") set forth in Attachment A. Each Federal agency agrees to the framework, procedures, and responsibilities identified in the Charter and agrees to provide the Interagency Working Group with the agency's designated Senior Leadership Representative and Senior Staff Representative by September 30, 2011.

B. Participation of Other Federal Agencies. While Executive Order 12898 applies to covered agencies, the Order does not preclude other agencies from agreeing to undertake the commitments in the Order. Likewise, while the Executive Order identifies the composition of the Interagency Working Group, other agencies may, to the extent consistent with the Order, participate in activities of the Interagency Working Group as appropriate. An agency that is either not a covered agency or not represented on the Interagency Working Group, or both, may become a "Participating Agency" by signing this Memorandum of Understanding. To the extent it is not already a covered agency, a Participating Agency agrees to carry out this Memorandum of Understanding, as well as Executive Order 12898, and to the extent it is not already

represented on the Interagency Working Group, a Participating Agency agrees to participate in activities of the Interagency Working Group, as appropriate. The term "Federal agency" herein refers to covered agencies that sign this MOU and to Participating Agencies that sign this MOU.

C. Federal Agency Environmental Justice Strategies; Public Input; Annual Reporting.

1. **Environmental Justice Strategy.** By September 30, 2011, after reviewing and updating an existing environmental justice strategy, where applicable, and as the agency deems appropriate, each Federal agency will post its current "Environmental Justice Strategy" on its public webpage and provide the Interagency Working Group with a link to the webpage. If the agency posts and provides a draft Environmental Justice Strategy, then it will post and provide its final Environmental Justice Strategy by February 11, 2012. Thereafter, each Federal agency will periodically review and update its Environmental Justice Strategy as it deems appropriate and will keep its current Environmental Justice Strategy posted with a link provided to the Interagency Working Group.

2. **Public Input.** Consistent with Executive Order 12898, section 5-5, each Federal agency will ensure that meaningful opportunities exist for the public to submit comments and recommendations relating to the agency's Environmental Justice Strategy, Annual Implementation Progress Reports, and ongoing efforts to incorporate environmental justice principles into its programs, policies and activities.

3. **Annual Implementation Progress Report.** By the February 11 anniversary of Executive Order 12898 each year, beginning in 2012, each Federal agency will provide a concise report on progress during the previous fiscal year in carrying out the agency's Environmental Justice Strategy and Executive Order 12898. This "Annual Implementation Progress Report" will include performance measures as deemed appropriate by the agency. The report will describe participation in interagency collaboration. It will include responses to recommendations submitted by members of the public to the agency concerning the agency's Environmental Justice Strategy and its implementation of the Executive Order. It will include any updates or revisions to the agency's Environmental Justice Strategy, including those resulting from public comment. The agency will post its Annual Implementation Progress Report on its public webpage and provide the Interagency Working Group with a link to the webpage.

D. Areas of Focus. In its Environmental Justice Strategy, Annual Implementation Progress Reports and other efforts, each Federal agency will identify and address, as appropriate, any disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations, including, but not limited to, as appropriate for its mission, in the following areas: (1) implementation of the National Environmental Policy Act; (2) implementation of Title VI of the Civil Rights Act of 1964, as amended; (3) impacts from climate change; and (4) impacts from commercial transportation and supporting infrastructure ("goods movement"). These efforts will include interagency collaboration. At least every three (3) years, the Interagency Working Group will, based in part on public recommendations identified in Annual Implementation Progress Reports, identify important areas for Federal agencies to consider and address, as appropriate, in environmental justice strategies, annual implementation progress reports and other efforts.

IV. Miscellaneous

A. Parties, Effective Date, Amendment. This MOU becomes effective for a Federal agency when it signs the MOU. An agency may sign the MOU at any time. The MOU may be amended by written agreement of the then-current signatory Federal agencies.

B. Applicable Law. Nothing in this MOU shall be construed to impair or otherwise affect authority granted by law to, or responsibility imposed by law upon, an agency, or the head thereof, or the status of that agency within the Federal Government. This MOU shall be implemented consistent with applicable law and subject to the availability of appropriations.

C. Fiscal. This MOU is not a fiscal or financial obligation. It does not obligate a Federal agency to expend, exchange or reimburse funds, services or supplies, or to transfer or receive anything of financial or other value.

D. Internal Management. This MOU and activities under it relate only to internal procedures and management of the Federal agencies and the Interagency Working Group. They do not create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its agencies or other entities, its officers, employees or agents, or any other person.

V. Signatures

A. Covered Agencies.

\s

Eric H. Holder, Jr.
Attorney General of the United States

Date: _____

\s

Ken Salazar
Secretary of the Interior

Date: _____

\s

Thomas J. Vilsack
Secretary of Agriculture

Date: _____

\s

Hilda L. Solis
Secretary of Labor

Date: _____

\s

Kathleen Sebelius
Secretary of Health and Human Services

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Acting Deputy Under Secretary
(Installations and Environment)
Department of Defense

Date: _____

B. Participating Agencies and Offices.

\S

Arne Duncan
Secretary of Education

Date: _____

\S

Eric K. Shinseki
Secretary of Veterans Affairs

Date: _____

\S

Janet Napolitano
Secretary of Homeland Security

Date: _____

\S

Nancy Sutley
Chair
Council on Environmental Quality

Date: _____

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Martha Johnson
Administrator
General Services Administration

Date: _____

\S

Karen G. Mills
Administrator
Small Business Administration

Date: _____

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

U.S. Army Corps of Engineers
Mobile District, Corps of Engineer
South Mississippi Branch Regulatory Division
P.O. Box 2288
Mobile, AL 36628-0001

Attention: District Engineer, C/o Mr. Damon M. Young

Subject: **Cumulative Assessment of Major Federal Projects in the Turkey Creek Watershed, City of Gulfport and Long Beach, Harrison County, MS.**

Dear Mr. Young:

The U.S. Environmental Protection Agency (EPA), Region 4 continues to be interested in discussing an approach to the National Environmental Policy Act (NEPA) analysis of the Turkey Creek Watershed in the Gulfport area. As you know, the Turkey Creek watershed is both an EPA and Mississippi Department of Environmental Quality (MDEQ) priority watershed that includes wetlands that are identified as sensitive aquatic resources. These wetlands are one of the first and last watering sites for neo-tropical migrant birds traveling between North America, and Central and South America. Turkey Creek is a 303(d) listed steam and the watershed includes portions of Gulfport and Long Beach and an expanding regional transportation center including the Port of Gulfport, the Gulfport-Biloxi Regional Airport, Interstate 10 and U.S. Highway 49.

At the lower end of the watershed lies the historic Turkey Creek Community, an environmental justice community settled in 1866 by emancipated slaves. Today this community is listed on the National Registry of Historic Places. Much of the neighborhood borders Turkey Creek (portions of which are used for fishing, swimming, and canoeing) and is within or adjacent to the 100-year flood zone. There are also other environmental justice communities located within the Watershed, such as North Gulfport, that have expressed concerns (e.g., exacerbation of flooding and asthma) related to proposed development projects in the area. We support working closely with communities during the evaluation process to holistically examine impacts to both natural and human resources.

Under Section 404 of the Clean Water Act (CWA), Section 10 of the River and Harbors Act, and Section 103 of the Marine Protection Research and Sanctuary's Act, the U.S. Army Corps of Engineers, Mobile District (Corps) is the lead federal agency responsible for evaluating the environmental impacts and other associated federal requirements associated with several projects' planned within this area. These projects are in various stages of planning in the Gulfport area and include, but are not limited to, the Port of Gulfport Harbor Expansion Project, the Domain at Prime Centre Project, and the previously identified Mississippi Department of Transportation Port Connector Road Project. Due to the scope and magnitude of the identified projects within the watershed and surrounding vicinity, the EPA recommends the use of both

Attachment E

regulatory and non-regulatory approaches in an effort to better evaluate the cumulative impacts of these projects and achieve the most effective outcomes. These approaches would include the National Environmental Policy Act, previously identified Corps requirements, and the Partnership for Sustainable Communities among others. EPA understands that any cumulative impacts assessment needs to be conducted in a manner consistent with regulations.

By working together with federal, state, and local partners, we can promote watershed and air quality protection, community involvement and environmental sustainability as an integral part of the decision-making process for these projects. Such collaboration will also help ensure that these projects, if approved, are economically and environmentally sustainable assets to the area.

EPA looks forward to further discussions with the COE and other partners on how best to proceed with this effort. If you have any questions, please feel free to contact me or Ntale Kajumba of my staff at 404-562-9620.

Sincerely,

Heinz Mueller, Chief
NEPA Program Office
Office of Environmental Accountability

cc: Mississippi State Port Authority at Gulfport
Mississippi Department of Environmental Quality
Mississippi Department of Transportation
Mississippi Department of Marine Resources
Federal Highway Administration Mississippi Division
U.S. Fish and Wildlife Service
Ward Investments
Turkey Creek Community Initiatives
North Gulfport Community Land Conservancy, Inc.
Center for Environmental and Economic Justice

The Sun Herald

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EPA wants Port of Gulfport projects studied 'holistically'

Published: April 9, 2013 Updated 1 hour ago

By ANITA LEE — calee@sunherald.com

GULFPORT -- The Environmental Protection Agency wants to make sure cumulative effects of proposed Port of Gulfport-related projects are studied, an EPA letter to the U.S. Army Corps of Engineers says.

The Corps of Engineers is the lead agency for environmental assessments of port expansion; plans by Ward Investments to develop property in the Turkey Creek watershed between U.S. 49 and Canal Road; and a port connector road the state plans to build near Canal Road south of Interstate 10 to the port.

Gov. Phil Bryant is expected at the port at 11 a.m. today to view the completed work on the port's 84-acre West Pier expansion.

The corps study concerns expansion still in the planning stages.

The EPA letter, to Damon Young of the corps Mobile District, points out Turkey Creek is a "priority watershed" for the EPA and state Department of Environmental Quality. It also mentions the historic importance of the Turkey Creek community, settled in 1866 by emancipated slaves.

Young said separate permit applications for port expansion, the connector road and the Ward project will each deal with combined effects of the three projects on surrounding communities. Water and air quality, along with economic impacts, are some of the areas the corps will study.

"It's a very, very big deal, especially with the three projects being in this watershed and the proposed impacts on the watershed," Young said.

Turkey Creek area residents have been following port expansion and asking questions about potential air pollution from increased truck and cargo traffic. They also are concerned about traffic congestion, and division of their communities by the connector road and an improved rail line.

Flooding exacerbated by development has been and will continue to be a major concern, community advocates say.

Residents and community advocates also worry the corps has studied projects independently rather than as a whole.

The EPA letter, written by Heinz Mueller of Region 4 in Atlanta, takes into account those concerns: "We support working closely with communities during the evaluation process to holistically examine impacts to both natural and human resources.

" ... By working together with federal, state and local partners, we can promote watershed and air quality protection, community involvement and environmental sustainability as an integral part of the decision-making process for these projects."

Attachment F

Though study of port expansion has started, environmental assessments have yet to begin on the connector road and Ward project. The state's previous plan -- to take Ward property for a conservation easement that would offset wetlands loss from the connector road -- is no longer in play.

Ward is working on a new proposal for a new conservation easement that would allow the firm to keep about 500 acres for port-related retail and office development. Ward attorney John Brunini said project developers are reaching out to community leaders for input on plans.

Young said the state Department of Transportation will have to file a new permit request for connector-road construction, which is at a standstill.

Community groups are encouraged by the EPA letter.

"For the first time, EPA has linked together concern about the port, the port-connector road and the Ward development," said Reilly Morse, attorney with the nonprofit Mississippi Center for Justice.

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Mississippi State Port Authority
P.O. Box 40
Gulfport, MS 39502

Tom King, Commissioner
Mississippi Department of Transportation
401 North West Street
Jackson, MS 39201

Brent Christensen
Mississippi Development Authority
P.O. Box 849
Jackson, MS 39205

Dear Gentlemen:

The Steps Coalition and Port Campaign Coalition have learned that the Mississippi State Port Authority has submitted a new permit application for expansion of the port to the US Army Corps of Engineers (the "Corps"). Our information is that this application will trigger the requirement of an environmental impact statement (EIS), and that the EIS process will start over from square one. We understand that the scope of cumulative effects addressed in this EIS will include all projects associated with the port, including an inland port facility, the connector road and the proposed development by the Ward family for the wetlands property abutting Turkey Creek, and comprehensive alternatives and environmental justice analyses will be required.

If our understanding is correct, then the Corps has taken a significant step towards fulfilling a long-standing demand of the Steps Coalition and the Port Campaign Coalition: to affirmatively and holistically address the environmental justice issues associated with these connected, large scale developments.The Steps Coalition and the Port Campaign Coalition have the deepest, strongest, and longest-lasting community engagement effort in place in the environmental justice communities affected by these proposed projects. We look forward to working with the Corps on this undertaking.

Over the past twelve months, one issue after another raised by the Steps Coalition and the Port Campaign Coalition about the port restoration, the port connector road and the Ward development has been shown to be well-founded.

LAWYERS' COMMITTEE FOR CIVIL RIGHTS UNDER LAW
Deep South affiliate of the Lawyers' Committee for Civil Rights Under Law

Despite this track record, the Port, MDOT and other government players have refused to work together with us on an inclusive collaboration to resolve the outstanding issues of jobs, job training and environmental justice. We now have a new opportunity to move in a more positive direction and again renew our call for the parties to these projects to convene a collaborative negotiation with the affected communities to allow these projects to move forward in ways that fulfill the promise of job creation, environmental protection and community health.

Very Truly Yours,

Reilly Morse
Mississippi Center for Justice

Joe Rich, Diane Glauber, David Zisser

Lawyers' Committee for Civil Rights
Under Law

Gail Suchman, Esq.
Stroock & Stroock & Lavan

cc. Damon Young, U S Army Corps of Engineers, Mobile District
Heinz Muller, Chief , NEPA program office, EPA Region IV

Appendix I

Essential Fish Habitat Assessment

Document No. 130128
Atkins Job No. 100018536

DRAFT
ESSENTIAL FISH HABITAT ASSESSMENT
FOR THE PORT OF GULFPORT EXPANSION PROJECT
HARRISON COUNTY, MISSISSIPPI

Prepared for:

Mississippi State Port Authority
2510 14th Street
Suite 1450
Gulfport, Mississippi 39501

Prepared by:

Atkins
7406 Fullerton Street
Suite 350
Jacksonville, Florida 32256

October 2015

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Acronyms and Abbreviations

°F	degrees Fahrenheit
BA	Biological Assessment
BMC	Biloxi Marsh Complex – Northeastern Outlying Island
BU	Beneficial Use
BUG	Beneficial Use Group
CFR	*Code of Federal Regulations*
CIAP	Coastal Impact Assistance Program
CWA	Clean Water Act
cy	cubic yards
cSEL	cumulative sound exposure level
dB	Decibels
dBA	A-weighted decibels
DA	Department of the Army
DMMP	Dredged Material Management Plan
DO	dissolved oxygen
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
FHWG	Fisheries Hydroacoustic Working Group
FMP	Fisheries Management Plan
FNC	Federal Navigation Channel
GIWW	Gulf Intracoastal Waterway
GMFMC	Gulf of Mexico Fisheries Management Council
Gulf	Gulf of Mexico
HAPC	Habitat Areas of Particular Concern
I-10	Interstate Highway I-10
mcy	million cubic yards
MDMR	Mississippi Department of Marine Resources
MDWFP	Mississippi Department of Wildlife, Fisheries, and Parks
mg/L	milligrams per liter
MLLW	mean lower low water
MMNS	Mississippi Museum of Natural Sciences
MPRSA	Marine Protection, Research, and Sanctuaries Act
MsCIP	Mississippi Coastal Improvements Program
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
msl	Mean sea level
MSPA	Mississippi State Port Authority
NEPA	National Environmental Policy Act

NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NWI	National Wetlands Inventory
ODMDS	Ocean Dredged Material Disposal Site
LPEAK	peak level sound measurement
PCB	polychlorinated biphenyls
PGEP	Port of Gulfport Expansion Project
Port	Port of Gulfport
ppt	parts per thousand
RMG	rail-mounted gantry
RMS	root mean square
su	standard units
TEU	twenty-foot equivalent unit
TNC	The Nature Conservancy
TSS	total suspended solids
U.S.	United States
US	U.S. Highway
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
WRDA	Water Resources Development Act

1.0 INTRODUCTION

The Mississippi State Port Authority (MSPA) applied to U.S. Army Corps of Engineers (USACE), Mobile District, for a Department of the Army (DA) permit, under Section 10 of the Rivers and Harbors Act of 1899 (33 United States Code [USC] 403), Section 404 of the Clean Water Act (CWA) (33 USC 1344), and Section 103 of the Marine Protection, Research, and Sanctuaries Act (MPRSA) of 1972, as amended (33 USC 1413) for activities related to the proposed expansion of the Port of Gulfport (Port). The proposed Port of Gulfport Expansion Project (PGEP or proposed Project) is located south of the City of Gulfport's urban center in Harrison County, Mississippi, within the city limits (Figure 1) and is approximately 7 miles south of Interstate 10 (I-10), 80 miles west of Mobile, Alabama, and 80 miles east of New Orleans, Louisiana. The Port encompasses approximately 369 acres and is located on the north shore of the Mississippi Sound within 5 miles of the Gulf Intracoastal Waterway (GIWW) and 10 miles from the Gulf of Mexico (Gulf) and the Gulf Island National Seashore.

The National Marine Fisheries Service (NMFS) requested (via letter dated May 11, 2010) an expanded Essential Fish Habitat (EFH) consultation pursuant to 50 *Code of Federal Regulations* (CFR) Section 600.920(i) based on the size of the proposed Project and potential impacts to EFH (Appendix A). This report presents an evaluation of potential EFH and fisheries within the Project area. For evaluating EFH, the Project area surrounding the Port is defined as the footprint of the Project features with a 5,000- foot buffer (Figure 2). The purpose of the investigation was to identify federally managed species protected under the 1996 Amendment to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) that might occur in the vicinity of the proposed Project. This EFH Assessment is included as part of the Environmental Impact Statement (EIS) for the proposed PGEP.

A benthic habitat assessment was conducted in response to agency concern for potential Project-related impacts to Gulf sturgeon (*Acipenser oxyrinchus desotoi*) in April 2012 (Appendix G of the EIS). The purpose of the study was to characterize the benthic habitat and community substrate, seagrasses, macrobenthic organisms, and ambient water conditions within the proposed Project footprint, Project area, and larger study area (refer to Figure 3.0-1 in the EIS). In addition, a Gulf Sturgeon Monitoring Study was conducted from fall 2012 to fall 2014 (Peterson et al., 2015) (see Appendix O of the EIS). The purpose of this study was to monitor the area surrounding the Port and to determine the use of near shore areas within the proposed Project footprint by the Gulf sturgeon. Life history descriptions and potential impacts to the Gulf Sturgeon are discussed in the Biological Assessment (BA) prepared for the EIS (Appendix J of the EIS). Data from these reports were used in this EFH Assessment to describe potential adverse impacts from the PGEP.

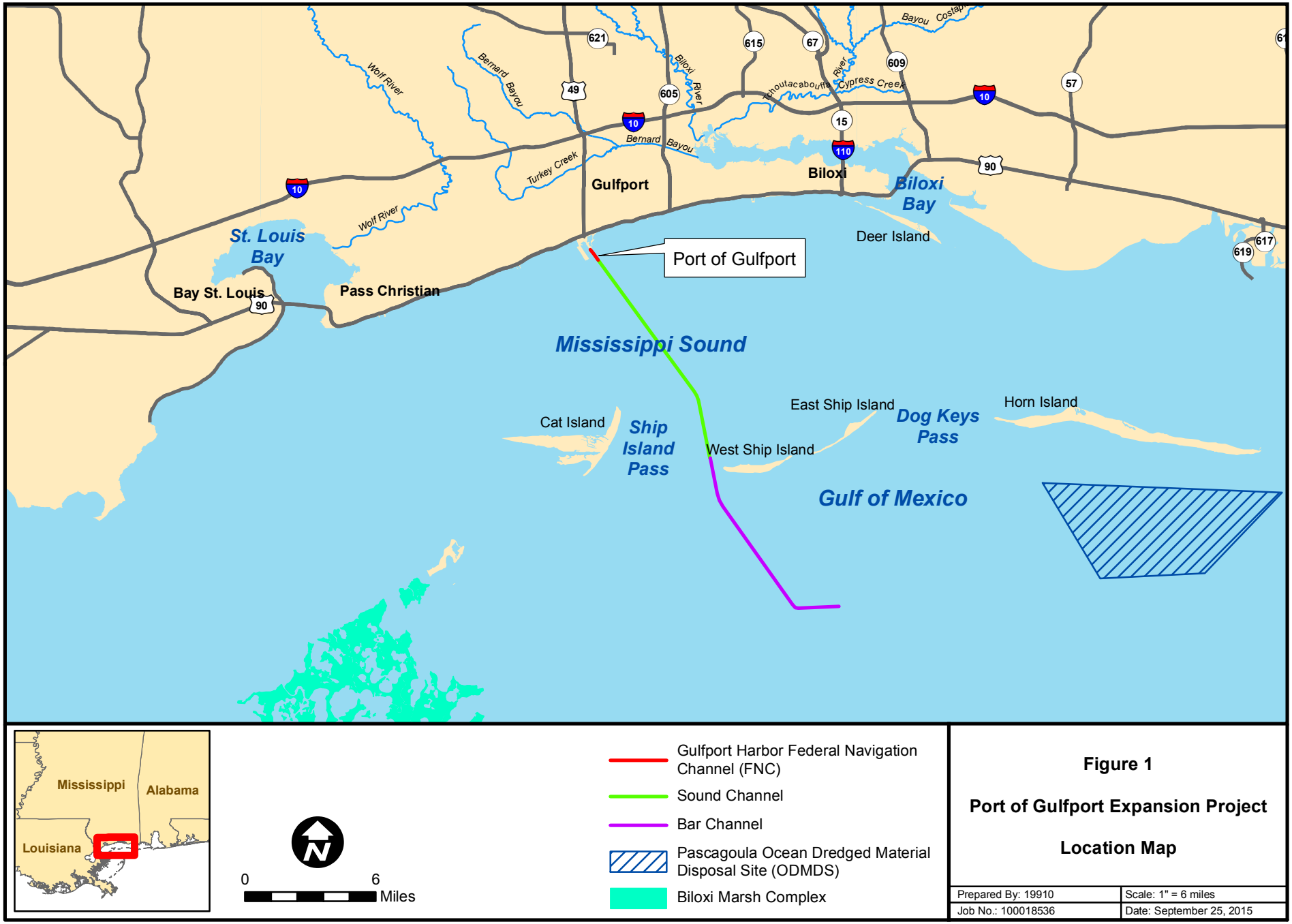
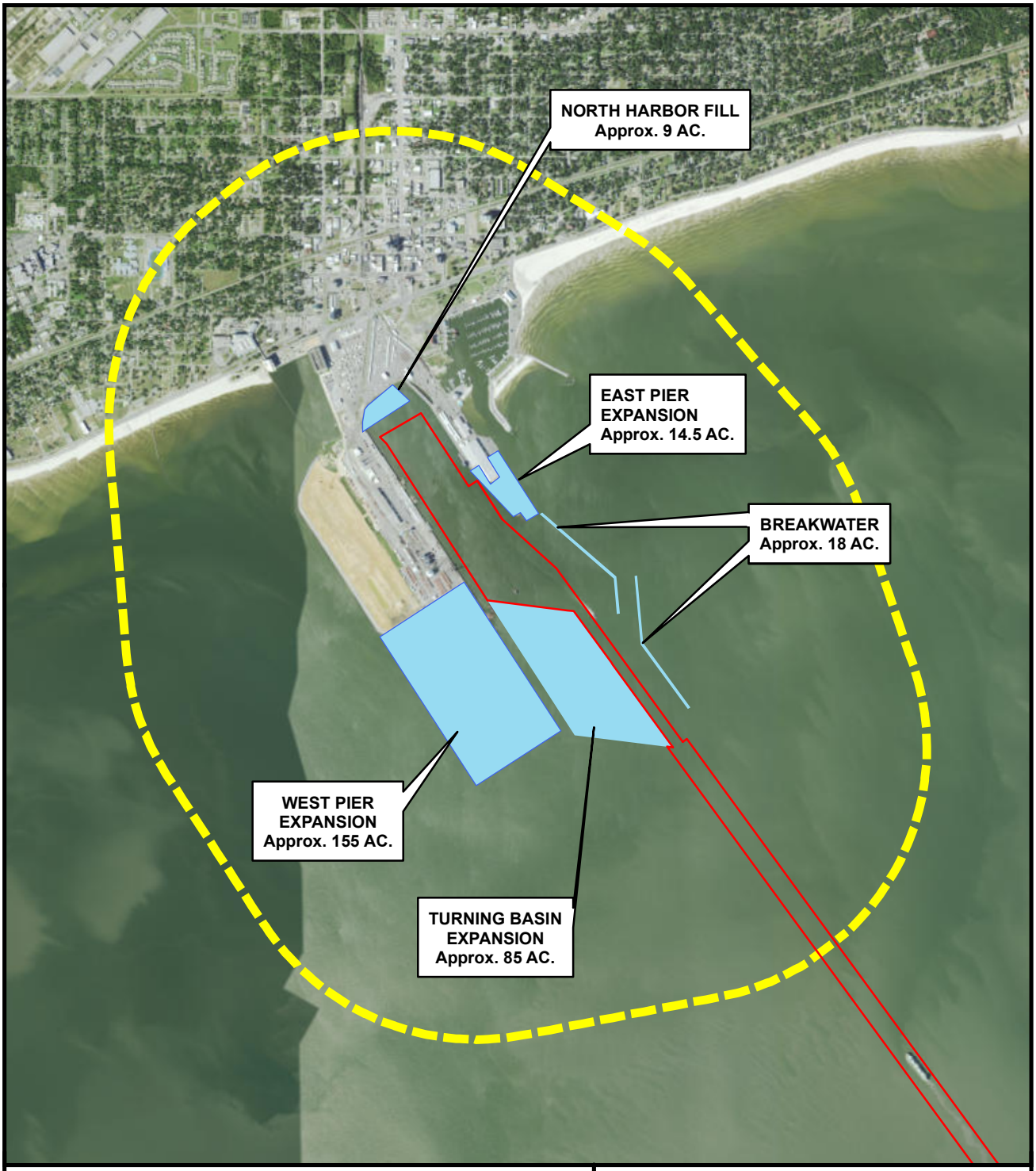


Figure 1

Port of Gulfport Expansion Project

Location Map

Prepared By: 19910	Scale: 1" = 6 miles
Job No.: 100018536	Date: September 25, 2015





Project Area

Proposed Project Features

Gulfport HarborFederal Navigation Channel (FNC)

0 3,000 Feet

Figure 2

Port of Gulfport Expansion Project

Project Area

Prepared By: 13188	Scale: 1" = 3000'
Job No.: 100018536	Date: Sept. 21, 2015

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1.1 ROLE OF NATIONAL MARINE FISHERIES SERVICE IN ESSENTIAL FISH HABITAT CONSULTATION

The MSFCMA defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The definition for EFH may include habitat for an individual species or a group of species, whichever is appropriate within each Fisheries Management Plan (FMP). EFH is separated into estuarine and marine components. The estuarine component is defined as "all estuarine waters and substrates (mud, sand, shell, rock, and associated biological communities); subtidal vegetation (seagrasses and algae); and adjacent intertidal vegetation (marshes and mangroves)." The marine component is defined as "all marine waters and substrates (mud, sand, shell, rock, and associated biological communities) from the shoreline to the seaward limit of the Exclusive Economic Zone" (Gulf of Mexico Fisheries Management Council [GMFMC], 2004). Adverse effect to EFH is defined as, "any impact, which reduces quality and/or quantity of EFH…" and may include direct, indirect, site specific or habitat impacts, including individual, cumulative, or synergistic consequences of actions.

Congress enacted amendments to the MSFCMA (PL 94-265) in 1996 that established procedures for identifying EFH and required interagency coordination to further the conservation of federally managed fisheries. Rules published by NMFS (50 CFR Sections 600.805–600.930) specify that any Federal agency that authorizes, funds, or undertakes or proposes to authorize, fund, or undertake, an activity that could adversely affect EFH is subject to the consultation provisions of the MSFCMA and identifies consultation requirements. The NMFS provided initial comments to USACE in letters dated May 11 and June 3, 2014. This EFH Assessment addresses those comments, and the EIS serves to further consultation with the NMFS.

1.2 PROJECT DESCRIPTION

The MSPA applied to the USACE, Mobile District, on March 9, 2010, for a DA permit, under Section 404 of the CWA, Section 103 of the MPRSA, and Section 10 of the Rivers and Harbors Act for activities subject to USACE jurisdiction that include filling estuarine mud and sand bottom habitat in Mississippi Sound, dredging in navigable waters to expand the Gulfport Turning Basin (located outside the federally authorized Project), and placement of dredged material to fill "waters of the United States (U.S.)." Then in April 2013, the MSPA requested that the proposed Project be modified to include widening and deepening of the existing Gulfport Harbor Federal Navigation Channel (FNC), and submitted a revised permit application to include modifications to the FNC. The Project has changed since 2013, and as of February 2015, MSPA does not intend to expand or maintain an expanded FNC as part of the proposed expansion of the Port without first receiving funding and prior Federal approval through the Water Resources Development Act (WRDA) 204(f) process. As such, the current proposed action being evaluated for a DA permit is expansion of the Port via modifications to the West Pier, East Pier, North Harbor, and Turning Basin, and includes construction of a breakwater on the eastern side of the FNC. Based on the DA permit application submitted by MSPA, USACE determined that the permitting action for the proposed dredge and fill activities constitutes a major Federal action with potentially significant

effects and/or substantial public interest. In accordance with the National Environmental Policy Act (NEPA), this EFH Assessment is part of the EIS and has been prepared to analyze and disclose the potential impacts of the proposed Project on EFH.

1.3 PROJECT AREA AND EXISTING PORT FACILITY

The Port encompasses approximately 369 acres and is located on north shore of the Mississippi Sound within 5 miles of the GIWW and 10 miles from the Gulf and Gulf Island National Seashore (Figure 1). The Port is constructed on fill over former Mississippi Sound bottoms and includes the East Pier, North Harbor, West Pier, and Commercial Small Craft Harbor. Access to the Port is via the FNC and a Commercial Small Craft Channel (8 feet deep). Located to the east of the Port are the Gulfport Small Craft Harbor, Gulfport Yacht Club, Harbor Square Park, and U.S. Coast Guard (USCG) Station Gulfport. Public beaches are located to the east and west of, and adjacent to, the Port. The northern boundary of the Port is U.S. Highway (US) 90.

The FNC is 300 feet wide in the inner channel (Sound Channel) and maintained to a depth of 36 feet within Mississippi Sound. The outer channel (Bar Channel) from Ship Island south to the safety fairway is 400 feet wide with a depth of 38 feet. The Port's North Harbor (Inner Harbor) is maintained to a depth of 32 feet, while the South Harbor (Outer Harbor) and Gulfport Turning Basin, which are approximately 1,320 feet wide, are maintained to a depth of 36 feet (USACE, 2009). The depths provided do not include 2 feet of allowable over depth and 2 feet of advance maintenance.

1.4 ALTERNATIVES

The proposed PGEP involves the dredging and filling of approximately 282 acres of estuarine mud and sand bottom habitat in Mississippi Sound for the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, expanded turning basin, and construction of an approximately 4,000-linear foot breakwater, in addition to the placement of new work and maintenance dredged material, refer to Table 1. Of the 282 acres potentially impacted by the proposed Project, approximately 85.5 acres will become deeper open water habitat. The proposed expanded Port facility would be elevated to up to +25 feet mean sea level (msl) to provide protection against future storm surge events.

During the preparation of the proposed EIS, several reasonable and practicable alternatives for the expansion of the Port facility were considered. The Proposed Project Alternative was selected as the smallest footprint that would reduce the ecological impact of proposed Project activities, while allowing the Port to achieve an increase in its economic throughput. The following sections describe the ecological and economic outcomes expected to occur should no construction requiring a USACE permit be performed (No-Action Alternative) or the USACE, Mobile District, approves the requested permit for the proposed Project (Proposed Project Alternative).

Table 1
Proposed Project Alternative, Direct Impact Estimates

Feature	Estimated Acreage Impact (acres)	Estimated Dredged Material Volume (million cubic yards)
West Pier Expansion	155	2.40
East Pier Expansion	15	0.56*
North Harbor Expansion	9	0.84
Breakwater	18	0
Turning Basin Expansion	85	3.70
Totals	282	7.5*

*560,000 cubic yards (cy) of dredged material is designated for upland disposal.

1.4.1 No-Action Alternative

The No-Action Alternative provides a means to evaluate the environmental impacts that would occur if no construction requiring a USACE permit is performed; work that does not require a USACE permit may be implemented. This scenario may transpire by (1) the applicant electing to modify his proposal to eliminate work under the jurisdiction of the USACE, or (2) by the denial of the USACE permit for the proposed expansion of the Port facilities. Since the PGEP requires dredging activities in navigable waters subject to Section 10 of the Rivers and Harbors Act and fill activities subject to Section 404 of the CWA and Section 103 of the MPRSA, construction activities involving dredge and fill would not proceed without a permit from the USACE. In the event of permit denial, the potential impacts described for the proposed action would not occur.

While the PGEP would not occur under the No-Action Alternative, it is assumed that previously permitted actions at the Port and in the vicinity of the Port (e.g., Restoration Project) would continue and are assumed as complete during the environmental consequences evaluation of the EIS. The No-Action Alternative assumes the Restoration Project has been completed (see Section 1.3.1 of the EIS); thus, future projected conditions from approved NEPA documentation will be used to aid in the description of future conditions under the No-Action Alternative, as appropriate.

1.4.2 Proposed Project Alternative

The expansion and modification of the Port facility under the Proposed Project Alternative would be configured and automated as described below. The main features of this alternative include:

- Expansion of the West Pier
- Expansion of the East Pier
- Fill in the North Harbor
- Expansion of the federally authorized Turning Basin (at 36-foot depth)

- An eastern breakwater
- Placement of dredged material
- Site configuration and automation

As noted for the No-Action Alternative, the Proposed Project Alternative assumes that the Restoration Project has been completed. The Proposed Project Alternative features would be added to the post-Restoration Project footprint, with a few exceptions as discussed below (Table 2).

The proposed expansion features (not including the post-Restoration Project footprint) would be elevated to up to +25 feet msl to provide protection against future tropical storm surge events. The post-Restoration Project footprint would be elevated to up to +14 feet msl, with the proposed expansion footprint elevated to up to +25 feet msl. Each feature of the proposed expansion footprint is provided in Table 2. Fill material would be obtained from permitted sites located in coastal counties of Mississippi or from sources along the Tennessee-Tombigbee River.

Table 2
Port Footprint Following Proposed PGEP, Including
the Turning Basin Area (approximate acres)

Feature	Post-Restoration Footprint	Proposed Expansion Footprint	Total Footprint
West Pier	171	155	326
East Pier	30	14.5	44.5
North Harbor	63	9	72
Turning Basin	105	85	190
Breakwater	N/A	18	18
Total Footprint	369	281.5	650.5

West Pier Expansion

The West Pier Expansion is intended for development of a new concession area consisting of new, multiuse semi-automated container terminals. The proposed concession area would extend to the south of the West Pier footprint approximately 3,600 linear feet, adding approximately 155 acres to the existing facility. Prior to construction, the expansion footprint may require dredging for removal of soft to very soft foundation materials and to mitigate mud waves outside of the Project footprint. The estimated volume of dredged material is 2.4 million cubic yards (mcy) (Anchor QEA LLC, 2015, Appendix E of the EIS).

East Pier Expansion

The East Pier Expansion would add approximately 14.5 acres to the working surface of the Port's existing East Pier facility. This area would be used for rail operations and a new berth, and would provide

additional space for McDermott. Similar to the West Pier Expansion, this area may require dredging prior to construction. The estimated volume of dredged material is 560,000 cy, which is generally debris that would be disposed in permitted and approved upland disposal areas (Anchor QEA LLC, 2015, Appendix E of the EIS).

North Harbor Expansion

The North Harbor Expansion would create approximately 9 acres of upland in the area formerly occupied by the *Copa Casino* boat. This upland area would be used as a new berthing area. Both new work dredging associated with the construction of this berth and future maintenance dredging would be required in this area (Anchor QEA LLC, 2015, Appendix E of the EIS).

Turning Basin Expansion

The existing Gulfport Turning Basin would be expanded to support the West Pier Expansion. The proposed Turning Basin Expansion (approximately 85 acres) would be between the existing Sound Channel and the proposed terminal, immediately adjacent to the Gulfport Turning Basin. This area would be dredged to a depth of –36-foot mean lower low water (MLLW) plus 2 feet of advance maintenance, plus 2 feet of allowable overdepth, and up to 3 feet due to a sediment disturbance layer consistent with the adjacent FNC and USACE maintenance dredging practices (Anchor QEA LLC, 2015, Appendix E of the EIS). The estimated volume of dredged material is 3.7 mcy.

Eastern Breakwater

A 4,000-linear-foot rip-rap breakwater is proposed on the eastern side of the FNC to provide protection from tropical storm events. The breakwater would vary from 98 to 102 feet wide at its base with a top width of 10 feet and a top elevation of +10 feet NAVD 88. The proposed breakwater would require placing approximately 250,000 cy of rip-rap over a footprint of approximately 18 acres. Baker (2011) evaluated four breakwater alternatives for the PGEP to determine the need to protect the expanded West Pier under storm conditions. Numerical modeling was used to recommend alternatives that would provide protection to the turning basin and terminals while maintaining operational and navigational utility. Modeling indicated that wave action would impact the expanded West Pier compared with current conditions and a need for a breakwater could not be ruled out. The Proposed Project Alternative provides protection from wave energy from the south and east. A breach midway along the alignment of the structure is planned to allow shallow-draft access to the FNC from the adjacent Bert Jones Marina and at the recommendation of the pilots performing ship simulations.

Dredged Material Placement

The new work dredging associated with the construction of the proposed West Pier and East Pier expansions, North Harbor and West Pier berthing areas, and the Turning Basin Expansion is estimated to require removal of approximately 7.5 mcy of dredged material, including 560,000 cy of dredged material

(debris from East Pier) that would be designated for upland disposal. Following construction of the Turning Basin Expansion, the MSPA would be responsible for maintenance dredging of the portion of the new turning basin that is not part of the federally authorized project, as well as the berthing areas associated with the expanded East Pier, North Harbor, and West Pier. Maintenance dredging associated with these areas is anticipated to require removal of approximately 313,000 cy to 1.3 mcy every year. A Dredged Material Management Plan (DMMP) was prepared to evaluate the potential placement options for the new work and maintenance dredged material associated with the Proposed Project Alternative (Anchor QEA LLC, 2015, Appendix E of the EIS). Estimated dredged material quantities are shown in Table 3. Estimated dredge quantities assume maintenance for a 30-year period. At this time, it is expected that new work dredging would occur using mechanical/hopper dredge and maintenance dredging would occur using hydraulic/cutterhead or mechanical/hopper dredging, as necessary.

Table 3
Estimated Dredge Material Quantities, Proposed Project Alternative

Feature	West Pier Expansion	East Pier and East Pier Berthing Areas	North Harbor and West Pier Berthing Areas	Turning Basin Expansion	Total
New Work	2.4 mcy		845,000 cy	3.7 mcy	6.94 mcy
New Work (upland disposal)		560,000 cy			560,000 cy
Maintenance	N/A	63,000–172,000 cy/year	39,000–581,000 cy/year	211,000–586,000 cy/year	313,000 cy–1.3 mcy/year

Source: Anchor QEA LLC (2015)
cy – cubic yards
mcy – million cubic yards

The DMMP evaluated multiple placement alternatives for new work and maintenance dredged material. Sites considered for placement of dredged material included:

- Use as fill for the West Pier Expansion
- 12 designated Beneficial Use (BU) sites
- Thin layer placement
- Candidate BU sites
- Placement in an approved Ocean Dredged Material Disposal Site (ODMDS)

All sites were evaluated based on feasibility, potential environmental impacts, cost, and suitability of material. Potential beneficial use sites were evaluated based on capacity and distance to the dredge site, taking into consideration habitat value, stability, and sediment transport. Recommendations were made for each option (Anchor QEA LLC, 2015, Appendix E of the EIS). Considering additional information is needed to finalize the recommendations of dredged material placement alternatives, the following summarizes potential placement options.

New work dredged material structurally suitable would be used for fill at the Project site. Any material not structurally suitable would be evaluated for potential beneficial use and possible placement at a designated or candidate BU site. The Mississippi Department of Marine Resources (MDMR) is pursuing a permit to designate an area in the Biloxi Marsh Complex (BMC) in Louisiana for beneficial use of dredged material. The goal of this designation is to provide a new BU site on the western side of the state to accommodate material generated from private and public dredging projects to meet the requirements of Mississippi's beneficial use law.

During the DMMP evaluation, the Port began discussions with the MDMR/USACE Beneficial Use Group (BUG) on using the BMC as a placement area for suitable dredged material from the Port (see Figure 1). For the proposed PGEP, the BUG was in favor of a BU site instead of an ODMDS. As such, the BMC is the recommended placement alternative for the new work dredged material for the proposed Project (Anchor QEA LLC, 2015, Appendix E of the EIS). If a suitable site is identified, appropriate coordination would occur in the future. The BMC BU site would function to provide needed particulate material for shoreline nourishment and as protection from shoreline erosion on the Mississippi and Louisiana coasts. If the BMC is not permitted prior to dredging, and no other suitable BU sites are available, the Pascagoula ODMDS (see Figure 1) would be used for disposal of new work dredged material if the material is determined to be in compliance with Section 103 of the MPRSA (33 USC 1413). New work, dredged material not suitable for beneficial use would also be placed in the Pascagoula ODMDS if it meets the criteria in Section 103 of the MPRSA. If the dredged material is not suitable for the ODMDS, the material would be placed in an approved and permitted upland disposal site(s). The Port would be responsible for maintenance dredging of those areas outside of Federal jurisdiction. Maintenance dredged material will be disposed of as discussed in the DMMP (Anchor QEA LLC, 2015, Appendix E of the EIS).

Site Configuration/Automation

The PGEP would further develop the Port into a semi-automated container terminal. The Port has added three rail-mounted gantry (RMG) cranes to Port operations. The road and rail access constructed for the Restoration Project would be extended south on the western side of the West Pier along the expansion footprint. The gantry crane rail would be extended south on the eastern side of the West Pier along the expansion footprint. New infrastructure would include a new wharf, backlands, gates, and an additional warehouse. The new terminal would increase throughput by reducing handling times, allowing ships to come into the Port, unload, reload, and depart in a day or less. The proposed layout assumes that all berths would be utilized as common berths, and the berthing of a vessel would be based on berth availability, vessel schedule, and tenant needs. With the semi-automated operation of the container terminal via RMG cranes, refrigerated containers would be grounded within the RMG container blocks and placed four containers high and nine containers wide per row. This layout would require reefer racks (three-story steel platforms) in front of each row for mechanics to access containers, plug into reefer receptacles, and perform monitoring, inspection, and pretripping of refrigerated equipment. Loading and unloading of containers would be performed by utilizing the two RMGs to transfer containers between trackside

ground positions and railcar well positions. The operation of the West Pier and the Turning Basin Expansion areas would include shared facilities, berths, backlands, and utilization of RMG cranes. With this layout, throughput capacity is projected to reach up to 1.7 million twenty-foot equivalent units (TEUs) annually by 2060.

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2.0 EXISTING ENVIRONMENT

For the discussion of the existing environment, habitat types are described within the Project area (see Figure 2). The evaluation of potential EFH and fisheries resource impacts focuses on the Proposed Project Alternative (see Figure 2). The following sections describe EFH in and adjacent to the Project area.

2.1 HABITAT/COMMUNITY TYPES

Ecoregions are typically considered large geographic areas that are easily distinguished from adjacent regions by differing biotic and environmental factors or ecological processes. Fundamental differences among ecoregions often include changes in climate, physical geography, soils, and large-scale vegetative structure and composition. The Project area is located within the East Gulf Coastal Plain ecoregion, as defined by The Nature Conservancy (TNC) and utilized by the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) (TNC, 1999; Mississippi Museum of Natural Science [MMNS], 2005), and includes the offshore areas of the Mississippi Sound and the Gulf. The Project area occurs at or near sea level, within the Estuary and Mississippi Sound wildlife habitat types, and the Mississippi Sound (smooth bottom) subtype. Mississippi Sound is an estuarine/marine lagoon system that occurs inside, or associated with, the barrier island complex (MMNS, 2005). According to the MDWFP, most of the area immediately adjacent to the existing Port facility is considered urban and suburban land; most of the area exhibits impervious cover, such as concrete or paving, or is heavily impacted by construction activities. As a result, minimal terrestrial vegetation occurs within the proposed Project area, particularly areas within the Project footprint.

Coastal habitat subtypes in the vicinity of the Project area include estuarine bays, lakes, tidal reefs, estuarine marshes, salt pannes, shell middens, estuarine shrublands, and maritime woodlands to the north, along interior protected shorelines and farther inland. Seagrasses and mollusk reefs occur along the interior margin of Mississippi Sound. Manmade beaches and mainland natural beaches occur along the coastline. Barrier island beaches, barrier island passes, barrier island uplands, and barrier island wetland habitats occur south of the Project area along the barrier islands (MMNS, 2005).

A benthic habitat assessment was conducted to satisfy NMFS concern for potential Project-related impacts to the Gulf sturgeon and EFH (see Appendix G of the EIS). This habitat assessment included a benthic habitat characterization of benthic samples collected from 48 locations within the Project footprint, Project area, and larger study area. Benthic organisms were dominated by polychaetes, with *Leitoscoloplos fragilis* and *Mediomastus ambiseta*, representing the most abundant organisms collected (see Appendix G of the EIS). Ross et al. (2009) recorded the same two species, but they were much less abundant. The macrobenthic samples by Ross et al. (2009) were dominated by Florida lancelets (*Branchiostoma floridae*), sand dollars (*Mellita quinquiesperforata*), amphipods, and bivalves (see Appendix G of the EIS).

Several trends were shown in comparing the Project footprint, the Project area, and the larger study area. The Project footprint and Project area had similar relative abundance, species diversity, and species richness with a slightly more even distribution of species. In comparison, the study area had greater species diversity than the Project footprint and Project area. It is possible that existing operations of the Port facilities, such as routine maintenance dredging and placement activities, may have an effect on the ambient conditions surrounding the facility (see Appendix G of the EIS).

2.2 ESSENTIAL FISH HABITAT CATEGORIES

The categories of EFH that occur within the Project area include the estuarine water column and estuarine mud and sand bottoms (unvegetated estuarine benthic habitats). Additionally, EFH located adjacent to the Project area includes estuarine emergent marsh, seagrasses, oyster reefs, and artificial reefs. Upland habitats, as well as fresh water habitats that are not connected to tidal waters or are not tidally influenced, were not considered EFH categories. A brief description of each community is provided below.

Estuarine water column: Habitats within the estuarine water column can be defined in terms of gradients and fluctuations in temperature, salinity, dissolved oxygen, turbidity, and nutrient supply. These components of the water column are variable in both time and space due to tidal fluctuations, freshwater inflows, and strong wind events. The estuarine water column serves as EFH by providing habitat for spawning, breeding, feeding, and growth for a broad array of species and life stages within species. Furthermore, the estuarine open water column serves as a transport medium for organisms between the ocean, upstream rivers, and freshwater systems, where species-specific habitat components are favorable for completing particular life-stages. Zooplankton and phytoplankton are the dominant organisms in this habitat and serve as the foundation of the estuarine and marine food webs.

Phytoplankton (microscopic algae) are the major primary producers (plant life) in the open bay, taking up carbon through photosynthesis and nutrients for growth. Phytoplankton are fed upon by zooplankton (such as small crustaceans, mollusks, and annelid worms), fish, and benthic consumers. In the Mississippi Sound, phytoplankton species composition changes seasonally but are generally dominated by diatoms. Phytoplankton densities are highest in the winter and lowest in the summer (Molina and Redalje, 2010).

Zooplankton are important because they graze on phytoplankton and are food for larval and juvenile fish, including the federally threatened Gulf sturgeon. Zooplankton are most abundant during the spring, with the minimum concentrations occurring in the fall. Zooplankton are limited by sediment turbidity (which limits the phytoplankton production) and currents that can flush them from phytoplankton-rich estuaries (Valiela, 1995). Nekton (organisms that swim freely in the water column) consist mainly of secondary consumers that feed on zooplankton or smaller nekton.

Mississippi Sound supports a diverse nekton community that includes fish, shrimp, and crabs. There are at least 152 fish species that include both resident and migratory species (Rakocinski et al., 1996). Common species of the Mississippi Sound are Atlantic croaker (*Micropogonias undulatus*), speckled worm eel (*Myrophus punctatus*), and southern flounder (*Paralichthys lethostigma*). Species composition changes with the seasons, with a continual turnover of peak abundances of species (Rakocinski et al., 1996).

Estuarine mud and sand bottoms: Estuarine bays are typically large, protected, low-energy, subtidal areas that are enclosed by land on three sides. Bays in Mississippi are up to 30 feet deep and substrates consist of a mixture of mud and sand. Salinity levels and turbidity change frequently depending on tidal variation and weather systems. The muddy bottoms often support a diversity of benthic life forms; including polychaetes, mollusks, insects, and crustaceans, while offering foraging opportunities for numerous bird species (MDMR, 1999). The Mississippi Sound bottom includes mud, fine to coarse sand, and shell fragments that contribute large quantities of nutrients and food.

The distribution of benthic macroinvertebrates is primarily influenced by bathymetry and sediment type (Calnan et al., 1989). Studies of the Mississippi Sound found that polychaetes, bivalves, gastropods, ribbon worms (*Menertea* sp.), and crustaceans are the most common benthic organisms (see Appendix G of the EIS; Ross et al., 2009; Wilber et al., 2006; Environmental Protection Administration [EPA], 2011). Benthic organisms are divided into two groups: epifauna, such as crabs and smaller crustaceans, which live on the surface of the bottom substrate, and infauna, such as mollusks and polychaetes, which burrow into the bottom substrate (Green et al., 1992). Mollusks and some other infaunal organisms are filter feeders that strain suspended particles from the water column; whereas, other organisms, such as polychaetes, feed by ingesting sediments and extracting nutrients. Many of the epifauna and infauna feed on plankton, and in turn, are then fed upon by numerous fish and birds (Armstrong et al., 1987; Lester and Gonzales, 2001).

Table 4 presents the representative benthic macroinvertebrate species that occur in the study area (see Appendix G of the EIS). The data in the table are separated into three general habitat types—nearshore, mid-shore, and passes. Nearshore habitat is dominated by mud/clay substrate and is located between 0 to 3 miles from shore. Mid-shore habitat has some mud, but also has various grain sizes of sand and is located between 3 to 6 miles from shore. The passes are characterized by mostly medium to coarse sand and are located 6 to 12 miles from shore.

Table 4
Representative Benthic Macroinvertebrates that
Occur in the Study Area*

Scientific Name	Common Name	Description
Nearshore (within 3 miles of the shoreline):		
Ogyrides alphaerostris	Estuarine long eyed shrimp	Crustacean
Paraprionospio pinnata	Pinnated spionid pinnata	Polychaete worm
Phoronis spp.	Phoronids	Horseshoe worms (filter feeding lophophore)
Pinnixa spp.	Gulfweed crab	Decapod crustacean
Prionospio perkinsi	No common name	Polychaete worm
Parandalia americana	No common name	Polychaete worm
Polydora	Mud worm	Polychaete worm
Mid-shore (3 to 6 miles from shore):		
Cossura delta	No common name	Polychaete worm
Acanthohaustorius sp.	No common name	Amphipod
Acteocina canaliculata	Channeled barrel-bubble	Gastropod
Edwardsia	Ivell's sea anemone	Sea anemone
Passes (approximately 6 to 12 miles from shore):		
Cyclaspis varians	No common name	Crustacean
Brania wellfleetensis	No common name	Polychaete worm
Chione cancellata	No common name	Bivalve (clam)
Ancistrosyllis sp.	No common name	Polychaete worm
Mediomastus sp.	No common name	Polychaete worm
Unid. Ophiuroidea	No common name	Brittle star

Source: EPA (2011).

*Common names and groups are according to *World Register of Marine Species* (2011).

The Mississippi Sound consists of 25 percent nearshore habitat that is less than 7 feet deep and 75 percent offshore habitat (MMNS, 2005). The medium to coarse sand in the Mississippi Sound is populated with macrobenthic organisms (Ross et al., 2009). Bivalves in estuarine sand bottoms include the blood ark (*Anadara ovalis*), incongruous ark (*Anadara brasiliana*), southern quahog (*Mercenaria campechiensis*), giant cockle (*Dinocardium robustum*), disk dosini (*Dosinia discus*), pen shells (*Atrina serrata*), common egg cockle (*Laevicardium laevigatum*), crossbarred venus (*Chione cancellata*), tellins (*Tellina* spp.), and the tusk shell (*Dentalium texasianum*). One of the most common species occurring in the shallow offshore sands is the sand dollar (*Mellit quinquiesperforata*), as well as several species of brittle stars (*Hemipholis elongata*, *Ophiolepis elegans*, and *Ophiothrix angulata*). Many gastropods are common, including the moon snail (*Polinices duplicatus*), ear snail (*Sinum perspectivum*), Atlantic auger (*Terebra dislocata*), Salle's auger (*Terebra salleano*), scotch bonnet (*Phalium granulatum*), distroted triton (*Distrosio clathrata*), wentletraps (*Epitonium* sp.), and whelks (*Busycon* spp.). Common crustaceans include white shrimp (*Litopenaeus setiferus*) and brown shrimp (*Farfantepenaeus aztecus*) (both are

commercially important), rock shrimp (*Sicyonia brevirostris*), blue crabs (*Callinectes sapidus*), mole crabs (*Albunea* spp.), speckled crab (*Arenaeus cribrarius*), box crab (*Calappa sulcata*), calico crab (*Hepatus epheliticus*), and pea crab (*Pinotheres maculatus*). The most abundant infaunal organisms, with respect to the number of individuals, are the polychaetes (Capitellidae, Orbiniidae, Magelonidae, and Paraonidae) (Britton and Morton, 1989). Approximately 4,061 acres of estuarine mud and sand bottom occur with the Project area.

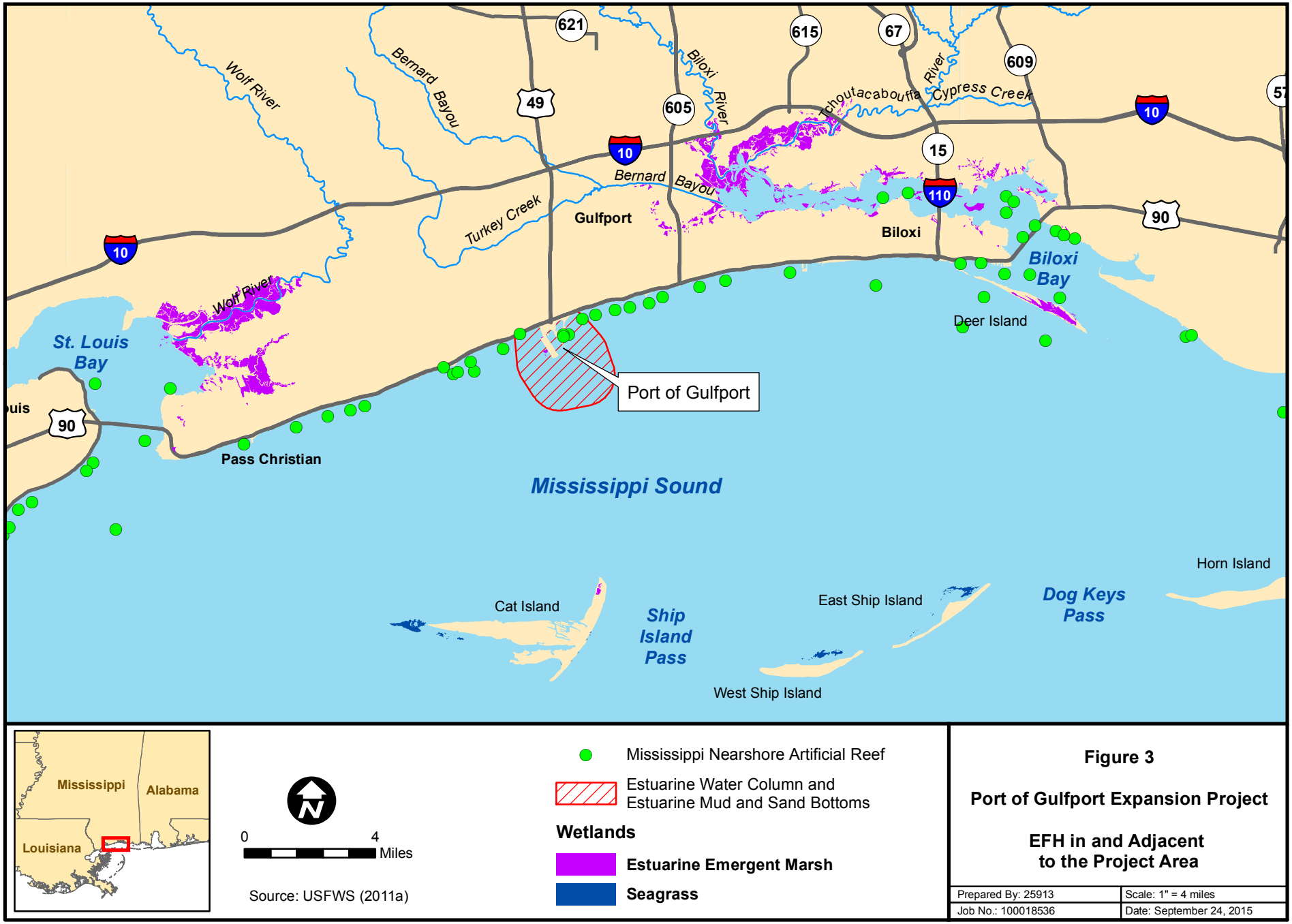
Estuarine emergent marsh: Estuarine marshes consist of intertidal salt, brackish, and tidal freshwater marshes, which provide fringe habitats along the coast, barrier islands, and the mouths of streams and bays (Gosselink, 1984). Tidal marshes typically consist of organic substrates comingled with mineral horizons that were likely deposited during storm surges. Saltmarshes are at low elevations within the tidal zone and are exposed to higher salinities. Saltmarsh vegetation varies depending on the elevation and proximity (zones) to open-water habitat. Lower zones at or below sea level are dominated by smooth cordgrass (*Spartina alterniflora*) communities, which are positioned along exposed shorelines and outer sections of tidal creeks and bays (MDMR, 1999). Marsh communities farther inland, located above the mean high-water mark of the tidal zone, flood irregularly and are typically dominated by black needlerush (*Juncus roemerianus*). Brackish marshes are less affected by storm surges and have lower salinity, thereby allowing for the development of a greater diversity of plant species.

Most estuarine emergent marshes proximal to the Project area occur within estuaries of St. Louis Bay and Biloxi Bay and are mapped as estuarine emergent and estuarine scrub-shrub (U.S. Fish and Wildlife Service [USFWS], 2011). No estuarine emergent marsh EFH occurs within the Project area (Figure 3).

Seagrass: Seagrasses, a type of submerged aquatic vegetation (SAV), are a unique group of vascular plants that have adapted to live in shallow coastal marine waters. Coastal seagrass beds are highly productive compared to other ecosystems, perform a number of vital ecological functions in chemical cycling and physical modification of the water column and sediments, and provide food and shelter for commercially and ecologically important organisms (Orth et al., 2006).

In Mississippi Sound, seagrasses have historically been declining. Forty years ago, an estimated 20,000 acres of seagrasses were documented in Mississippi Sound, and by 1998, only 2,000 acres remained (Moncreiff et al., 1998; Handley et al., 2007). Declines in seagrasses result from both natural and anthropogenic causes. Primary reasons for the disappearance of seagrasses are most likely an overall decline in water quality, extended periods of depressed salinities, and physical disturbances, such as tropical storms and hurricanes. Physical loss of habitat and decreased light availability, coupled with declining water quality, are the most visible features that directly affect seagrasses (USACE, 2009).

Barrier island seagrass communities historically hosted four species of seagrasses: shoalgrass (*Halodule wrightii*), turtlegrass (*Thalassia testudinum*), clovergrass (*Halophila engelmannia*), and manateegrass (*Syringodium filiforme*); however, the extent of these communities, as well as particular species, has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621
615
67
609
49
605
10
15
110
90
Wolf River
Bernard Bayou
Biloxi River
Pascagoula River
Cypress Creek
Turkey Creek
Gulfport
Biloxi
Biloxi Bay
Deer Island
St. Louis Bay
Pass Christian
Port of Gulfport
Mississippi Sound
Cat Island
Ship Island Pass
East Ship Island
West Ship Island
Dog Keys Pass
Horn Island
Mississippi
Alabama
Louisiana
0
4
Miles
Source: USFWS (2011a)
Mississippi Nearshore Artificial Reef
Estuarine Water Column and Estuarine Mud and Sand Bottoms
Wetlands
Estuarine Emergent Marsh
Seagrass
Figure 3
Port of Gulfport Expansion Project
EFH in and Adjacent to the Project Area
Prepared By: 25913
Scale: 1" = 4 miles
Job No.: 100018536
Date: September 24, 2015

declined considerably in recent decades (MDMR, 1999). Widgeongrass (*Ruppia maritima*) beds occur in shallow and moderately turbid waters lower in salinity, such as bays, bayous, mudflats, and occasionally in barrier island ponds. Seagrass beds typically occur in less turbid, moderately saline habitats of the nearshore zone, north of the barrier islands. Currently, seagrasses are sparse in the Mississippi Sound region. However, based on a recent report prepared for the Mississippi Coastal Improvements Program (MsCIP) Barrier Island Restoration Project (Ship Island and Cat Island), the acreage of mapped SAV in Mississippi Sound has increased slightly from 3,614 acres in 2010 to 3,822 acres in 2014 (USACE, 2015). Additionally, recent surveys of Cat Island showed an increase of 338 acres of SAV in 2014 compared to 2010. The report noted some changes in the spatial coverage of SAV boundaries; however, the general distribution of SAV was reported to be mostly stable (USACE, 2015). No seagrasses occur within the Project area.

Oyster reef: Eastern oysters (*Crassostrea virginica*) are present in Mississippi Sound and provide ecologically important functions. Oyster reefs are formed where a hard substrate and adequate currents are plentiful. Currents carry nutrients to the oysters and take away sediment and waste filtered by the oyster. Most oyster reefs are subtidal or intertidal and found near passes and cuts and along the edges of marshes.

Many organisms, including mollusks, barnacles, crabs, gastropods, amphipods, polychaetes, and isopods, inhabit oyster reefs, forming a very diverse community (Sheridan et al., 1989). Oyster reef communities are dependent upon food resources from the open bay and marshes. Many organisms feed on oysters including fish, such as black drum, crab, and gastropods, such as the oyster drill (*Stramonita haemastoma*) (Lester and Gonzales, 2001; Sheridan et al., 1989). When oyster reefs are exposed during low tides, shore birds will use the reef areas as resting places (Armstrong et al., 1987).

In Mississippi Sound, oyster reefs occur in shallow waters that rapidly change in temperature and salinity. Oyster reefs cover approximately 10,000 to 10,999 acres (GMFMC, 2004). Approximately 97 percent of the commercially harvested oysters in Mississippi come from the reefs in western Mississippi Sound, primarily from Pass Marianne, Telegraph, and Pass Christian reefs. The MDMR manages 17 natural oyster reefs, and there are six private leases ranging in size from 5 to 100 acres each (MDMR, 2011a). In western Mississippi Sound, most oyster reefs are subtidal (>6 feet deep), but some intertidal reefs exist in eastern Mississippi Sound (GMFMC, 2004). Based on the information from the MDMR and observations during the benthic habitat survey in April 2012, no oyster reefs occur within the study or Project area.

Artificial reefs: In the Gulf, two types of artificial reefs exist, those structures placed to serve as oil and gas production platforms and those intentionally placed to serve as artificial reefs (GMFMC, 2004). The more than 4,500 oil and gas structures in the Gulf form unique reef ecosystems that extend throughout the water column, providing a large volume and surface area, dynamic water-flow characteristics, and a strong profile (Ditton and Falk, 1981; Dokken, 1997; Stanley and Wilson, 1990; Vitale and Dokken, 2000). Fish are attracted to oil platforms, because these structures provide food, shelter from predators and ocean currents, and a visual reference which aids in navigation for migrating fishes (Bohnsack, 1989;

Duedall and Champ, 1991; Meier, 1989; Vitale and Dokken, 2000). The size and shape of the structure affects community characteristics of pelagic, demersal, and benthic fish (Stanley and Wilson, 1990). Many scientists believe the presence of oil platform structures increase fishery potential (Scarborough-Bull and Kendall, 1992).

Artificial reefs are colonized by a diverse array of microorganisms, algae, and sessile invertebrates, including shelled forms (barnacles, oysters, and mussels), as well as soft corals (bryozoans, hydroids, sponges, and octocorals) and hard corals (encrusting, colonial forms). These organisms (referred to as the biofouling community) provide habitat and food for many motile invertebrates and fish (GMFMC, 2004).

Species associated with the platforms that are not dependent on the biofouling community for food or cover include the red snapper (*Lutjanus campechanus*), Atlantic spadefish (*Chaetodipterus faber*), lookdown (*Selene vomer*), Atlantic moonfish (*Selene setapinnis*), creole fish (*Paranthias furcifer*), whitespotted soapfish (*Rypticus maculatus*), gray triggerfish (*Balistes capriscus*), and lane snapper (*Lutjanus synagris*), which are all transients (move from platform to platform) and resident species (always found on the platforms) including red snapper, large tomate (*Haemulon aurolineatum*) and some large groupers. Other resident species that are dependent upon the biofouling community for food or cover include numerous species of blennies, sheepshead, and small grazers (butterflyfishes, Chaetodontidae). Highly transient, large predators associated with these structures include the barracuda (*Sphyraena barracuda*), almaco jack (*Seriola rivoliana*), hammerhead sharks (*Sphyrna* spp.), cobia (*Rachycentron canadum*), mackerels (Scombridae), and other jacks (*Caranx* spp.) (GMFMC, 2004).

Mississippi has 15 permitted offshore reefs encompassing 16,000 acres of water bottom and 69 permitted nearshore artificial reef sites (MDMR, 2015). These reefs range in size from 3 to 10,000 acres. The material used for offshore reefs consists of concrete rubble, steel-hull vessels (including barges), armored personnel carriers, and materials of design, such as Florida Limestone Pyramids and Reef Balls. The materials of the nearshore reefs consist of limestone, concrete rubble (when water depth allows), crushed concrete, and oyster shells (MDMR, 2011b). Five nearshore reefs are located within the Project area (MDMR, 2015).

Mississippi's Rigs to Reef Program offers conservation-minded alternatives for the platform, as opposed to onshore disposal with no subsequent habitat value. The average platform jacket can provide up to 3 acres of hard bottom habitat for marine invertebrates and fishes, and these submerged platform jackets currently provide habitat for thousands of marine species. The program includes eight permitted reef sites with 14 platform jackets, none of which are located within the Project area (MDMR, 2011b).

3.0 ESSENTIAL FISH HABITAT SPECIES

As described above, EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 USC 1802(10)). EFH is found in the tidally influenced or estuarine communities within the Project area (see Figure 2). These communities play an important role in the cycling of nutrients and food energy through coastal ecosystems. Communities, such as wetlands, produce detritus that is transferred to food energy for higher trophic levels via zooplankton, bivalves, crustaceans, and small fish.

Estuaries such as the Mississippi Sound often contribute to the shellfish resources of the Gulf. Shellfish species range from those located only in brackish wetlands to those found mainly in saline marsh and inshore coastal waters. Multiple species of penaeid shrimp are expected to occur in the vicinity of the proposed Project area; however, brown shrimp and white shrimp are the most numerous (Nelson et al., 1992). At least eight species of portunid (swimming) crabs are common residents of the coastal and estuarine waters of the northern Gulf. Brown shrimp, white shrimp, blue crab, and eastern oyster are the primary shellfish located throughout Mississippi that comprise a substantial fishery (Benson, 1982; MDMR, 2009).

Life histories of many Gulf fish can be characterized as estuarine-dependent. These species typically spawn in the Gulf and their larvae are carried inshore by currents. Juvenile fish generally remain in these estuarine nurseries for about a year, taking advantage of the greater availability of food and protection that estuarine habitats afford. Upon reaching maturity, estuarine-dependent fishes migrate to sea to spawn (returning to the estuary on a seasonal basis), or migrate from the shallow estuaries to spend the rest of their lives in deeper offshore waters (Pattillo et al., 1997).

3.1 HABITAT AREAS OF PARTICULAR CONCERN

Within areas identified as EFH, Habitat Areas of Particular Concern (HAPC) may be designated in order to focus conservation priorities on areas that are important to the life cycles of federally managed species and may warrant more targeted protection measures. Designation of specific HAPCs are based on ecological function, habitats sensitive to human-induced environmental degradation, stressors of development activities, and habitat rarity (Dobrzynski and Johnson, 2001). The MSFCMA does not provide any additional regulatory protection to HAPCs. However, if HAPCs are potentially adversely affected, additional inquiries and conservation guidance may result during further EFH consultation with the NMFS (2009). However, no HAPCs are designated in the Project area (NOAA, 2013).

3.2 RECREATIONAL AND COMMERCIAL FISHERIES

Fish and macroinvertebrate species of special concern that occur in the vicinity of the Project area include those with designated EFH and those of commercial and recreational value. In 1996, the MSFCMA

mandated the identification of EFH for all federally managed species. Refer to Table 5, for a list of commercial and recreational fisheries species known to occur within and adjacent to the Project area.

The main commercial species in Mississippi Sound are blue crab, southern flounder, Gulf menhaden (*Brevoortia patronus*), striped mullet (*Mugil cephalus*), eastern oyster, red snapper, brown shrimp, pink shrimp (*Farfantepenaeus duorarum*), and white shrimp. The top three commercial species are Gulf menhaden, shrimp, and eastern oysters. Commercial fishing in Mississippi accounts for the lowest income ($113 million) and employment (6,400 jobs) compared to other Gulf states (NMFS, 2010).

Table 5
Representative Recreational and Commercial Fish and Shellfish Species
Known to Occur Within and Adjacent to the Proposed Project Area
Harrison County, Mississippi

Common Name	Scientific Name[1]
Atlantic Croaker	*Micropogonias undulatus*
Atlantic Sharpnose Shark	*Rhizoprionodon terraenovae*
Black Drum	*Pogonias cromis*
Blacktip Shark	*Carcharhinus limbatus*
Blue crab	*Callinectes sapidus*
Blue Runner	*Caranx crysos*
Bluefish	*Pomatomus saltatrix*
Brown shrimp	*Farfantepenaeus aztecus*
Bull Shark	*Carcharhinus leucas*
Cobia	*Rachycentron canadum*
Crevalle Jack	*Caranx hippos*
Greater Amberjack	*Seriola dumerili*
Gulf Menhaden	*Brevoortia patronus*
King Mackerel	*Scomberomorus cavalla*
Lane Snapper	*Lutjanus synagris*
Pink shrimp	*Farfantepenaeus duorarum*
Red Drum	*Sciaenops ocellatus*
Red Snapper	*Lutjanus campechanus*
Sand Seatrout	*Cynoscion arenarius*
Sheepshead	*Archosargus probatocephalus*
Southern Flounder	*Paralichthys lethostigma*
Spanish Mackerel	*Scomberomorus maculatus*
Spotted Seatrout	*Cynoscion nebulosus*
Striped Mullet	*Mugil cephalus*
White shrimp	*Litopenaeus setiferus*

Source: Nelson et al. (1992); Pattillo et al. (1997).

[1] Fish species according to Nelson et al. (2004).

In the recent past, two events had an impact on the fishes of Mississippi Sound: Hurricane Katrina and the Deepwater Horizon oil rig explosion and oil spill. Hurricane Katrina pushed a large amount of saltwater into the rivers and freshwater marshes of Mississippi. Low dissolved oxygen (DO) caused numerous fish kills along the coast and near the mouths of the rivers. Changes in the community structure of the lower Pascagoula River was observed immediately after the hurricane, and some of these changes have persisted because of hurricane-induced habitat changes. Longer term sampling is necessary to assess recovery of fish communities closer to the Gulf (Schaefer et al., 2006).

On May 25, 2010, U.S. Commerce Secretary Gary Locke declared a fishery resource disaster for affected fisheries in waters off Louisiana, Mississippi, and Alabama due to the Deepwater Horizon oil rig explosion and oil spill (Locke, 2010). The incident resulted in discharges of oil and other substances from the rig and the submerged wellhead into the Gulf. Because of the oil spill, 95 percent of Mississippi State waters were closed to commercial and recreational fishing. All Mississippi State waters were reopened in July 2010 after the wellhead was capped and oil stopped flowing into the Gulf (Upton, 2011). Although the fisheries have reopened, the impact of these two events is still under consideration and may not be known for years.

Mississippi remains a key coastal recreational fishery destination on the Gulf Coast. The most common species sought include Atlantic croaker, southern kingfish (*Menticirrhus americanus*), Gulf kingfish (*Menticirrhus littoralis*), sand seatrout, silver seatrout (*Cynoscion nothus*), spotted seatrout, sheepshead (*Archosargus probatocephalus*), red drum, red snapper, sharks, southern flounder, and striped mullet. The most sought after recreational species are sand, silver, and spotted Seatrout and Atlantic croaker. Recreational anglers spent $700,000 in fishing equipment and trips in 2009 (NMFS, 2010).

A description of life history characteristics, habitat preferences, and distribution of commercially and recreationally important species, except for federally managed species as described in Section 3.3, is provided below.

Atlantic Croaker (*Micropogonias undulatus*)

Atlantic croaker spawn near passes in the Gulf from September through May. Eggs and sperm are randomly released into the water column for fertilization. Early larval stages are usually offshore and are carried by currents inshore to estuarine habitats. Juvenile Atlantic croaker move into tributaries where they spend 6 to 8 months before migrating offshore starting in March and lasting until November (Pattillo et al., 1997; Lassuy, 1983a). Adults tend to move between estuarine waters typically in the summer and marine waters typically in the fall (Pattillo et al., 1997).

Adult Atlantic croaker are abundant year-round within the Project area (Pattillo et al., 1997; Nelson et al., 1992). Juveniles are abundant in Mississippi Sound from winter to early summer before migrating to the Gulf in the summer (Lassuy, 1983a; Nelson et al., 1992). There is a high probability of juvenile and adult Atlantic croaker occurring in the Project area, especially in fresh-intermediate marshes and open-water habitats.

Black Drum (*Pogonias cromis*)

Black drum is an estuarine dependent species that occurs in open bays and estuaries. Mature black drum spawn in the open bay, in nearshore Gulf waters, or in connecting passes from January to mid-April. During spawning, eggs and sperm are released into the water column for fertilization. Black drum larvae and juveniles move into upper bay areas and tidal creeks, where they remain until they reach about 4 inches in length and then move into the open bay. Black drum remain in the bay until they reach sexual maturity (about 2 years) (Pattillo et al., 1997).

Adult and juvenile black drum are common and occur throughout the Project area year-round (Pattillo et al., 1997; Nelson et al., 1992). Larval and postlarval black drum occur from February through April over the continental shelf; juveniles inhabit muddy bottoms in marsh habitats year-round; and adults are predominantly estuarine, preferring unvegetated sand, mud, and oyster reefs year-round (Pattillo et al., 1997; Sutter et al., 1986; Nelson et al., 1992).

Blue Crab (*Callinectes sapidus*)

Blue crabs are harvested commercially and recreationally throughout the coastal waters of the Gulf. These fisheries have become increasingly important in the Gulf, with reported landings exceeding 49.1 million pounds in 2008 (NOAA, 2010). Blue crabs occupy a variety of habitats, including the upper, middle, and lower estuaries, as well as associated marine environments, depending on their life history stage. Larvae occupy the lower estuary and marine water with salinities greater than 20 parts per thousand (ppt). Blue crabs first enter the estuary during the megalopae life stage, where they begin a benthic existence. Spawning occurs during the spring, summer, and fall (Pattillo et al., 1997).

Factors that affect the distribution and survival of blue crabs are substrate, food availability, water temperature, and salinity. Blue crabs are opportunistic omnivores and feed on fish, detritus, crustaceans, mollusks, and other blue crabs. They are also prey for higher trophic levels, including diving ducks, herons, and predatory fish, including commercial and recreational species (Perry and McIlwain, 1986).

According to Pattillo et al. (1997), all life stages are highly abundant year-round in the Project area. In Mississippi Sound, larval blue crabs are highly abundant May through October; juveniles are abundant May through November; and adults are highly abundant May through March (Nelson et al., 1992).

Gulf Menhaden (*Brevoortia patronus*)

Gulf menhaden occur throughout the northern Gulf from Caloosahatchee River, Florida, to Yucatan, Mexico (Hoese and Moore, 1998). Juvenile menhaden prefer low salinity, open-water habitats adjacent to emergent marsh. Adults often occur offshore. This species makes up a majority of the commercial "pogy" purse-seine fishery. As filter feeders, they feed on phytoplankton, zooplankton, and organic detritus. Both adult and juvenile Gulf menhaden are abundant to highly abundant year-round in Mississippi Sound, with adults moving offshore during the winter months to spawn (Pattillo et al., 1997; Lassuy, 1983b; Nelson et

al., 1992). Spawning may occur multiple times during a single spawning season (Lassuy, 1983b). There is a high probability of juvenile and adult Gulf menhaden occurring in the Project area.

Sand Seatrout (*Cynoscion arenarius*)

Sand seatrout is an estuarine species that occurs throughout the Gulf coast in nearshore habitats (Pattillo et al., 1997). Spawning occurs primarily in shallow, higher salinity habitats from February through October (Pattillo et al., 1997; Sutter and McIlwain, 1987). Typical habitats preferred by juvenile sand seatrout are flooded marshes and seagrass meadows with soft organic substrates. Adults are found in open water over most substrates. Sand Seatrout migrate to the Gulf in late fall or winter to spawn. Eggs and sperm are released into the water column for fertilization. Larvae are carried into the estuary by the currents and migrate to the upper areas of the estuary, preferring channels, small bayous, and shallow marshes to develop (Pattillo et al., 1997). Adult Sand Seatrout reach sexual maturity at 12 months (Pattillo et al., 1997). They feed mainly on fish and shrimp (Overstreet and Heard, 1982).

Juveniles are abundant from March through October in Mississippi Sound and adults are abundant from March through December (Nelson et al., 1992). There is a high probability of juvenile and adult sand seatrout occurring in the Project area, especially in tidally influenced emergent wetlands and open-water habitats.

Striped Mullet (*Mugil cephalus*)

Striped mullet spawn offshore near the surface from October to March. Eggs and sperm are released into the water column for fertilization. Once they reach the prejuvenile stage, they enter the bays and estuaries to mature. Sexual maturity is reached at 3 years of age and adults remain near shore throughout their life. All life stages of striped mullet are common throughout the Project area (Collins, 1985; Pattillo et al., 1997). Striped mullet feed mainly on microalgae, detritus, and sediment particles. Adults and juveniles are found year-round, while larval striped mullet are found from October through May in the Project area (Nelson et al., 1992).

Sheepshead (*Archosargus probatocephalus*)

Sheepshead is an estuarine-dependent species that inhabits much of the Atlantic and Gulf coasts of the U.S. Spawning occurs offshore from February through April, with the peak in March and April. Eggs typically are laid over the inner continental shelf (Pattillo et al., 1997). Larvae are pelagic, but move into estuaries, seeking refuge in seagrass (Pattillo et al., 1997; Lee et al., 1980). Juveniles begin leaving seagrass in late summer, congregating with adults around nearshore reefs as they mature (Pattillo et al., 1997; Jennings, 1985). Adults also use oyster reefs, shallow muddy bottoms, marshes, piers and rocks, and over bare sands of the surf zone. Larval and juvenile sheepshead consume primarily zooplankton, whereas larger juveniles and adults prey on blue crab, oysters, clams, and small fish (Pattillo et al., 1997).

This species is considered common in the Project area during the juvenile and adult life stages (Pattillo et al., 1997). Since juveniles are typically associated with seagrass (Pattillo et al., 1997), which does not occur within the Project area, they may occur in the tidally influenced brackish marshes adjacent to the Project area. Adults may occur in open-water habitat and probably will not occur in brackish marsh habitats adjacent to the Project area.

Spotted Seatrout (*Cynoscion nebulosus*)

Spotted seatrout are estuarine residents, spending their entire life cycle in estuarine waters (Lassuy, 1983c). Spawning typically occurs from March to October, with a peak between April and August. Spawning takes place in passes and in shallow, grassy habitats in bays with moderate salinities. Adults and juveniles prefer seagrass meadows and sandy to muddy substrates. Juvenile spotted seatrout feed on zooplankton as larvae, larger invertebrates, and small fish. As adults, their diet consists primarily of fish (Pattillo et al., 1997).

Juvenile spotted seatrout occur in tidally influenced emergent wetlands adjacent to the Project area from February through October. Adults may be found throughout the Project area year-round (Nelson et al., 1992).

Southern Flounder (*Paralichthys lethostigma*)

Southern flounder are distributed throughout estuarine and coastal waters of the Gulf from Florida to Texas (Hoese and Moore, 1998). Spawning occurs during late fall and early winter in nearshore waters (Gilbert, 1986). Once they reach sexual maturity (2 years), they begin migrating to the Gulf to spawn (Pattillo et al., 1997; Daniels, 2000). Juveniles and adults are demersal and prefer estuarine, riverine, or marine environments, depending on the hydrography (Pattillo et al., 1997). This species is found over unconsolidated clayey silts and organic muds, or associated with seagrass meadows or flooded marsh (Pattillo et al., 1997). Southern flounder are carnivorous during most life history stages, feeding mostly on crustaceans (Gilbert, 1986).

Juvenile southern flounder can be found in the Project area year-round, but are most common in spring through fall. Adult southern flounder are also most common in the Project area from spring through late fall. During late fall, they move to deeper offshore waters to spawn (Pattillo et al., 1997; Reagan and Wingo, 1985; Nelson et al., 1992). Within the Project area, southern flounder may occur in the tidally influenced emergent wetlands and within or adjacent to open-water areas.

Eastern Oyster (*Crassostrea virginica*)

Eastern oysters are sessile bivalves that occur throughout the Gulf in shallow bays, mud flats, and offshore sandy bars (Stanley and Sellers, 1986). Oysters grow well on a variety of substrates ranging from rocky bottoms to some types of mud. The presence and growth of oysters are closely correlated with salinity and other abiotic variables. According to Pattillo et al. (1997), salinity, DO, and pH may affect

where oysters occur and grow. Salinity ranging from 10.0 to 30.0 ppt, pH ranging from 8.2 to 8.8 standard units (su), and DO ranging from 7.4 to 8.6 milligrams per liter (mg/L) are optimal water quality conditions for oysters (Pattillo et al., 1997). Oysters also depend on currents to deliver food, remove feces, and prevent smothering by sediments.

Oysters spawn from March through November in the northern Gulf, with the peak of spawning season in Mississippi occurring May through October (Stanley and Sellers, 1986). Spawning is triggered mostly by temperatures above 68 degrees Fahrenheit (°F) for normal spawning and above 77 °F for mass spawning (Pattillo et al., 1997). Salinity can also influence spawning. Eggs hatch 6 hours after fertilization, and oyster larvae remain in the water column for 2 to 3 weeks after hatching (Pattillo et al., 1997). Upon settling or attachment, the sessile juveniles are referred to as spat. Spat-fall on the Gulf Coast typically occurs from March to mid-November. Juveniles begin to develop once larvae attach. In the Gulf, sexual maturity of oysters may occur as soon as 4 weeks after attachment (Pattillo et al., 1997), but they are generally mature at 18 to 24 months of age (Quast et al., 1988).

Growth rates of adult oysters can vary greatly depending on conditions. Pattillo et al. (1997) provides growth rates of 2.4 inches in the first year, 3.5 inches in the second year, and 4.5 inches in the third year. It is possible for an oyster to reach harvestable size (3 inches) within 2 years.

Oysters can filter water 1,500 times the volume of their body weight per hour, which in turn influences water clarity and phytoplankton abundance. Due to their lack of mobility and their tendency to bioaccumulate pollutants, oysters are an important indicator species for monitoring contamination (Lester and Gonzalez, 2001).

While oysters can survive in salinities ranging from 5 to 40+ ppt, their optimal range is 10 to 25 ppt, which limits pathogens and predators. The low end of the range is critical for osmotic balance. Oysters can survive brief periods of salinities less than 5 ppt by remaining tightly closed, as long as their energy reserves last. In contrast, predators, such as oyster drills, welks, and crabs, prey on oysters during long periods of high salinities (Cake, 1983). *Perkinsus marinus* (Dermo) is the most common and deadly oyster pathogen in the bays bordering the Gulf. It is most prevalent under warm temperatures and higher salinities, which makes it a primary factor affecting habitat suitability.

No oyster reefs occur within the Project area (MDMR, 2011a).

3.3 FEDERALLY MANAGED SPECIES

Information regarding federally managed species was obtained through the NOAA EFH Mapper v3.0 (NOAA, 2013), NOAA Gulf of Mexico Essential Fish Habitat: Offshore Products (NOAA, 2011), NMFS Essential Fish Habitat Relative Abundance Maps (NMFS, 2011), and NMFS Consolidated Atlantic Highly Migratory Species Fishery Management Plan (NMFS, 2009).

NMFS and the GMFMC identified the Project area as EFH for brown shrimp, pink shrimp, white shrimp, blacknose shark (*Carcharhinus acronotus*), spinner shark (*Carcharhinus brevipinna*), finetooth shark (*Carcharhinus isodon*), bull shark (*Carcharhinus leucas*), blacktip shark (*Carcharhinus limbatus*), Atlantic sharpnose shark (*Rhizoprionodon terraenovae*), scalloped hammerhead shark (*Sphyrna lewini*), great hammerhead shark (*Sphyrna mokarran*), cobia (*Rachycentron canadum*), greater amberjack (*Seriola dumerili*), almaco jack (*Seriola rivoliana*), red snapper, gray snapper (*Lutjanus griseus*), lane snapper, vermilion snapper (*Rhomboplites aurorubens*), red drum, king mackerel (*Scomberomorus cavalla*), Spanish mackerel (*Scomberomorus maculatus*), and gray triggerfish (*Balistes capriscus*). The categories of EFH that occur within the Project area include the estuarine water column and estuarine mud and sand bottoms (unvegetated estuarine benthic habitats). Additionally, EFH located adjacent to the Project area include estuarine emergent marsh, seagrasses, oyster reefs, and artificial reefs.

3.3.1 Life History Characteristics of Federally Managed Species

The following describes the preferred habitat, life history stages, and relative abundance of each federally managed species based on information provided by GMFMC (2004). A summary of Mississippi Sound and offshore federally managed species life stages and seasonal abundance is presented in Table 6.

Brown Shrimp (*Farfantepenaeus aztecus*)

Adult brown shrimp are most abundant off the coasts of Texas, Louisiana, and Mississippi from March to December (Pattillo et al., 1997). They inhabit a wide range of water depths up to approximately 360 feet. Nonspawning adults prefer turbid waters and soft sediment. Brown shrimp eggs are demersal and are deposited offshore. The larvae begin to migrate through passes with flood tides into estuaries as postlarvae. Migrating occurs at night mainly from February to April, with some migration in the fall. Brown shrimp postlarvae and juveniles are associated with shallow vegetated habitats in estuaries but are also found over silty sand and nonvegetated mud bottoms. Postlarvae and juveniles occur in salinity ranging from zero to 70 ppt. The density of postlarvae and juveniles is highest in emergent marsh edge habitat and seagrasses, followed by tidal creeks, inner marsh, shallow open water, and oyster reefs (Clark et al., 2004). Juveniles and subadults of brown shrimp occur from secondary estuarine channels out to the continental shelf, but prefer shallow estuarine areas, particularly soft, muddy areas or shell substrates associated with plant-water interface (Rakocinski et al., 1992; Baltz et al., 1993; Peterson and Turner, 1994; GMFMC, 2004). Subadult brown shrimp migrate from estuaries at night on ebb tides during new and full moon phases in the Gulf. Their abundance offshore correlates positively with turbidity and negatively with low DO. Adult brown shrimp inhabit nearshore areas to the continental shelf and are associated with silt, muddy sand, and sandy substrates (GMFMC, 2004). Larval brown shrimp feed on phytoplankton and zooplankton. Postlarvae brown shrimp feed on phytoplankton, epiphytes, and detritus. Juvenile and adult brown shrimp prey on amphipods, polychaetes, and chironomid larvae but graze on algae and detritus (Pattillo et al., 1997; Lassuy, 1983d).

Table 6
Federally Managed Species with the Potential to Occur
in Mississippi Sound and the Project Area

Common Name	Scientific Name	Estuarine		Marine	
		Adults	**Juvenile**	**Adults**	**Juvenile**
Brown shrimp	*Farfantepenaeus aztecus*	common to abundant February–March August–October common to highly abundant May–June rare to common November–January	abundant February–March August–October highly abundant May–July common November–January	major adult area year-round spawn year-round at depths greater than 43 feet	spawning area
Pink shrimp	*Farfantepenaeus duorarum*	common year-round	common year-round	present year-round	nursery area summer and fall
White shrimp	*Litopenaeus setiferus*	common February–March abundant May–January	common Februray–March abundant May–January	present year-round	not present
Blacknose Shark	*Carcharhinus acronotus*	not present		present	
Spinner Shark	*Carcharhinus brevipinna*	not present	present	present	
Finetooth Shark	*Carcharhinus isodon*	present		present	
Bull Shark	*Carcharhinus leucas*	not present	present	present	
Blacktip Shark	*Carcharhinus limbatus*	present		present	
Atlantic Sharpnose Shark	*Rhizoprionodon terraenovae*	present		present	
Scalloped Hammerhead Shark	*Sphyrna lewini*	not present	present	present	
Great Hammerhead Shark	*Sphyrna mokarran*	present		present	
Cobia	*Rachycentron canadum*	present summer	not present	adult area summer spawn in spring and summer	nursery area year-round
Greater Amberjack	*Seriola dumerilli*	not present		present year-round spawning area	present nursery area

Table 6
Federally Managed Species with the Potential to Occur
in Mississippi Sound and the Project Area

Common Name	Scientific Name	Estuarine		Marine	
		Adults	Juvenile	Adults	Juvenile
Almaco Jack	*Seriola rivoliana*	not present		present	
Red Snapper	*Lutjanus campechanus*	not present	nursery area year-round	not present	nursery area year-round
Gray Snapper	*Lutjanus griseus*	rare year-round	rare to common February–March common May–January	present year-round	nursery area
Lane Snapper	*Lutjanus synagris*	not present	nursery area	not present	nursery area
Vermilion Snapper	*Rhomboplites aurorubens*	not present		present	
Red Drum	*Sciaenops ocellatus*	common February–October rare to common November–January	common year-round	adult area year-round	nursery area year-round
King Mackerel	*Scomberomorus cavalla*	present		present	nursery area year-round
Spanish Mackerel	*Scomberomorus maculatus*	not present to common February–October not present - rare November–January	common February–October rare November–January	adult area year-round	nursery area year-round
Gray Triggerfish	*Balistes capriscus*	not present		present	

Source: NMFS (2009, 2011); NOAA (2011a, 2011b).

Periods are: Low Salinity Season (February-April); Increasing Salinity (May-July); High Salinity (August-October); and Decreasing Salinity (November-January).

Although adult brown shrimp typically inhabit offshore waters (Pattillo et al., 1997), there is a high probability that they occur within the Project area, as characteristics of the open-water habitat type closely resemble those preferred by adult brown shrimp (e.g., turbid waters and soft sediments) (Pattillo et al., 1997; Lassuy, 1983d). Juvenile brown shrimp are abundant within Mississippi Sound year-round, while adult brown shrimp are abundant from February to October and generally less common from November to January (NMFS, 2011). In the Gulf, adult brown shrimp are common year-round, spawning at depths greater than 40 feet year-round (NOAA, 2011). Brown shrimp are likely to occur in the study and Project areas.

Pink Shrimp (*Farfantepenaeus duorarum*)

Pink shrimp inhabit Gulf and estuarine waters and are either pelagic or demersal, depending on their life stage. After spawning offshore, postlarval pink shrimp recruitment into the estuaries occurs in the spring and fall through passes. Juveniles can be found in seagrass meadows where they burrow into the substrate; however, postlarvae, juveniles, and adults may prefer a mixture of course sand/shell/mud complex. Densities of pink shrimp are lowest or absent in marshes, low in mangroves, and greatest near or in seagrass. Adults occur offshore at depths from 30 to 145 feet and prefer substrates of coarse sand and shell (GMFMC, 2004). Pink shrimp feed on phytoplankton and zooplankton. Postlarvae feed on phytoplankton, epiphytes, and detritus. Juveniles and adults prey on amphipods, polychaetes, chironomid larvae, algae, and detritus (Pattillo et al., 1997).

Adult and juvenile pink shrimp are common year-round in Mississippi Sound. Adult pink shrimp also occur year-round in the Gulf (NMFS, 2011; NOAA, 2011). Pink shrimp are likely to occur in the study and Project areas.

White Shrimp (*Litopenaeus setiferus*)

White shrimp inhabit Gulf and estuarine waters and are pelagic or demersal, depending on their life stage. Their eggs are demersal and larval stages are planktonic and both occur in nearshore Gulf waters. Postlarvae migrate into estuaries through passes from May to November with most migration in June and September. Migration occurs in the upper water column at night and at mid-depths during the day. Postlarval white shrimp become benthic once they reach the estuary where they seek shallow water with mud or sand bottoms high in organic detritus or rich marsh. Postlarvae and juveniles prefer mud or peat bottoms with large quantities of decaying organic matter or seagrasses. Densities are usually highest along marsh edges and in seagrasses, followed by marsh ponds and channels, inner marsh, and oyster reefs. Juvenile white shrimp prefer salinities less than 10 ppt and occur in tidal rivers and tributaries (Muncy, 1984). As juveniles mature, they migrate to coastal areas where they spawn. Adult white shrimp are demersal and inhabit soft mud or silt bottoms (GMFMC, 2004). Nonspawning adults are tolerant of temperatures between 7 and 100 ºF, and survival is high between salinities of 2 and 35 ppt, while spawning adults prefer salinities above 27 ppt. White shrimp larvae feed on phytoplankton and zooplankton. White shrimp postlarvae feed on phytoplankton, epiphytes, and detritus. Juvenile and adult

white shrimp prey on amphipods, polychaetes, and chironomid larvae, but also graze on algae and detritus (Pattillo et al., 1997).

Adult and juvenile white shrimp are common to abundant in Mississippi Sound throughout the year. Adult white shrimp also occur year-round throughout the Gulf to depths of about 131 feet (NMFS, 2011; NOAA, 2011). White shrimp are likely to occur in the study and Project areas.

Blacknose Shark (*Carcharhinus acronotus*)

The blacknose shark is a common tropical and warm temperate species found on the continental shelf mainly over sand, shell, and coral bottoms to depths of 60 to 210 feet (Compagno, 1984; Morgan et al., 2008; Driggers et al., 2007). These sharks undergo seasonal migrations to the northern portion of their range, where they reside from March to November. Although little is known about their migrations in the Gulf, blacknose sharks were captured in March 2003, south of Pascagoula, Mississippi, indicating that these sharks move offshore during the late autumn, winter, and early spring months (Driggers et al., 2007; Sulikowski et al., 2007). Blacknose sharks reproduce once a year in the Gulf, which is in contrast to their biennial reproductive cycle in the south Atlantic (Sulikowski et al., 2007; Morgan et al., 2008). They feed on small fish, including pinfish (*Lagodon rhomboids*) and porcupine fish (Diodontidae) (Compagno, 1984). Adult and juvenile blacknose sharks occur in Gulf waters of the study and Project areas (NMFS, 2009; Bethea et al., 2008); however, Drymon et al. (2010) suspect that the north-central Gulf is not a large nursery area for this species.

Spinner Shark (*Carcharhinus brevipinna*)

The spinner shark is a common coastal pelagic species found both inshore and offshore to depths of approximately 240 feet, but most common at depths of less than 100 feet. It is a schooling species that commonly leaps and spins out of the water. Spinner sharks are highly migratory, although their patterns are poorly known. They move inshore during the spring and summer to spawn and feed and possibly southward into deeper water during the fall and winter (Compagno, 1984). The northern Gulf is a nursery area for this species (Benson, 1982). Spinner sharks feed primarily on fish, including sardines, herring, anchovies, catfish, mullet, bluefish, tunas, and jacks (Compagno, 1984). Adult spinner sharks are present in the Gulf portion of the study and Project areas, while juveniles are found in estuarine and Gulf waters of the study and Project areas (NMFS, 2009).

Finetooth Shark (*Carcharhinus isodon*)

While little is known about finetooth sharks, they are an inshore species that are abundant in the Gulf and possibly found at depths up to approximately 35 feet (NMFS, 2009; Froese and Pauly, 2011). Documented nursery habitat is located off the Texas and Louisiana coasts (NMFS, 2009). They probably feed on small boney fish and cephalopods (Compagno, 1984). Adult and juvenile finetooth sharks are found in the estuarine and Gulf portions of the study and Project areas (NMFS, 2009).

Bull Shark (*Carcharhinus leucas*)

Bull sharks have a wide range along the coast and may be found inhabiting shallow waters, especially in bays, rivers, and lakes. They frequently move between fresh and brackish water and are capable of traveling great distances. Adults are often found near estuaries and freshwater tributaries (Froese and Pauly, 2011). Bull sharks are viviparous, have a gestation period of a little less than 1 year, and it is assumed their reproductive cycle occurs every 2 years. Juveniles are found at depths less than 80 feet in shallow coastal waters, inlets, and estuaries (NMFS, 2009). They feed on bony fish, sharks, rays, shrimp, crabs, squid, sea urchins, and sea turtles (Froese and Pauly, 2011). Adult and juvenile bull sharks are present in the estuarine and Gulf portion of the study and Project areas (NMFS, 2009; NOAA, 2013).

Blacktip Shark (*Carcharhinus limbatus*)

Blacktip sharks inhabit shallow waters and offshore surface waters of the continental shelf. They are viviparous and young are born in bay systems in late May and early June after a 1-year gestation period. Their reproductive cycle occurs every 2 years. Juveniles inhabit shallow coastal waters from the shore to the 82-foot isobath (NMFS, 2009). They feed mainly on pelagic and benthic fish, cephalopods and crustaceans, and small rays and sharks (Benson, 1982; Froese and Pauly, 2011). Juvenile and adult blacktip sharks occur in the Gulf and estuarine portions of the study and Project areas (NMFS, 2009; NOAA, 2013).

Atlantic Sharpnose Shark (*Rhizoprionodon terraenovae*)

The Atlantic sharpnose shark is one of the most common shark species in the northern Gulf (Hoese and Moore, 1998). Migrations are limited to inshore/offshore movements (Benson, 1982). They inhabit intertidal to deeper waters, often in the surf zone off sandy beaches, bays, estuaries, and river mouths (Froese and Pauly, 2011). During the summer, juveniles and adults inhabit shallow inshore waters. Large schools have been observed in Mississippi Sound during the summer, but they migrate offshore during the winter (Benson, 1982). They are viviparous and mating occurs in June, with a gestation period of about 1 year (NMFS, 2009). Juvenile Atlantic sharpnose sharks are found in higher salinity estuaries and the surf zone during the summer (Hoese and Moore, 1998). They feed on fish, shrimp, crab, mollusks, and segmented worms (Froese and Pauly, 2011). Juvenile and adult Atlantic sharpnose sharks occur in the Gulf and estuarine portions of the study and Project areas (NMFS, 2009; NOAA, 2013).

Scalloped Hammerhead Shark (*Sphyrna lewini*)

Scalloped hammerhead sharks are a very common coastal, pelagic species occurring over shelves and deeper water, often entering bays and estuaries (Compagno, 1984). They are found inshore and offshore to depths of approximately 900 feet, but have been found at depths greater than 1,500 feet (Froese and Pauly, 2011). Juvenile scalloped hammerhead sharks occur close to shore in bays, but move deeper as they grow. They prey on a variety of fish and cephalopods (Compagno, 1984). Juvenile scalloped

hammerhead sharks are present in the estuarine and Gulf portions of the study and Project areas, while adults are present in the marine portion only (NMFS, 2009).

Great Hammerhead Shark (*Sphyrna mokarran*)

Great hammerhead sharks are a nomadic and migratory coastal pelagic and semi-oceanic species occurring close to shore and offshore to depths over 260 feet (Compagno, 1984). They prey mainly on rays and other flat-bodied fish, but also on other sharks, crabs, squid, and small boney fish (Froese and Pauly, 2011). Breeding occurs once every 2 years with birthing in the late spring to summer (Denham et al., 2007). Adult and juvenile great hammerhead sharks are present in the estuarine and Gulf portions of the study and Project areas (NMFS, 2009).

Cobia (*Rachycentron canadum*)

Cobia are large, pelagic fish occurring nearshore to depths of 230 feet near artificial and natural structures, including floating objects. Spawning occurs from April through September in coastal waters. While cobia rarely use estuarine environments, estuaries are important for most of their prey. They feed mainly on mantis shrimp, eels, crabs, squid, and Spanish mackerel (GMFMC, 2004). All life stages of cobia occur in the Gulf portion of the study and Project areas (NMFS, 2011; NOAA, 2011).

Greater Amberjack (*Seriola dumerili*)

Greater amberjack occur throughout the Gulf to depths of 1,300 feet. Adults are pelagic and epibenthic occurring near reefs and artificial structures. Spawning occurs offshore from May to July, and juveniles are pelagic and associated with floating *Sargassum* mats and debris in the offshore nursery areas (GMFMC, 2004). Adult and juvenile greater amberjacks are found in the Gulf within the study and Project areas (NOAA, 2011).

Almaco Jack (*Seriola rivoliana*)

Adult almaco jack occur in outer reefs and offshore banks over 800 feet and are often associated with oil and gas platforms in the Gulf. Young are often seen offshore seeking refuge around *Sargassum* mats and other floating objects (Froese and Pauly, 2011). Spawning is thought to occur from the spring through fall (GMFMC, 2004), and eggs are pelagic (Froese and Pauly, 2011). All life stages of almaco jack are found in the Gulf within the study and Project areas (NOAA, 2013).

Red Snapper (*Lutjanus campechanus*)

Red snapper are demersal, found over sand and rock substrates, around reefs, and underwater objects to depths of 660 feet. However, adult red snapper prefer depths ranging from 130 to 360 feet (GMFMC, 2004). Spawning occurs in the Gulf from May to July and November to December, at depths of 60 to 120 feet over a firm sand substrate (Moran, 1988). Eggs are found offshore in the summer and late fall. Larvae, postlarvae, and early juveniles occur from July through November in shelf waters (GMFMC,

2004). Early and late juveniles are often associated with underwater structures or small burrows of low relief, but are also abundant over barren sand and mud bottoms (GMFMC, 2004; Gallaway et al., 1999). Juvenile red snapper feed on shrimp, but after age one, prey primarily on fish and squid (GMFMC, 2004; Moran, 1988). Of the vertebrates consumed, most are not obligate reef dwellers, indicating that red snapper feed away from reefs (GMFMC, 2004). Within the study and Project areas, red snapper utilize the Gulf as a nursery area year-round (NOAA, 2011).

Gray Snapper (*Lutjanus griseus*)

Gray snapper can be demersal, structure, or mid-water dwellers inhabiting marine, estuarine, and riverine habitats. They inhabit depths to about 550 feet in the Gulf. Juvenile gray snapper are common in shallow water around seagrasses, while adults tend to congregate in deeper Gulf waters around natural and artificial reefs. Spawning occurs in the Gulf from June to August around structures and shoals. Their eggs are pelagic and the larvae are planktonic, both occurring in Gulf shelf waters and near coral reefs. Postlarvae migrate into the estuaries and are most abundant over *Halodule* and *Syringodium* grassbeds. Juveniles seem to prefer *Thalassia* grassbeds, seagrass meadows, marl bottoms, and mangrove roots, and are found in estuaries, bayous, channels, grassbeds, marshes, mangrove swamps, ponds, and freshwater creeks (GMFMC, 2004). Juvenile gray snapper feed on estuarine-dependent organisms such as shrimp, small fish, and crabs. Gray snapper are classified as opportunistic carnivores at all life stages (Pattillo et al., 1997). In estuaries, juveniles feed on shrimp, larval fish, amphipods, and copepods. Adults feed primarily on fish, but smaller individuals will prey on crustaceans (GMFMC, 2004). In Mississippi Sound, juvenile gray snapper can be common from May to March (NMFS, 2011). Adult and juvenile gray snapper are found in the Gulf waters of the study and Project areas (NOAA, 2011).

Lane Snapper (*Lutjanus synagris*)

Lane snapper are demersal, occurring over all substrate types, but are most commonly found near coral reefs and sandy bottoms. Spawning occurs in Gulf waters from March through September. Nursery areas include mangrove and grassy estuarine habitats in southern Texas and Florida and shallow waters with sand and mud bottoms along all Gulf states (Hoese and Moore, 1998). Juvenile lane snapper appear to favor grass flats, reefs, and soft bottoms to depths of approximately 70 feet. Adult lane snapper occur offshore in depths up to 430 feet near sand bottoms, natural channels, banks, and artificial and natural structures (GMFMC, 2004). Juveniles feed on estuarine-dependent organisms, such as shrimp, small fish, and crabs. Lane snapper are considered unspecialized, opportunistic predators, feeding on a variety of crustaceans and fish. Adults tend to prefer fish (GMFMC, 2004). Juvenile lane snapper are found in Mississippi Sound and in Gulf waters of the study and Project areas (NMFS, 2011; NOAA, 2011).

Vermilion Snapper (*Rhomboplites aurorubens*)

Vermilion snapper are demersal, occurring in waters from 66 to 656 feet deep over rock, gravel, or sand bottoms in the Gulf (Froese and Pauly, 2011; GMFMC, 2004). They often form large schools, especially the young (Froese and Pauly, 2011). Spawning occurs in offshore waters from April to September.

Juveniles are found on hard bottoms, reefs, and artificial structures (GMFMC, 2004). They feed on fish, benthic invertebrates, crabs, and shrimp (Froese and Pauly, 2011). All life stages of vermilion snapper are found in the Gulf within the study and Project areas (NOAA, 2013).

Red Drum (*Sciaenops ocellatus*)

Red drum occupy a variety of habitats, ranging from offshore depths of 130 feet to very shallow estuarine waters. Spawning occurs in the Gulf near the mouths of bays and inlets from August through November, peaking in September and October (Pattillo et al., 1997). Eggs usually hatch in the Gulf and larvae are transported with tidal currents into the estuaries where they mature. Adult red drum use estuaries, but tend to migrate offshore where they spend most of their adult life. Red drum occur over a variety of substrates including sand, mud, and oyster reefs and tolerate a wide range of salinities (GMFMC, 2004).

Estuaries are especially important to larval, juvenile, and subadult red drum. Juveniles are most abundant around marshes, preferring shallow, protected waters over mud substrate or among seagrasses (Stunz et al., 2002a). Juveniles show preference for specific habitat types occurring at higher densities in seagrass meadows (Stunz et al., 2002a), with higher growth rates in brackish emergent marsh and in seagrass meadows (Stunz et al., 2002b). Subadult and adult red drum prefer shallow bay bottoms and oyster reefs (GMFMC, 2004). Estuaries are also important for the prey of larval, juvenile, and subadult red drum. Their larvae feed primarily on shrimp, mysids, and amphipods, while juveniles prefer fish and crabs. Adults feed primarily on shrimp, blue crab, striped mullet, and pinfish (GMFMC, 2004). Adult and juvenile red drum are common year-round in the Gulf and Mississippi Sound within the study and Project areas (NMFS, 2011; NOAA, 2011). Red drum abundance in Mississippi may be due to the close proximity of extensive estuaries in Louisiana (Pattillo et al., 1997).

King Mackerel (*Scomberomorus cavalla*)

King mackerel are pelagic and found in Gulf waters from nearshore to depths of 660 feet, although generally occurring in depths less than 260 feet. Spawning occurs in the Gulf over the outer continental shelf from May to October. Eggs are pelagic, occurring over depths ranging from approximately 100 to 600 feet in the spring and summer months. Nursery areas are located in marine waters with juveniles only occasionally entering estuaries of the study and Project areas (GMFMC, 2004).

While estuaries are important for the variety of prey species king mackerel feed upon, such as squid, shrimp, and other crustaceans, they mainly feed on herrings (GMFMC, 2004). Adult and juvenile king mackerel are found in the estuarine and Gulf portions of the Project area (NOAA, 2011).

Spanish Mackerel (*Scomberomorus maculatus*)

Spanish mackerel are pelagic, inhabiting depths up to 250 feet throughout the coastal zone of the Gulf. Adult Spanish mackerel are usually found from nearshore to the edge of the continental shelf. However, they may also migrate seasonally into estuaries with high salinity, but this migration is infrequent

(GMFMC, 2004). Spawning occurs in the northern Gulf from April through October, peaking in August and September. Larvae typically occur in the Gulf in depths up to 300 feet (Pattillo et al., 1997). Juveniles inhabit the Gulf surf and sometimes estuarine habitats. However, juvenile Spanish mackerel prefer marine salinities and are not considered estuarine-dependent. Juveniles also prefer clean sand bottoms, but the substrate preferences of the other life stages are unknown (GMFMC, 2004). While Spanish mackerel rarely use estuarine environments, estuaries are important for most of their prey. They feed on a variety of fishes, extensively herrings, as well as squid, shrimp, and other crustaceans (Pattillo et al., 1997).

Within Mississippi Sound, both adults and juveniles are common from February to October and uncommon from November to January (NMFS, 2011). Adult and juvenile Spanish mackerel are found in the Gulf year-round within the study and Project areas (NOAA, 2011).

Gray Triggerfish (*Balistes capriscus*)

Adult gray triggerfish occur throughout the Gulf in waters greater than 33 feet on both natural and artificial reefs. Spawning occurs in late spring and summer. Eggs are found in nests prepared in sand near artificial and natural reefs, which are guarded by females and/or males. Larvae, postlarvae, and juveniles are pelagic and are associated with *Sargassum* mats or other floating debris. Juveniles may also be associated with mangroves. Juvenile fish (5 to 7 inches) leave the *Sargassum* habitat in the fall and move to natural and artificial reefs. Gray triggerfish have been observed feeding on sand dollars and sea urchins on soft bottom habitats (GMFMC, 2004). All life stages of gray triggerfish are found in the Gulf within the study and Project areas (NOAA, 2013).

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4.0 POTENTIAL IMPACTS TO EFH

The sections below discuss the No-Action Alternative and the potential impacts from the Proposed Project Alternative on EFH for recreational and commercial fisheries and federally managed species. Adverse effects analyzed of the Proposed Project Alternative include direct and indirect physical, chemical, or biological alterations resulting in the reduction to quality and quantity of EFH and managed species and the cumulative or synergistic consequences.

4.1 ALTERNATIVES ANALYSIS

4.1.1 No-Action Alternative

Under the No-Action Alternative, EFH would remain as described in Sections 2.0 and 3.0. Impacts from current maintenance dredging include temporary increases in turbidity during and shortly after dredging activities and burial of benthic organisms in permitted placement areas. No long-term effects are expected from the No-Action Alternative.

4.1.2 Proposed Project Alternative

Under the Proposed Project Alternative, a total of approximately 7.5 mcy of material would be dredged, including 560,000 cy of debris from the East Pier; any material not structurally suitable for fill at the Project site would be evaluated for potential beneficial use at approved dredged material placement sites. As described previously, the MDMR is pursuing a permit to designate an area in the BMC for BU of dredged material. For the proposed PGEP, the BUG was in favor of a BU site instead of an ODMDS. As such, the BMC is the recommended placement alternative for the new work dredged material for the proposed Project (Anchor QEA LLC, 2015, Appendix E of the EIS).

The debris from the East Pier would be designated for upland disposal. Approximately 178.5 acres of the 264 acres of dredged-open water bottom habitat would be filled and 85.5 acres would become deeper open-water habitat, thus reducing the amount of food and habitat available to some aquatic communities; an additional 18 acres would be filled to develop the breakwater, totaling 282 acres of potential impact from implementation of the Proposed Project Alternative. A total of approximately 29 acres of the 196.5 acres of fill would be comprised of rip-rap which would be placed along the outer perimeter of the West Pier (11.36 acres) and to comprise the breakwater (18 acres) for the primary purpose of shore protection. The proposed breakwater would require placing 250,000 cy of rip-rap over a footprint of approximately 18 acres. The sections below detail the potential impacts to EFH for these species, as well as recreationally and commercially important species listed in Section 3.2.

The Proposed Project Alternative could adversely affect multiple life history stages of several federally managed species. These include the following: all life stages of brown, pink, and white shrimp, blacknose shark, finetooth shark, blacktip shark, Atlantic sharpnose shark, great hammerhead, cobia, greater

amberjack, almaco jack, gray snapper, vermilion snapper, red drum, king mackerel, Spanish mackerel, and gray triggerfish; and juvenile life stages of spinner shark, scalloped hammerhead shark, red snapper, and lane snapper. Table 6 provides a summary of federally managed species with the potential to occur in the proposed Project area. The sections below detail the potential impacts to EFH for these species, as well as with recreationally and commercially important species listed in Section 3.2.

4.2 POTENTIAL IMPACTS TO EFH

4.2.1 Estuarine Water Column

The estuarine water column in the vicinity of the proposed Project footprint would be exposed to increased turbidity during Project construction and maintenance dredging. In most cases, turbidity is generally localized and short lived, but may impact federally managed species close to the Project area. The duration and extent of sediments plumes are dependent upon variables that affect currents. Teeter et al. (2003) found that the area of high turbidity extended roughly to the edge of the fluid mud flow or about 1,300 to 1,650 feet from the dredge discharge pipe, but the duration of the higher turbidity was temporary. In most cases, turbidity can be expected to return to near ambient conditions within a few hours after dredging has ceased.

Turbidity in estuarine and coastal waters is generally cited as having a complex set of impacts on a wide array of organisms (Hirsch et al., 1978; Stern and Stickle, 1978; Wright, 1978; Wilber et al., 2005). Turbidity from total suspended solids (TSS) reduces light penetration and, therefore, can reduce primary production, such as phytoplankton growth (Wilber and Clarke, 2001). Such reductions in primary productivity are usually localized and associated with dredging, filling, and placement operations and would be limited to the duration of the plume at a given site. In some cases, the decrease in primary production can be offset to some degree by an increase in nutrients, which are released into the water column during dredging and can stimulate algal growth (Morton, 1977; Newell et al., 1998). Most studies of increased turbidity indicate that adverse impacts to plankton communities are usually localized and of short duration (May, 1973; Armstrong et al., 1987; Valiela, 1995).

Increased sedimentation can impact juvenile and adult fish by reducing feeding efficiency, altering reproductive cycles, and degrading habitat (Newcombe and Jensen, 1996; Clarke and Wilber, 2000). In cases where organisms are exposed to excessive turbidity, the sediments can coat gills; therefore, limiting gas exchange and possibly leading to asphyxiation (Clarke and Wilber, 2000; Wilber and Clarke, 2001). However, many species are motile and can avoid highly turbid areas and, under most conditions, these organisms can survive short exposure (minutes to hours) to elevated turbidity levels (Clarke and Wilber, 2000; Wilber and Clarke, 2001; Newcombe and Jensen, 1996).

Effects of elevated turbidity levels on adult stages of various filter-feeding organisms such as oysters, copepods, and other species include reduced filtering rates and clogging of filtering mechanisms; therefore, interfering with ingestion and respiration and causing abrasion (Newcombe and Jensen, 1996; Wilber and Clarke, 2001; Stern and Stickle, 1978). These effects tend to be more pronounced when TSS

concentrations are greater than 100 mg/L, but are apparently reversible once turbidities return to ambient levels (Newcombe and Jensen, 1996). Research has shown that more sensitive species and life stages (i.e., eggs, larvae, and fry) are impacted by longer exposure to suspended sediments than less sensitive species and older life stages (Germano and Cary, 2005; Wilber and Clark, 2001; Wilber et al., 2005; Newcombe and Jensen, 1996). Many crustaceans (such as shrimp and crabs) are less sensitive to suspended sediments, since they reside on or near the bottom where loose sediments naturally occur (Wilber and Clark, 2001; Wilber et al., 2005). Mississippi Sound is often naturally turbid due to the wind and currents. Many of the species tolerate some level of turbidity and no long-term impacts to finfish or shellfish populations are anticipated from construction, dredging, and placement activities associated with the Proposed Project Alternative. Furthermore, the federally managed species are mobile and they would likely avoid areas where suspended solids are too high.

Dredged material is to be used beneficially at approved placement/disposal sites. Allocating dredged material for beneficial use not only reduces the level of traditional placement disruptions, but when properly engineered, has environmental, economic, and social benefits. The BMC is the BU site identified as a candidate for placement of the new work dredged material as part of the Proposed Project Alternative. The ecological function of this habitat variety (i.e., islands, bays, and open-water lakes) serves to support aquatic life in the region. Improvement of this area through beneficial use would serve to enhance the fisheries of the surrounding areas, thus providing support to commercial and recreational fishermen. Restoration of the area would also provide additional storm protection of the coastal region of Louisiana and Hancock County (Anchor QEA LLC, 2015, Appendix E of the EIS).

Vessel traffic would be expected to increase with the Proposed Project Alternative, slightly increasing the probability of a petroleum spill. However, in the event a petroleum spill should occur, most adult shrimp, crabs, and fish are probably mobile enough to avoid areas of high oil concentration. Depending on the product, most petroleum (e.g., crude oil) would remain at or near the surface and typically does not impact motile organisms in deeper water. Lighter petroleum (e.g., some refined products) can disperse into the water column or might have additives that can dissolve in water, potentially impacting less mobile organisms. Larval and juvenile fish and shellfish are more susceptible to petroleum products than adults, since they are less mobile. Population impacts would be greater when early life stages are present. Oil spills would also impact lower levels of the food web; however, phytoplankton and zooplankton can recover rapidly due to high reproductive rates, widespread distribution, and exchange with tidal currents (Kennish, 1992).

Anoxic conditions (<1 mg/L) exist in the Turning Basin area due to its depth and stratification (see Appendix G of the EIS; EPA, 1999, 2013; Orlando et al., 1993; USACE, 2006). Low DO may limit habitat for some nekton and benthic macroinvertebrates. Since the increased area with low DO would be relatively small, it should not measurably affect ecological health in the Project area or Mississippi Sound.

Measurable impacts from chemical contaminants like heavy metals, synthetic organic compounds, cyanide, and nutrients are not expected to occur. This conclusion is based on monitoring and laboratory bioassays conducted since 2000. The results of these analyses are provided below and indicate that no extensive chemical contamination occurs in the Gulfport Harbor or the FNC. The Gulfport Harbor is the portion of the Project area surrounded by industry and is the area most likely to have chemical contamination from adjacent industries, berthed vessels, loading and unloading operations, and stormwater runoff from industrial areas. The lack of significant contamination in the Gulfport Harbor suggests chemical contamination in areas affected by the Proposed Project Alternative would be probably lower than in the Gulfport Harbor.

- Chemicals in water samples from Gulfport Harbor in November and December 2012 were below EPA and Mississippi State Water Quality Criteria (Anchor QEA LLC, 2015, Appendix E of the EIS);
- Dissolved copper was the only chemical in elutriate samples collected from Gulfport Harbor in November and December 2012 that exceeded EPA and Mississippi State Water Quality Criteria (Anchor QEA LLC, 2015, Appendix E of the EIS). Samples for metals in elutriates from different locations throughout the benthic habitat study area were analyzed and all were below Mississippi State Water Quality Criteria (see Appendix E of the EIS). Earlier elutriate monitoring showed levels of ammonia, dieldrin, and endrin that exceeded the Mississippi State Water Quality Criteria, while metals, polychlorinated biphenyls (PCBs), and other pesticides were below criteria or detection limits (USACE, 2006);
- Solid phase and suspended particulate phase toxicity bioassays indicated Turning Basin sediments were not acutely toxic (Anchor QEA LLC, 2015, Appendix E of the EIS). EPA (2013) and USACE (2006) evaluated sediment toxicity and found sediments from the FNC were not acutely toxic;
- Turning Basin sediment contaminants of concern did not bioaccumulate in concentrations statistically greater than U.S. Food and Drug Administration's action levels (Anchor QEA LLC, 2015, Appendix E of the EIS);
- Although nine metals were found in some samples at concentrations exceeding water quality criteria, the measure of whether or not those metals are likely to measurably impact biota includes whether the metals are found in elutriate samples and whether there is acute toxicity during exposure to elutriates or sediments. Most recent monitoring indicates those metals are not likely to elute in high concentrations except for copper, and there is no acute toxicity to elutriate or sediments containing those metals.
- A review of EPA Superfund sites indicated that no Superfund sites are located adjacent to the Gulfport Harbor (Anchor QEA LLC, 2015, Appendix E of the EIS); and
- Review of the USCG's National Response Center website of reports of potential hazardous material releases from 2001 to 2010 revealed no reports of contamination resulting from loss of cargo (Anchor QEA LLC, 2015, Appendix E of the EIS).

- Thompson Engineering Inc. (2015) recently completed testing of potential dredged material associated with the Port of Gulfport Spool Base located adjacent to the existing Port of Gulfport East Pier, in accordance with the Sampling and Analysis Plan (SAP) approved on February 27, 2015 by the MDMR. Sediment analytical results from the recent testing did not identify any detectable concentrations of volatiles or pesticides in the two sediment core borings but found one constituent (acenaphthene) above the Screening Quick Reference Tables threshold effects level (TEL) and probable effects level (PEL) screening levels; however, the reported concentration was below the Mississippi Department of Environmental Quality (MDEQ) Tier 1 Target Remediation Goals (TRGs). Several dioxins and furans were detected in both sediment samples but were also below the MDEQ Tier 1 TRGs. The arsenic concentrations reported in both sediment samples exceeded the MDEQ Tier 1 TRGs and the TEL but were both below the PEL. All other detectable concentrations of constituents were either below the TEL, PEL, and MDEQ Tier 1 TRGs or below the MDEQ Tier 1 TRGs and between the TEL and PEL screening levels. As stated above, placement of the proposed dredged material from the East Pier as part of the proposed Project would meet all applicable regulations and be disposed of in a permitted and approved upland disposal area

In summary, the similarity between sediments in the Gulfport Harbor, FNC, ODMDS, and sites considered minimally impacted in the Mississippi Sound, combined with the general lack of contaminants of concern, indicate that sediment quality impacts resulting from dredge and fill activities associated with the Proposed Project Alternative using any of the placement options considered are not likely to occur (Anchor QEA LLC, 2015, Appendix E of the EIS).

Potential direct take could result from elevated underwater noise from construction and dredging activities resulting in instantaneous death, latent death soon after exposure, or death several days later. The Proposed Project Alternative may result in underwater noise from pile installation, dredging, and boat traffic associated with the Proposed Project Alternative. The Mississippi Sound experiences moderately high volumes of boat traffic, particularly from large vessels accessing the Port of Gulfport. Noise may be generated by vessels associated with construction of the Proposed Project Alternative; however, noise levels are not expected to add to the current background noise levels from existing boat traffic. Therefore, noise from vessels and barges will not be discussed further in this assessment.

The Fisheries Hydroacoustic Working Group (FHWG), a multi-agency work group, developed criteria for the acoustic levels at which various physiological effects to fish could be expected (FHWG, 2008). The criteria were developed primarily for species on the west coast of the U.S.; however, the NMFS and USFWS have relied on these criteria for assessing projects on the east coast and Gulf of Mexico for sound effects analysis (USFWS, 2015). The FHWG determined that peak sound pressure waves should be within a single strike threshold of 206 decibels (dB), and the cumulative sound exposure level (cSEL) associated with a series of pile strike events should be less than 187 dB cSEL to protect listed fish species that are larger than 2 grams, and less than 183 dB cSEL for fish species that are smaller than 2 grams (FHWG 2008).

The Proposed Project Alternative includes the installation of approximately 4,000 pre-stressed concrete piles for construction of the new wharf associated with the West Pier Expansion. These piles would consist of approximately 2,680 24-inch x 24-inch square, pre-stressed concrete piles that range in length from 80 feet to 100 feet. The remaining 1,320 piles would be 36-inch cylindrical, hollow, pre-stressed concrete piles installed along the outside edge of the wharf to support the crane rail. The proposed installation plan estimates driving 6 piles per day in approximately 20-foot water depth, within a 10-hour work day. Using one installation rig, the installation would occur 6 days per week and take approximately 2.5 years to complete. However, if a second installation rig is utilized, up to 12 piles could be driven in a single work day. The installation may include pre-augering or jetting the piles for the first 65 to 70 feet; the remaining 10-15 feet would be driven with a standard pile-driving hammer to set the bearing capacity of the pile. The estimated total number of strikes per day would range from 3,768 to 15,132.

The NMFS Pile Driving Calculator Model was used to assess the potential underwater noise impacts from pile driving for the Proposed Project Alternative (NMFS, 2015). This model is based on data from similar piles in similar substrate and requires an estimate of the total number of strikes per day to install the piles. Assumptions for input into the NMFS model were based on the number of strikes proposed for the 24-inch x 24-inch square pre-stressed concrete piles and the 36-inch cylindrical, hollow, pre-stressed concrete piles. Reference noise levels were selected from the Compendium of Pile Driving Sound Data, updated in October 2012, to represent the Proposed Project Alternative (Caltrans, 2012).

Based on the size of the piles and estimated water depth, noise generated by installation of the square and cylindrical piles is estimated to be 185 dB peak, with a cumulative strike sound exposure level of 207 dB cSEL, and root mean square (RMS) sound levels of 163 dB (square piles) and 165 dB (cylindrical piles). Based on a scenario of 3,768 total strikes per day (2,512 strikes for the square piles and 1,256 strikes for the cylindrical piles), the model analysis shows that the threshold for physical injury to listed fish species that are larger than 2 grams would have the potential to be exceeded up to 705 feet from the installation site for both square and cylindrical piles. The threshold for physical injury to fish species that are smaller than 2 grams would have the potential to be exceeded up to 1,118 feet for the square piles and 1,302 feet for the cylindrical piles, refer to the BA prepared for the EIS (Appendix J).

Calculations for the pile driving scenario of 15,132 total strikes per day (10,088 strikes for the square piles and 5,044 strikes for the cylindrical piles), show that the noise generated by installation of the square and cylindrical piles is estimated to be 185 dB peak, with a cumulative strike sound exposure level of 213 dB cSEL, and RMS sound levels of 163 dB (square piles) and 165 dB (cylindrical piles). The threshold for physical injury would have the potential to be exceeded within up to 1,118 and 1,775 feet from the installation site of square piles and cylindrical piles, respectively, for fish species both larger and smaller than 2 grams.

Based on the underwater noise analysis, the proposed pile driving of the aforementioned piles would likely exceed the adopted underwater noise thresholds for physical and behavioral impacts to fish species. Sound pressure levels in excess of the disturbance threshold (but below the threshold for injury) can

potentially cause temporary behavioral changes that may increase the risk for predation and reduce an individual fish's likelihood of foraging or spawning success.

Noise impacts from dredging associated with the Proposed Project Alternative may occur. It is estimated that a dredge would have a noise level of 70 dBA (A-weighted decibels) at 50-foot water depth (see Section 4.6.4.1 of the EIS). Based on this information, the noise level produced from dredging activities would be below the interim fish injury thresholds currently accepted by the NMFS, 206 dB peak level sound measurement (LPEAK), and 187 dB cSEL (Federal Highway Administration, 2012).

4.2.2 Estuarine Mud and Sand Bottoms

The proposed Project would alter the benthic habitat through dredging, filling, and placement activities. Of the 264 acres of dredged area, 178.5 acres would be filled and 85.5 acres would become deeper open-water habitat; an additional 18 acres would be filled to develop the breakwater. The Mississippi Sound contains approximately 452,000 acres of estuarine mud and sand bottom habitat. The loss of 196.5 acres of estuarine mud and sand bottom habitat would be a small fraction (0.04 percent) of the total available habitat within the entire system.

Excavation removes and buries benthic organisms, whereas placement smothers or buries benthic communities. Dredging, filling, and placement of dredged material may cause ecological damage to benthic organisms in three ways: (1) physical disturbance to benthic ecosystems; (2) mobilization of sediment contaminants, making them more bio-available; and (3) increasing the amount of suspended sediment in the water column (Montagna et al., 1998). Dredging can result in a reduction of species diversity by 30 to 70 percent, the number of individuals by 40 to 95 percent, and a similar reduction in the biomass of benthic fauna existing within the boundaries of dredged areas (Newell et al., 1998).

Recolonization of areas impacted by dredging and dredged material disposal occurs through vertical migration of buried organisms through the dredged material, immigration of postlarval organisms from the surrounding area, larval recruitment from the water column, and/or sediments slumping from the side of the dredged area (Bolam and Rees, 2003; Newell et al., 1998). The response and recovery of the benthic community from dredged material placement is affected by many factors, including environmental (e.g., water quality, water stratification), sediment type and frequency, and timing of disposal. Communities in these ecosystems are dominated by opportunistic species tolerant of a wide range of conditions (Bolam et al., 2010; Bolam and Rees, 2003; Newell et al., 1998, 2004). Although changes in community structure, composition, and function may occur, these impacts would be temporary in some dredging and disposal areas (Bolam and Rees, 2003). Shallower, higher energy estuarine habitats can recover within 1 to 10 months from perturbation, while deeper, more-stable habitats can take up to 8 years to recover (Bolam et al., 2010; Bolam and Rees, 2003; Newell et al., 1998; Sheridan, 1999, 2004; Wilber et al., 2006; VanDerWal et al., 2011).

Maurer et al. (1986) demonstrated that many benthic organisms were able to migrate vertically through 35 inches of dredged material; however, the species present in early succession stages of recovery are not

the same as those buried by the dredged material. Although vertical migration is possible, most organisms at the center of the disturbance do not survive, and survival was shown to increase as distance from the disturbance increased (Bolam and Rees, 2003; Maurer et al., 1986). The release of nutrients during dredging may enhance benthic organism diversity and population densities outside the immediate dredge placement area, as long as the dredged material is not contaminated (Newell et al., 1998).

The impact to benthic organisms would likely be confined to the immediate vicinity of the dredge footprint associated with the proposed PGEP (Newell et al., 1998), and the recovery of benthic macroinvertebrates following burial is typically rapid (recovering within months rather than years) (VanDerWal et al., 2011; Wilber et al., 2006; Wilber and Clarke, 2001); thus, no long-term impacts to benthic organisms are expected from the Proposed Project Alternative. Because of the constant re-creation of "new" habitat via disturbance, new recruits continually settle and grow, although communities are dominated by small, surface-dwelling organisms with rapid growth rates. Consequently, dredged material placement from the Proposed Project Alternative may result in a shift in community structure rather than a decrease in production (Bolam and Rees, 2003; Montagna et al., 1998). However, 196.5 acres of estuarine mud and sand bottom habitat would be permanently removed by filling. This area would not have the opportunity for benthic macroinvertebrate recovery.

Dissolved oxygen levels in deepened parts of the Turning Basin area would be measurably lower, and most of the time would remain lower than adjacent waters in the Project area. These hypoxic conditions may exclude some benthic organisms; however, the area would be very small and should not measurably affect ecological health in the Project area.

4.2.3 Estuarine Emergent Marsh and Seagrasses

No estuarine emergent marsh or seagrass habitat occurs within the Project area. Although these resources occur proximal to the Project area, they are present in small, isolated patches (see Figure 3). Most estuarine emergent marshes occur within the estuaries of Bay St. Louis or Biloxi Bay, outside the proposed Project area. One wetland was mapped in the National Wetlands Inventory (NWI) within the proposed Project area, which is 5.45 acres and identified as a persistently inundated intertidal emergent estuarine wetland. Historically, this area was a man-made stormwater retention pond that facilitated wetland vegetation growth over time. According to recent aerial imagery, this wetland feature was previously incorporated into a Port restoration area and no longer exists within the proposed Project area.

Since the Proposed Project Alternative would not be expected to significantly change water exchange and inflow patterns, impacts to adjacent emergent marsh and seagrass habitats are not expected. Thus, no impacts to EFH estuarine emergent marsh or seagrass habitat are anticipated with the Proposed Project Alternative.

4.2.4 Oyster Reef

No oyster reefs occur within the Project area or study area; therefore, no impacts are anticipated.

4.2.5 Artificial Reefs

Five nearshore artificial reefs are located within the Project area. Water column turbidity is expected to increase during proposed Project construction and associated maintenance dredging, although it would be temporary and motile organisms should avoid highly turbid areas (Clarke and Wilber, 2000; Wilber and Clarke, 2001; Newcombe and Jensen, 1996). Thus, no long-term impacts are expected to artificial reefs.

4.2.6 Potential Indirect Impacts to EFH

Potential indirect impacts from noise to the estuarine water column could potentially make fish susceptible to predation, disease, starvation, or affect an individual's ability to complete its life cycle. Behavioral changes resulting from underwater noise could cause fish to alter their movement and foraging patterns. The proposed Project may increase future ship traffic, thereby increasing the potential for accidental releases of exotic species into the local waters via ship ballast water and, to a lesser extent, within cargo, or from ship hulls. Ballast water impacts could introduce plant and animal organisms ranging in size from plankton to small fish. The indirect effect from the introduction of contaminated ballast water would be minimized with the USCG regulations that mandate ballast water exchange to reduce impacts from invasive/exotic species.

4.3 POTENTIAL IMPACTS TO FEDERALLY MANAGED SPECIES

The potential for adverse impacts to federally managed species within the Project area is likely to differ from species to species, depending upon life history, habitat use (demersal vs. pelagic), distribution, and abundance.

4.3.1 Direct Impacts

No estuarine emergent marshes or seagrass habitat occurs within the proposed Project area or Project footprint; therefore, none of these habitats would be directly impacted by the proposed Project. Dredged material is to be used beneficially within approved placement sites, such as the BMC.

The Proposed Project Alternative could temporarily reduce the quality of EFH in the vicinity of the Project area and some individual species may be displaced. This alternative would result in the permanent loss of 196.5 acres of shallow estuarine mud and sand bottom habitat to construct the proposed Project and permanent conversion of 85.5 acres to deeper habitat, thus reducing the amount of food available to federally managed species.

Since most fish can avoid highly turbid areas (Clarke and Wilber, 2000), they may temporarily relocate and feed in undisturbed areas until recovery is complete from dredging-related solids. Feeding habits of shrimp would not be impacted, since shrimp typically reside on or near the bottom where sedimentation naturally occurs (Wilber and Clark, 2001; Wilber et al., 2005).

Dredging, filling, and placement activities are not expected to cause direct mortality to juvenile and adult pelagic finfish, since these life history stages are motile and are capable of avoiding highly turbid areas associated with Project construction (Clarke and Wilber, 2000). Penaeid shrimp use deeper water of the bay as a staging area from which they migrate to the Gulf during certain times of the year (GMFMC, 2004). The displacement of juvenile and adult finfish and shrimp during Project construction would likely be temporary and individuals should return to these specific areas once the Project is completed. Juvenile and adult finfish and shrimp should experience minimal direct impacts from dredging and placement activities. Juvenile penaeid shrimp may be impacted due to their preference for burrowing in soft muddy areas, although these are usually in association with plant/water interfaces.

Demersal eggs and larval finfish may be lost to physical abrasion, burial, or suffocation during dredging and placement activities, because their mobility is limited and they are more sensitive to suspended sediments (Newcombe and Jensen, 1996; Wilber and Clark, 2001; Stern and Stickle, 1978; Germano and Cary, 2005; Wilber et al., 2005). Older life stages are generally more mobile and less sensitive to turbidity. Section 4.2 provides additional descriptions on impacts.

Federally managed species are not expected to be adversely affected by contaminants associated with dredged material that may be used for beneficial use. Section 4.2 provides an overview of sampling results from the Project area. With the exception of a limited number of elutriate samples, most parameters were either below detection limits or were within state and/or federal criteria for surface waters. However, the potential for contaminant impacts associated with spills (e.g., crude or refined oil) may increase because of higher port use associated with the Proposed Project Alternative. Impacts associated with spills are summarized in Section 4.2. Compared to adults, impacts to early life stages of federally managed species may be disproportionately affected due to their higher sensitivity and lower mobility.

In summary, the Proposed Project Alternative would result in the permanent loss of the estuarine water column and estuarine mud and sand bottom habitat. Some turbidity-related impacts, particularly to early life stages, would occur with dredging, filling, and placement activities; however, those impacts would be temporary and localized. Thus, there should not be substantial reductions in federally managed fish/shellfish populations. In most cases, affected species would return to the areas once dredging is completed. Dredged material is also to be used beneficially at approved placement sites, such as the BMC.

4.3.2 Indirect Impacts

Indirect impacts include a reduction in prey for federally managed species due to the mortality or displacement of benthic species, associated with dredging, placement, and filling activities. Since benthic organisms serve as prey for finfish, their mortality may temporarily reduce finfish feeding. With the exception of the permanent loss of 196.5 acres of estuarine mud and sand bottom habitat, disturbances to the benthic environment would be short lived and impacts would be minimal.

4.4 CUMULATIVE IMPACTS

A cumulative impacts assessment takes into consideration the impact on the environment, which results from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Impacts include both direct effects, which are caused by an action and occur at the same time and place as the proposed action, and indirect effects, which are also caused by the action and occur later in time and are farther removed in distance, but which are still reasonably foreseeable. Ecological effects refer to effects on natural resources and on the components, structures, and functioning of affected ecosystems, whether direct, indirect, or cumulative. A comprehensive cumulative impact assessment is presented in Section 5 of the EIS.

In summary, five projects were determined to be "reasonably foreseeable future actions" to occur in the vicinity of the Proposed Project Alternative. These projects include the Ward Investments Project, Maritime Commerce Center, Gulfport FNC Modification with Bend Easing, Mississippi Department of Transportation's I-310 Project, and the MsCIP Barrier Island Restoration Project (Ship Island and Cat Island) and all occur within the study area. Project details or potential impacts to the surrounding environment are not available for the Maritime Commerce Center. At this time, no other project details or potential impacts to the surrounding environment are available; thus, this project was not included in the cumulative impacts analysis.

In addition, the following projects or actions represent "past or present actions" relative to the study area:

- Maintenance Dredging (refer to Section 5.3.1 in the EIS for recent maintenance dredging activities)
- Beneficial Use Sites and ODMDS
- Gulfport Harbor Navigation Channel Widening Project
- Port of Gulfport Restoration Project (referred to as the "Port of Gulfport Restoration: 60-acre fill" and "Port of Gulfport Restoration 24-acre fill" in Table 7)
- KCS Rail Improvements Project
- City of Gulfport Small Craft Harbor Redevelopment
- Widening of the Pascagoula Lower Sound/Bayou Casotte Channel
- MsCIP Interim Near-Term Projects
  - Shearwater Bridge Erosion Control and Hurricane Storm Damage Reduction
  - Long Beach Canals
  - Harrison County Beaches Ecosystem Restoration and Hurricane Storm Damage Reduction
  - Courthouse Road Flood Damage Reduction and Ecosystem Restoration

- MsCIP Comprehensive Plan Projects
  - Coast-wide Beach and Dune Ecosystem Restoration
  - West Ship Island North Shore Restoration
  - Deer Island Ecosystem Restoration
  - Forrest Heights Levee Improvements
  - Turkey Creek Ecosystem Restoration
- CIAP Projects
  - Henderson Point Greenway
  - Blakeslee Preserve Habitat Restoration
  - Tchoutacabouffa River Greenway
  - Biloxi River Greenway
  - Harrison County Watershed Assessment and Restoration Projects
  - Oyster Bayou Restoration
  - Acquisition and Restoration of Flood-prone Properties for Green Space, Phases 1 and 2

Placement of dredged material at the Pascagoula ODMDS and possible BMC site represent "past or present actions," and occur just outside of the study area. These actions were not included individually in the resource tables because their impacts are generally limited to only a few resource areas; however, they are described and their impacts are included for applicable projects utilizing these locations and in the total column of resource tables. Projects that are deemed to have no effect on any listed species or have insufficient details to make a determination of the level of impact are not included in this cumulative effects analysis.

The primary concern associated with open-water habitats is increased turbidity, which occurs as a result of sediment release during dredging and construction activities. Turbidity in estuarine and coastal waters generally has complex implications for a range of organisms (Hirsch et al., 1978; Stern and Stickle, 1978; Wright, 1978; Wilber et al., 2005). Suspended material can both benefit and adversely impact aquatic communities. Increased turbidity can decrease light available for photosynthetic activity, reducing plankton production. Conversely, the decrease in primary production can be offset by an increase in nutrient primary productivity that is released into the water column during dredging activities when the water clears (Morton, 1977; Newell et al., 1998). The impacts to phytoplankton and algae from Project construction, dredging, and dredged material placement of new work and maintenance material would be temporary. Increased sedimentation would impact juvenile and adult finfish by disrupting foraging and feeding patterns; however, these impacts would also be temporary and short-term within the proposed Project area. While elevated turbidities will impact the adult stages of filter-feeding organisms (e.g., oysters and copepods) by clogging filtering mechanisms, impacts would be short-term and localized over the 50-year project life.

Considering past, present, and reasonably foreseeable future projects in the proposed Project area, impacts to benthic communities would generally be associated with dredging and placement activities. Those evaluated projects involving a modification (e.g., widening) of an existing navigational channel, such as the Proposed Widening of the Pascagoula Lower Sound/Bayou Casotte Channel and Gulfport Harbor Navigation Channel Widening Project, could result in the permanent conversion of shallow, primarily silty clay soft bottom, to a deeper hypoxic habitat. Bottom habitat at the Littoral Zone Disposal Area and open-water disposal areas would be buried during dredged material placement affecting benthic communities and oyster reefs; however, these sites are approved and active sites for maintenance dredging material placement. Buried organisms would be negatively impacted, but recolonization would occur.

Similarly, dredging operations have or would temporarily reduce the quality of EFH where present in the vicinity of any of the evaluated projects, such as the Proposed Widening of the Pascagoula Lower Sound/ Bayou Casotte Channel, which may temporarily reduce EFH quality. Some projects, such as the Gulfport Harbor Navigation Channel Widening Project, as detailed in Table 7, cause the permanent conversion of shallow, primarily silt and clay soft bottom habitats to deeper, hypoxic habitat, which reduces the functionality and ability of this natural community type to support aquatic species including federally managed fish/shellfish populations. While the overall cumulative conversion of estuarine mud and sand bottom habitat may be considered minor on a project-by-project basis and even collectively across all evaluated projects when compared to the entire 470,000-acre Mississippi Sound, of which approximately 452,000 acres is estuarine mud and sand bottoms, the habitat conversion represents a net loss of a more productive habitat (when compared with deeper, dredged channel bottom). Evaluated projects do not indicate impacts to seagrasses. Fish and shellfish species would temporarily shift feeding habitats during dredging operations to undisturbed areas until dredging and/or construction activities have been suspended and habitat recovery has occurred. Dredged material placement for any of the evaluated projects is not anticipated to cause long-term contamination problems for EFH based on available information.

An increase in throughput may result in a slight spill risk increase or introduction of an invasive species via ballast water, while expansion of the Turning Basin may lower the probability of spills; however, those probabilities are not quantified. As documented with the Deepwater Horizon oil rig explosion and oil spill, large spills, such as those from loaded ships, can have devastating impacts to aquatic communities. Smaller releases of crude oil or petroleum products impact shallow sessile or dermal organisms, birds and other coastal wildlife, and littoral habitats. Mobile organisms, such as fish and many shellfish generally avoid oil spills since the products generally float. However, releases of soluble products can have impacts to the entire water column. Due to the increased throughput and larger vessels/volumes, the risk of larger spills than under existing conditions is possible. However, the cumulative risk of these types of risk are not expected to be high based on the low frequency of incidents in the past (Anchor QEA LLC, 2015, see Appendix E of the EIS) and increased State and Federal focus on spill prevention and response over the past 20 years. Vessel traffic, as a result of implementing the evaluated projects and continued moderate economic growth, may increase the volume of ballast water

discharged into the Sound and the associated potential for release of invasive species. However, none of the evaluated projects anticipated increased vessel traffic. Although the Proposed Project Alternative would result in increased vessel traffic over time, USCG mandatory ballast water management protocols would be in place for all vessels; therefore, minimal cumulative impacts from ballast water and the introduction of invasive species is anticipated.

Past, present, and reasonably foreseeable future projects in the proposed Project area are unlikely to contribute long-term, adverse cumulative impacts to aquatic resources, as detailed in Table 7. Moreover, long-term beneficial cumulative impacts would result from MsCIP, MDMR CIAP projects, and other projects that aim to restore wetlands, watersheds, and barrier islands that affect circulation and aquatic ecology within the Mississippi Sound. The Proposed Project Alternative would permanently alter estuarine mud and sand bottom habitat by filling during construction and result in temporary and localized disturbances and impacts due to dredging and placement activities. If the BMC or other approved BU sites is used for beneficial disposal of dredged material, the Proposed Project Alternative would not contribute detrimental cumulative impacts to aquatic resources in the Project or surrounding areas.

Table 7
Cumulative Impacts to Essential Fish Habitat

Action	Essential Fish Habitat
Proposed Project Alternative	Loss of 196.5 acres of estuarine mud and sand bottoms and permanent conversion of 85.5 acres to deeper habitat; temporary and localized turbidity increases during project construction, dredging within the project area, and dredged material placement; removal of benthic community; burial of benthic organisms at fill and placement areas; positive benefit of dredged material to be used beneficially within the BMC
Ward Investments Project	N/A; however, would fill 383 acres of wetlands or floodplains with adverse impacts to aquatic ecology; mitigation for wetland impacts are required to offset impacts
Proposed Widening of the Pascagoula Lower Sound/Bayou Casotte Channel	Impacts to open-water communities as a result of increased turbidity during dredging localized around the immediate area of dredging and placement and limited to duration of the plume at a given site, but may temporarily impact localized primary production levels, finfish foraging, and distribution patterns, and filter feeder filtering rates; potential temporary reduction in quality of EFH and displacement of individual species; permanent conversion of 87.6 acres of shallow habitat to deeper habitat and temporary burial of benthic organisms in placement sites; no long-term effects on benthic organisms are expected due to motility, rapid recovery of benthic communities following temporary, short-term impacts in the immediate vicinity of the area dredged; no long-term turbidity impacts on artificial reefs are anticipated because of their distance from the proposed Project area
Gulfport Federal Navigation Channel Modification with Bend Easing Project	Loss of estuarine water column and estuarine mud and sand bottom could impact federally managed species through reduction of food availability. Dredging and placement activities may result in loss of demersal eggs and larval finfish. Slight reduction in probability of a petroleum spill due to increased vessel traffic safety.

Action	Essential Fish Habitat
Barrier Island Restoration (Ship Island and Cat Island)	Placement of approximately 22 mcy of sand in Camille Cut and replenishment of the southern shoreline of East Ship Island and beach-front placement of sand along the eastern shoreline of Cat Island; convert open water to beach habitat; temporary and localized minor impacts during placement activities
Coast-wide Beach and Dune Restoration	No impacts anticipated
West Ship Island North Shore Restoration	Positive ecological benefits
Deer Island Restoration	Restores diverse habitat to juvenile species; direct positive benefit via improved estuarine functions
Forrest Heights Levee Improvement	Slight degradation of existing biological resources due to enlarged footprint of levee; resources of Turkey Creek improved
Turkey Creek Ecosystem Restoration	Positive habitat benefits; improved water quality
CIAP Projects	Positive ecological benefits from preservation, conservation, and restoration activities
MDOT's I-310 Project	N/A; however, would fill 162.09 acres of wetlands, including hydric flatwoods, cypress/gum slough and emergent marsh of medium to high quality; fill would cause loss of habitat, injury or death of less mobile species and displacement of mobile species; adverse impacts would be offset by mitigation
KCS Rail Improvements Project	No impacts anticipated; project activities occurred within the existing KCS right-of-way, which has been developed and maintained since the early 1900s
Courthouse Road Flood Damage Reduction	Potential positive habitat benefits from marsh restoration (e.g., nursery areas for fishes, shellfish, and crustaceans)
Shearwater Bridge Storm Damage Reduction	Improved health from stabilization of the bridge abutments and shoreline armoring
Long Beach Canals	Temporary and localized displacement of fauna during construction; long-term benefits from increased circulation and tidal exchange (e.g., fish allowed to migrate upstream)
Harrison County Beaches Ecosystem Restoration and Hurricane Storm Damage Reduction	N/A
Port of Gulfport Restoration: 24-acre fill	Reduction of open-water habitat in the Mississippi Sound; the MSPA has taken steps to mitigate loss of open-water habitat by implementing a comprehensive mitigation plan that enhances estuarine habitat; temporary localized increase in turbidity during construction will cause minor impacts; mobile aquatic organisms would avoid project area during construction; permanent loss of 24 acres of Mississippi Sound; no long-term impacts to aquatic resources
Port of Gulfport Restoration: 60-acre fill	Negative impacts from loss of 60 acres of estuarine mud and sand bottom; impacts mitigated by estuarine benefits; no long-term impacts to aquatic resources; minor short-term impacts from increased turbidity
Gulfport Small Craft Harbor Redevelopment	Temporary impacts to immobile species and temporary adverse impacts on habitat quality due to turbidity during dredging
Maintenance Dredging	Temporary and minor adverse impact through disruption; nonmotile benthic fauna lost but should repopulate within several months; temporary displacement of motile species during operations

Action	Essential Fish Habitat
Gulfport Harbor Navigation Channel Widening Project	Short-term minor displacement and loss of infaunal and epifaunal benthic invertebrates, mollusks, and crustaceans, displacement of fish, and temporary and negligible impacts to foraging behavior and activity patterns of marine mammals during dredging and disposal activities with quick recovery; temporary adverse impacts to EFH in vicinity of dredging activities; beneficial impact to nearshore habitats through renourishment and protection from erosion with dredge material placement near Cat Island and the Chandeleur Islands
Qualitative Summary of Cumulative Impacts	Fill actions would have cumulative adverse impact of removing estuarine mud and sand bottoms and wetlands and burial of benthic organisms; dredging would result in conversion to deeper habitat, dredging and placement would result in temporary and localized turbidity increases, removal of benthic community, burial of benthic organisms at placement areas; most adverse impacts would be offset by mitigation and should not have a net cumulative adverse effect; cumulative increase in vessel traffic in the Project area would increase the risk of pollution; restoration, stabilization, protection, and beneficial use actions would have a cumulative beneficial effect on aquatic ecology

5.0 CONCLUSIONS

The federally managed species discussed in this EFH Assessment utilize the estuarine and Gulf habitat in and adjacent to the Project area during some portion of their life for spawning, food, development, and/or protection (GMFMC, 2004). The Proposed Project Alternative will have negative impacts, both directly and indirectly, to EFH in the Project area.

Dredging activities would temporarily affect EFH by disturbing bottom sediments and increasing turbidity in both the marine and estuarine waters column in the vicinity of dredging activity, which can have adverse effects on finfish and shellfish species. Dredging would also directly affect estuarine and Gulf bottom habitats. Considering the nature of the sediments that would be dredged and the temporary nature of dredging activities, these impacts should not be significant.

The proposed Project would result in the permanent loss of 196.5 acres of estuarine water column and estuarine mud and sand bottom habitat; however, the proposed impacts may affect, but are not likely to adversely affect EFH. There are no HAPCs designated in the Project area (NOAA, 2013). In addition, no EPA Special Aquatic Sites are located in the Project area.

The EIS served to initiate EFH consultation under the MSFCMA. Prior to Final EIS release to the public, this EFH Assessment will allow NMFS and GMFMC an opportunity to provide comments on EFH impacts.

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Appendix A

National Marine Fisheries Service Correspondence

UNITED STATES DEPARTMENT OF COMMERCE
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NATIONAL MARINE FISHERIES SERVICE

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May 11, 2010 F/SER46:MT

Colonel Byron G. Jorns
District Engineer, Mobile District
Regulatory Division
Department of the Army, Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Colonel Jorns:

NOAA's National Marine Fisheries Service, Southeast Region, Habitat Conservation Division (NMFS) has reviewed public notice number SAM-2009-01768-DMY dated April 16, 2010. The applicant, Mississippi State Port Authority (MSPA), has requested a Department of the Army permit to dredge approximately 332 acres for new channel and harbor expansion and fill 700 acres of open water benthic habitat to construct new port facilities in Mississippi Sound, Harrison County, Mississippi. This proposal includes placing 38,400,000 cubic yards of fill material, removing 17,260,000 cubic yard of dredge material, and completing the fill of 84 acres authorized in a permit issued in 1998. The U.S. Army Corps of Engineers, Mobile District (Corps) has initiated consultation for potential adverse impacts to essential fish habitat (EFH). As the nation's federal trustee for the conservation and management of marine, estuarine, and anadromous fishery resources, NMFS provides the following comments and recommendations pursuant to authorities of the Fish and Wildlife Coordination Act and the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

Project Area

Prior to 1991, the port facility occupied 286 acres in Mississippi Sound. In 1991, a 29-acre fill expansion was permitted (MS88-00954-L) for the purpose of accommodating existing and anticipated future container throughput for the next 50 years. In this configuration, the port covered 315 acres and supported break-bulk, bulk, container, commercial fishing, and gaming facilities (MSPA Gulfport Strategic Plan 1994). The permit issued in 1998 (MS96-02828-U) authorized filling of an additional 84 acres and dredging of 15 acres of Mississippi Sound for container and break-bulk handling and storage, and allowed relocation of the small craft harbor channel. The purpose of the 84-acre expansion was to provide rail interface for intermodal customers. This facility has not been constructed but remains a critical component of the 84-acre expansion. Sixty acres of the 84-acre fill are currently under construction and expected to be completed by November 2010. The remaining 24 acres will be filled shortly thereafter. When this area is filled, the MSPA property will occupy a total area of 399 acres of Mississippi Sound, a 26.6 percent increase over the 2005 footprint. The proposal now under consideration will

extend the port facility out into Mississippi Sound an additional 1.5 miles.

Impacts to Essential Fish Habitat
NMFS is concerned that filling an additional 616 acres of estuarine benthic habitat and water column and dredging an additional 332 acres of shallow estuarine bottoms to depths ranging from 32 to 36 feet, with perhaps a 4-foot over dredge allowance, would adversely impact EFH and other NMFS trust resources. The shallow unvegetated areas of Mississippi Sound are productive growth sites for macro- and microphytic algae, benthic diatoms, benthic dinoflagellates, polychaete worms, crustaceans, and mollusks (Livingston 1990). These benthic flora and fauna are important sources of food for a variety of fish and invertebrates that are of commercial, recreational, and ecological importance (Armstrong 1987). These habitats also provide essential forage, cover, spawning, and nursery areas for numerous commercially and recreationally important species (Christmas 1973). In addition to the direct impacts on fishery resources and habitats, on-site monitoring (MSPA Water Quality Monitoring Program 2001) has found that water quality within the small craft harbor and in the berthing area at West Pier is significantly degraded from May through September. Poor water quality conditions further impair the ecological value of project area habitats and their support of benthic and nektonic resources of Mississippi Sound.

Mississippi Sound is designated as EFH for the following federally managed species: red drum; Spanish mackerel; white, brown, and pink shrimp; Gulf stone crab; and several shark species. Categories of EFH that would be impacted by the project include sand and mud substrate and estuarine water column. Preliminary examination of the seasonal patterns of abundance suggests that at least one of the managed species is present in Mississippi Sound at all times of the year. Detailed information on federally managed fisheries and their EFH is provided in the 2005 Generic Amendment to the Fishery Management Plans for the Gulf of Mexico, prepared by the Gulf of Mexico Fishery Management Council (GMFMC). In addition to EFH designated for federally managed species, Mississippi Sound provides nursery and foraging habitats that support both forage and economically important marine fishery species such as black drum, spotted seatrout, southern flounder, gulf menhaden, bluefish, croaker, mullet, and blue crab. These estuarine-dependent organisms serve as prey for other fisheries managed under the Magnuson-Stevens Act by the GMFMC (e.g., mackerels, snappers, and groupers) and highly migratory species managed by NMFS (e.g., billfishes and sharks).

Compensatory mitigation
Within the sequential mitigation process, compensatory mitigation is proposed only after water-dependent projects have undergone an alternatives analysis that results in adequate avoidance and minimization of impacts. Evidence of such an analysis has not been provided to NMFS. As proposed, this project would likely require compensatory mitigation based on the resources present at this location. The public notice describes a conceptual approach for mitigation that would include coastal habitat restoration and enhancement, creation of nearshore reefs, deployment of derelict vessels within existing fish havens, enhancement of oyster reefs, management of coastal preserves, and acquisition of new properties for inclusion in the coastal preserve program.

This conceptual approach may constitute suitable mitigation options for such a project, but a

final determination would be based on the location and amount of acreage restored, protected, acquired or enhanced; likelihood of success, and the adequacy of contingency plans and adaptive management should mitigation measures fail to meet criteria for functionality.

Expanded EFH Consultation
The EFH provisions of the Magnuson-Stevens Act represent an integration of fishery management and habitat conservation by recognizing the dependence of healthy, productive fisheries on the availability of viable and diverse estuarine and marine ecosystems, with the goal of supporting the sustainable harvest of marine fisheries. Therefore, due to the size of the project and the nature and extent of probable direct and indirect impacts to EFH, NMFS requests that an expanded EFH consultation be conducted pursuant to 50 CFR Section 600.920(i).

As part of an expanded EFH consultation, NMFS recommends the Corps prepare an EFH assessment as described at 50 CFR 600.920(e). The EFH assessment must contain a description of the action; an analysis of the potential adverse effects of the action on EFH and the managed species; the federal agency's conclusions regarding the effects of the action on EFH, and proposed mitigation, if applicable. NMFS also recommends for this project the EFH assessment include additional information as appropriate, such as the results of an on-site inspection to evaluate the habitat and the site-specific effects of the project; the views of recognized experts on the habitat or species that may be affected; a review of pertinent literature and related information; an analysis of alternatives to the action, including alternatives that could avoid or minimize adverse effects on EFH.

Aquatic Resources of National Importance
Several of the marine resources identified herein that could be adversely affected by the project are considered to be of national economic importance pursuant to Section 906(e)(1) of the Water Resources Development Act of 1986 and, therefore, are designated as aquatic resources of national importance (ARNI). In accordance with Part IV, Section 3(a) of the Memorandum of Agreement between the Departments of Commerce and Army regarding Section 404(q) of the Clean Water Act, NMFS finds that placing an additional 616 acres of fill material and dredging of approximately 332 acres in Mississippi Sound may result in substantial and unacceptable impacts to ARNI.

Due to the scope of this project, an environmental impact statement (EIS) should be produced to analyze the potential impacts of the project as proposed and to present a set of feasible alternatives. An EIS should evaluate various construction alternatives beyond the 399-acre footprint as well as the no action alternative. Studies should be performed to characterize existing benthic communities within the areas to be dredged and filled, the adjacent areas and those within the existing channel and basin. Such studies would facilitate a comparative assessment of impacts and would assist in determining mitigation needs and options, if appropriate. In addition to habitat loss from the proposed expansion, water quality impacts must be thoroughly assessed. The 1998 permit incorporated mitigation measures to improve water quality in and around the port, but it is uncertain if these measures have been or are now being performed. An analysis of the results of the 1998 mitigation measures should be included in the EIS. A detailed plan addressing mitigation for unavoidable impacts should be provided.

In consideration of the significant direct impacts to estuarine habitats of Mississippi Sound, the probable indirect and cumulative impacts, the lack of information and analysis available at this time, and the need to ensure the conservation of EFH and dependent fishery resources, NMFS provides the following:

EFH Conservation Recommendations

1. The permit for filling 616 acres and excavating 332 acres of estuarine habitat in Mississippi Sound, as currently proposed, shall be denied.

2. Further consideration of any port expansion should require a thorough analysis of less environmentally damaging practicable alternatives and suitable mitigation options accomplished through the preparation of an EIS.

Please be advised the Magnuson-Stevens Act and the regulation to implement the EFH provisions (50 CFR Section 600.920) require the Corps to provide a written response to this letter. That response must be provided within 30 days and at least 10 days prior to final agency action. A preliminary response is acceptable if final action cannot be completed within 30 days. The Corps' final response must include a description of measures to be required to avoid, minimize, mitigate, or offset the adverse impacts of the activity. If the Corps' response is inconsistent with these EFH conservation recommendations, the Corps must provide an explanation of the reasons for not implementing those recommendations.

In addition, the project area lies within the known distribution and critical habitat of a federally listed species under the purview of NMFS. In accordance with the Endangered Species Act of 1973, as amended, the Corps' must review this proposal and determine whether the actions proposed may affect endangered or threatened species. Actions that may affect listed species should be reported to our Protected Resources Division at the letterhead address. If the Corps determines that the proposed activities may adversely affect any listed species, or destroy or adversely modify designated critical habitat, formal consultation must be initiated.

NMFS looks forward to working with the Corps in preparing the EIS and addressing these concerns. Please contact Mark Thompson of our Panama City Office at 904/234-5061 with questions regarding this EFH consultation.

Sincerely,

Miles M. Croom

Miles M. Croom
Assistant Regional Administrator
Habitat Conservation Division

cc:
F/SER4
F/SER3
F/SER - Keys
cc: email
EPA Atlanta
FWS Jackson
MS DMR Biloxi
MS DEQ Jackson
GMFMC
GSMFC

NMFS - B Letter

UNITED STATES DEPARTMENT OF COMMERCE
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JUN 03 2010 F/SER46:MT

RECEIVED
JUN 10

Colonel Byron G. Jorns
District Engineer, Mobile District
Regulatory Division
Department of the Army, Corps of Engineers
P.O. Box 2288
Mobile, Alabama 36628-0001

Dear Colonel Jorns:

This letter is in reference to the Department of the Army public notice number SAM-2009-01768-DMY dated April 16, 2010. The applicant, Mississippi State Port Authority (MSPA), has requested a Department of the Army permit to dredge approximately 332 acres for new channel and harbor expansion and fill 700 acres of open water benthic habitat to construct new port facilities in Mississippi Sound, Harrison County, Mississippi.

The NOAA's National Marine Fisheries Service (NMFS) has determined the direct impacts to over 1,000 acres of productive fishery habitat in Mississippi Sound represent significant and unacceptable adverse threats to essential fish habitat and other living marine resources of national economic importance: By letter dated May 11, 2010 (copy enclosed), NMFS recommended Department of the Army authorization not be granted for the project as proposed and an environmental impact statement be prepared for the project. This recommendation is based on the significant direct impacts to essential fish habitat, aquatic resources of national importance, and the supporting food webs of Mississippi Sound, as well as the potential adverse impacts to water quality in Mississippi Sound. NMFS also remains concerned by the lack of detailed information provided thus far to support a thorough project impact analysis and develop a mitigation plan for unavoidable impacts to NMFS trust resources.

Pursuant to Part IV.3(b) of the 1992 Clean Water Act 404(q) Memorandum of Agreement between the Department of Commerce and the Department of the Army, I have reviewed the findings of my staff and determined the proposed work would substantially and unacceptably impact aquatic resources of national importance as well as essential fish habitat and associated living marine resources. I request the Corps of Engineers fully consider the views and recommendations of NMFS in making a final decision concerning authorization of the proposed work. I also encourage continued efforts to resolve this matter at the field level and have requested my staff to continue cooperating in any related effort to this end.

RECEIVED
JUN 10 2010
By

Thank you for your consideration of NMFS' recommendations. Should you have any questions, please contact Mr. Mark Thompson at (850) 234-5061.

Sincerely,

Roy E. Crabtree, Ph.D.
Regional Administrator

Enclosure

cc: F/SER4
F/SER46
GMFMC

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Appendix J

Biological Assessment

Document No. 130129
Job No. 100018536

DRAFT
BIOLOGICAL ASSESSMENT FOR THE PROPOSED PORT OF GULFPORT EXPANSION PROJECT HARRISON COUNTY, MISSISSIPPI

Prepared for:

U.S. Army Corps of Engineers
Mobile District
109 St. Joseph Street
Mobile, Alabama 36602-3630

October 2015

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Acronyms and Abbreviations

°F	degrees Fahrenheit
AOU	American Ornithologist's Union
BA	Biological Assessment
BMC	Biloxi Marsh Complex – Northeastern Outlying Islands
BO	Biological Opinion
BU	beneficial use
BUG	Beneficial Use Group
CFR	Code of Federal Regulation
CIAP	Coastal Impact Assistance Program
cSEL	cumulative sound exposure level
cy	cubic yards
dB	decibels
dBA	A-weighted decibels
DMMP	Dredged Material Management Plan
DO	dissolved oxygen
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ERDC	Engineer Research and Development Center
ESA	Endangered Species Act
ESCA	Endangered Species Conservation Act
FHWG	Fisheries Hydroacoustic Working Group
FNC	Federal Navigation Channel
FR	Federal Register
GRBO	Gulf of Mexico Regional Biological Opinion
Gulf	Gulf of Mexico
IMMS	Institute for Marine Mammal Studies
KCS	Kansas City Southern
mcy	million cubic yards
MBTA	Migratory Bird Treaty Act
MDMR	Mississippi Department of Marine Resources
MDWFP	Mississippi Department of Wildlife, Fisheries and Parks
mg/L	milligrams per liter
MLLW	mean lower low water
MMNS	Mississippi Museum of Natural Sciences
MMPA	Marine Mammal Protection Act
MPRSA	Marine Protection, Research, and Sanctuaries Act
MsCIP	Mississippi Coastal Improvements Program

msl	mean sea level
MSPA	Mississippi State Port Authority
NFWL	National Fish and Wildlife Laboratory
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
NPS	National Park Service
ODMDS	Ocean Dredged Material Disposal Site
PCE	primary constituent elements
PGEP	Port of Gulfport Expansion Project
RMG	rail-mounted gantry crane
RMS	root mean square
STSSN	Sea Turtle Stranding and Salvage Network
TED	turtle excluder device
TEU	Twenty-foot Equivalent Unit
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

1.0 INTRODUCTION

1.1 PURPOSE OF THE BIOLOGICAL ASSESSMENT

This Biological Assessment (BA) was prepared to fulfill the U.S. Army Corps of Engineers (USACE), Mobile District requirements as outlined under Section 7(c) of the Endangered Species Act (ESA) of 1973, as amended. The proposed action requiring this assessment is the expansion of the Port of Gulfport in Harrison County, Mississippi, referred to as the Port of Gulfport Expansion Project (PGEP). To more accurately describe potential impacts associated with the PGEP or Project, both a study area and Project area have been defined. The study area encompasses a 10.5-mile radius that includes Harrison County, the southeastern edge of Hancock County and the southwestern tip of Jackson County, and continues into the Gulf of Mexico (Gulf) approximately 2 miles south of the barrier islands, including Cat Island, East Ship Island, and West Ship Island (Figure 1). The Project area is defined as the areas where actual dredge and fill activities would take place, and provides spatial boundaries for evaluation of resources that may be more-directly impacted by the construction and operation of the proposed Project, and is therefore a smaller area. Specifically, the Project area surrounding the Port is defined as the Project footprint with a 5,000-foot buffer (Figure 2). Additionally, disposal areas for new work dredged material would include the Biloxi Marsh Complex (BMC) and the Pascagoula Ocean Dredged Material Disposal Site (ODMDS) (Figure 1), located outside of the proposed Project area, as discussed in Section 1.2; maintenance dredged material would be disposed of as discussed in the Dredged Material Management Plan (DMMP) (Anchor QEA LLC, 2015a, Appendix E of the EIS). The DMMP was prepared by Anchor QEA LLC (2015a) to evaluate potential placement options for the new work and maintenance dredged material associated with the proposed Project. Material not suitable for disposal at the Pascagoula ODMDS would be designated for disposal at a permitted and approved upland disposal site(s). This BA evaluates the potential impacts the proposed PGEP may have on federally listed threatened and endangered species identified by the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS).

The NMFS and USFWS websites were referenced to determine species protected under the ESA with the potential to occur in the Project area that should be included in this BA. The NMFS website identified 11 species: Gulf sturgeon (*Acipenser oxyrinchus desotoi*), green sea turtle (*Chelonia mydas*), hawksbill sea turtle (*Eretmochelys imbricata*), Kemp's ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), humpback whale (*Megaptera novaengliae*), sei whale (*Balaenoptera borealis*), and sperm whale (*Physeter macrocephalus*). The five whale species receive additional protection under the Marine Mammal Protection Act (MMPA) (NMFS, 2013a). The USFWS website identified several of the same marine species and the following additional nine species with the potential to occur in the Project area: rufa red knot (*Calidris canutus*), piping plover (*Charadrius melodus*), red-cockaded woodpecker (*Picoides borealis*), Louisiana black bear (*Ursus americanus luteolus*), dusky gopher frog (*Rana sevosa*), Alabama red-bellied turtle (*Psuedemys alabamensis*), gopher tortoise





0 6 Miles

Study Area

Piping Plover Critical Habitat

Gulf Sturgeon Critical Habitat

Biloxi Marsh Complex

Pascagoula Ocean Dredged Material Disposal SIte (ODMDS)

Figure 1

Port of Gulfport Expansion Project

Critical Habitat in the Study Area

Prepared By: 19910	Scale: 1" = 6 miles
Job No.: 100018536	Date: Sept. 21, 2015

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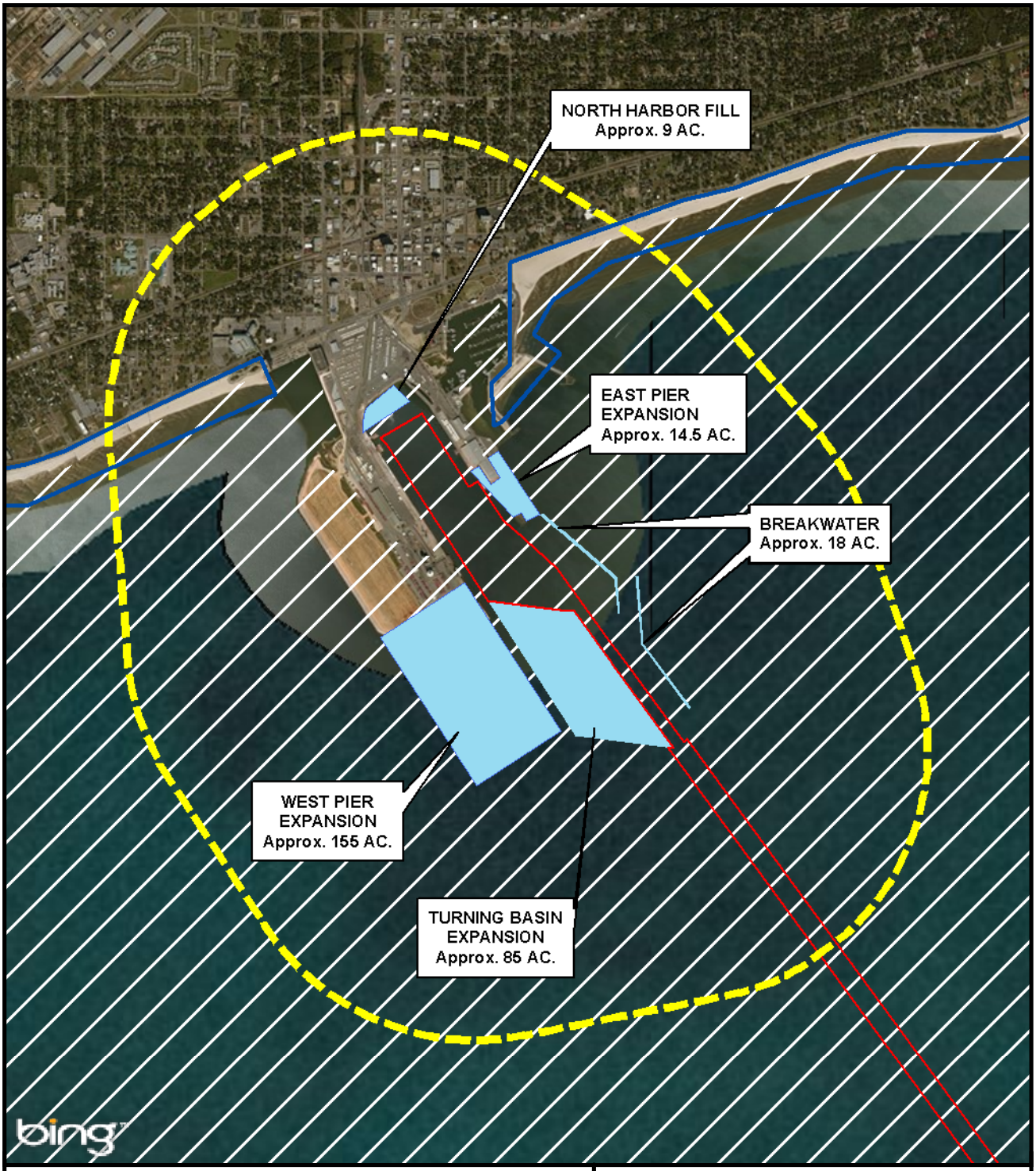



Project Area

Proposed Project Features

Piping Plover Critical Habitat

Gulf Sturgeon Critical Habitat

Gulfport Harbor Federal Navigation Channel (FNC)

0 3,000 Feet

Figure 2

Port of Gulfport Expansion Project

Critical Habitat in the Project Area

Prepared By: 13188	Scale: 1" = 3000'
Job No.: 100018536	Date: Sept. 21, 2015

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(*Gopherus polyphemus*), West Indian manatee (*Trichechus manatus*), and Louisiana quillwort (*Isoetes louisianesis*). Critical habitat for the Gulf sturgeon and piping plover are also addressed.

Additional state-protected species are listed by the Mississippi Department of Wildlife, Fisheries and Parks (MDWFP) as potentially occurring in Harrison County: black pine snake (*Pituophis melanoleucus lodingi*), eastern indigo snake (*Drymarchon couperi),* brown pelican (*Pelecanus occidentalis*), Mississippi sandhill crane (*Grus canadensis*), Crystal Darter (*Crystallaria asprella*), Ironcolor Shiner (*Notropis chalybaeus*) (Mississippi Museum of Natural Sciences [MMNS], 2011). Federally listed species that are non-marine and state listed species not specifically listed by the jurisdictional Federal agencies (NMFS and USFWS) are not addressed in this BA, because they are not likely to occur in the Project area.

Recently removed from the Federal list of threatened and endangered species, the American peregrine falcon, Arctic peregrine falcon, brown pelican, and bald eagle are protected under the Migratory Bird Treaty Act (MBTA), and the bald eagle continues to receive additional protection under the Bald and Golden Eagle Protection Act (64 *Federal Register* [FR] 164:46542–46558; 72 FR 130:37346–37372); however, these bird species are not included in this BA, as they are no longer protected under the ESA. Table 1 presents a list of the 14 federally listed threatened and endangered species that are addressed in this BA.

This BA also describes the avoidance, minimization, and conservation measures proposed for this Project relative to habitat and species covered in the BA. This BA is offered to assist the USFWS and NMFS personnel in fulfilling their obligations under the ESA. An Environmental Impact Statement (EIS) has been prepared to further address the potential effects resulting from the proposed Project.

Table 1
Federally Listed Threatened and Endangered Species Discussed

Common Name[1]	Scientific Name[1]	Status	
		USFWS	NMFS
FISH			
Gulf Sturgeon	*Acipenser oxyrinchus desotoi*	T	T w/CH
REPTILES			
Green sea turtle	*Chelonia mydas*	T	T
Hawksbill sea turtle	*Eretmochelys imbricata*	E	E
Kemp's ridley sea turtle	*Lepidochelys kempii*	E	E
Leatherback sea turtle	*Dermochelys coriacea*	E	E
Loggerhead sea turtle	*Caretta caretta*	T	T
BIRDS			
Piping plover	*Charadrius melodus*	T w/CH	N/A
Rufa Red knot	*Calidris canutus*	T	N/A
MAMMALS			
Blue whale	*Balaenoptera musculus*		E
Fin whale	*Balaenoptera physalus*		E
Humpback whale	*Megaptera novaengliae*		E
Sei whale	*Balaenoptera borealis*		E
Sperm whale	*Physeter macrocephalus*		E
West Indian manatee	*Trichechus manatus*	E	E

[1] Nomenclature follows American Ornithologist's Union (AOU, 1998, 2000, 2002–2013), Crother et al. (2008), USFWS (2013), and NMFS (2013b–f).

E – Endangered; T – Threatened; w/CH – with designated Critical Habitat;
N/A – Status Not Applicable for that Agency.

1.2 PROPOSED PROJECT ALTERNATIVE

The proposed PGEP involves the dredging and filling of approximately 282 acres of estuarine mud and sand bottom habitat in Mississippi Sound for the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, expanded turning basin, and construction of a 4,000-linear-foot breakwater, and the placement of new work and maintenance dredged material (refer to Table 2). The expansion and modification of the Port facility under the Proposed Project Alternative would be configured and automated as described below. The main features of this alternative include:

- Expansion of the West Pier
- Expansion of the East Pier
- Fill in the North Harbor
- Expansion of the federally authorized Turning Basin (at 36-foot depth)

- An eastern breakwater
- Placement of dredged material
- Site configuration and automation

Table 2
Proposed Project Alternative, Direct Impact Estimates

Feature	Estimated Acreage Impact (acres)	Estimated Dredged Material Volume (mcy)
West Pier Expansion	155	2.40
East Pier Expansion	15	0.56
North Harbor Expansion	9	0.84
Breakwater	18	0
Turning Basin Expansion	85	3.70
Totals	282	7.5*

*560,000 cubic yards (cy) of dredged material is designated for upland disposal.
mcy = million cubic yards

The Proposed Project Alternative assumes that the Restoration Project has been completed. The Restoration Project (or 84-acre project) consists of restoring 60 acres destroyed by Hurricane Katrina and filling 24 acres on the west side of the West Pier thereby completing the 84-acre project, as originally permitted in 1998 (see Section 1.3.1 in the EIS). The proposed PGEP features would be added to the post-Restoration Project footprint, with a few exceptions as discussed below (Table 3).

The proposed expansion features (not including the post-Restoration Project footprint) would be elevated to up to +25 feet msl to provide protection against future tropical storm surge events. The post-Restoration Project footprint would be elevated to up to +14 feet msl, with the proposed expansion footprint elevated to up to +25 feet msl. Each feature of the proposed expansion footprint is provided in Table 3. Fill material would be obtained from sites located in coastal counties of Mississippi or from sources along the Tennessee-Tombigbee River.

West Pier Expansion

The West Pier Expansion is intended for development of a new concession area consisting of new, multiuse semi-automated container terminals. The proposed concession area would extend to the south of the West Pier footprint approximately 3,600 linear feet, adding approximately 155 acres to the existing facility. Prior to construction, the expansion footprint may require dredging for removal of soft to very soft foundation materials and to mitigate mud waves outside of the project footprint. The estimated volume of dredged material is 2.4 mcy (Anchor QEA LLC, 2015a).

Table 3
Port Footprint Following Proposed PGEP,
Including the Turning Basin Area (Acres)

Feature	Post-Restoration Footprint	Proposed Expansion Footprint	Total Footprint
West Pier	171	155	326
East Pier	30	14.5	44.5
North Harbor	63	9	72
Turning Basin	105	85	190
Breakwater	N/A	18	18
Total Footprint	369	281.5	650.5

East Pier Expansion

The East Pier Expansion would add approximately 14.5 acres to the working surface of the Port's existing East Pier facility. This area would be used for rail operations and a new berth, and would provide additional space for McDermott. Similar to the West Pier Expansion, this area may require dredging prior to construction. The estimated volume of dredged material is 560,000 cy, which is generally debris that would be disposed of in permitted and approved upland disposal areas. In addition, future maintenance dredging associated with the East Pier would require removal of approximately 63,000 to 172,000 cy of material every year.

North Harbor Expansion

The North Harbor Expansion would create approximately 9 acres of upland in the area formerly occupied by the *Copa Casino* boat. This upland area would be used as a new berthing area. Both new work dredging associated with the construction of this berth and future maintenance dredging would be required in this area (Anchor QEA LLC, 2015a). The estimated volume of new work dredged material is 845,000 cy, with an estimated future maintenance dredging volume between 39,000 and 581,000 cy every year.

Turning Basin Expansion

The existing Gulfport Turning Basin would be expanded to support the West Pier Expansion. The proposed Turning Basin Expansion (approximately 85 acres) would be between the existing Sound Channel and the proposed terminal, immediately adjacent to the Gulfport Turning Basin. This area would be dredged to a depth of –36-foot mean lower low water (MLLW) plus 2 feet of advance maintenance, plus 2 feet of allowable overdepth, and up to an additional 3 feet due to a sediment disturbance layer consistent with the adjacent FNC and USACE maintenance dredging practices (Anchor QEA LLC, 2015a, Appendix E of the EIS). The estimated volume of new work dredged material is 3.7 mcy, with an estimated future maintenance dredging volume of between 211,000 and 586,000 cy every year.

Eastern Breakwater

A 4,000-linear-foot rip-rap breakwater is proposed on the eastern side of the FNC to provide protection from tropical storm events. The breakwater would vary from 98 to 102 feet wide at its base with a top width of 10 feet and a top elevation of +10 feet NAVD 88. The proposed breakwater would require placing approximately 250,000 cy of rip-rap over a footprint of approximately 18 acres. Baker (2011) evaluated four breakwater alternatives for the PGEP to determine the need to protect the expanded West Pier under storm conditions. Numerical modeling was used to recommend alternatives that would provide protection to the turning basin and terminals while maintaining operational and navigational utility. Modeling indicated that wave action would impact the expanded West Pier compared with current conditions and a need for a breakwater could not be ruled out. The Proposed Project Alternative provides protection from wave energy from the south and east. A breach midway along the alignment of the structure is planned to allow shallow-draft access to the FNC from the adjacent Bert Jones Marina and at the recommendation of the pilots performing ship simulations.

Dredged Material Placement

The new work dredging associated with the construction of the proposed West Pier and East Pier expansions, North Harbor and West Pier berthing areas, and the Turning Basin expansion is estimated to require removal of approximately 7.5 mcy of dredged material, including 560,000 cy of dredged material (debris from East Pier) that would be designated for upland disposal. Following construction of the Turning Basin Expansion, the Mississippi State Port Authority (MSPA) would be responsible for maintenance dredging of the portion of the new turning basin that is not part of the federally authorized project, as well as the berthing areas associated with the expanded East Pier, North Harbor, and West Pier. Maintenance dredging associated with these areas is anticipated to require removal of approximately 313,000 cy to 1.3 mcy every year. A DMMP was prepared to evaluate potential placement options for the new work and maintenance dredged material associated with this Proposed Project Alternative (Anchor QEA LLC, 2015a, Appendix E of the EIS). Estimated dredged material quantities are shown in Table 4. Estimated dredge quantities assume maintenance for a 30-year period. At this time, it is expected that new work dredging would occur using mechanical/hopper dredge and maintenance dredging would occur using hydraulic/cutterhead or mechanical/hopper dredges, as necessary.

The DMMP evaluated multiple placement alternatives for new work and maintenance dredged material. Sites considered for placement of dredged material included:

- Use as fill for the West Pier Expansion
- 12 designated Beneficial Use (BU) sites
- Thin layer placement
- Candidate BU sites
- Placement in an approved ODMDS

Table 4
Estimated Dredge Material Quantities (Proposed Project Alternative)

Feature	West Pier Expansion	East Pier Expansion	North Harbor and West Pier Berthing Areas	Turning Basin Expansion	Total
New Work	2.4 mcy		845,000 cy	3.7 mcy	6.94 mcy
New Work (upland disposal)		560,000 cy			560,000 cy
Maintenance	N/A	63,000 – 172,000 cy/year	39,000–581,000 cy/ year	211,000–586,000 cy/year	313,000–1.3 mcy/year

Source: Anchor QEA LLC (2015a)
cy – cubic yards
mcy – million cubic yards

All sites were evaluated based on feasibility, potential environmental impacts, cost, and suitability of material. Potential BU sites were evaluated based on capacity and distance to the dredge site, taking into consideration habitat value, stability, and sediment transport. Recommendations were made for each option (Anchor QEA LLC, 2015a, Appendix E of the EIS). Considering additional information is needed to finalize the recommendations of dredged material placement alternatives, the following summarizes the various placement options.

New work dredged material structurally suitable would be used for fill at the Project site. Any material not structurally suitable would be evaluated for potential beneficial use and possible placement at a designated or candidate BU site. The Mississippi Department of Marine Resources (MDMR) is pursuing a permit to designate an area in the Biloxi Marsh Complex (BMC) in Louisiana for beneficial use of dredged material. The goal of this designation is to provide a new BU site on the western side of the state to accommodate material generated from private and public dredging projects to meet the requirements of Mississippi's beneficial use law.

During the DMMP evaluation, the Port began discussions with the MDMR/USACE Beneficial Use Group (BUG) on using the BMC as a placement area for suitable dredged material from the Port (see Figure 1). For the proposed PGEP, the BUG was in favor of a BU site instead of an ODMDS. As such, the BMC is the recommended placement alternative for the new work dredged material for the proposed Project (Anchor QEA LLC, 2015a, Appendix E of the EIS). If a suitable site is identified, appropriate coordination would occur in the future. The BMC BU site would function to provide needed particulate material for shoreline nourishment and as protection from shoreline erosion on the Mississippi and Louisiana coasts. If the BMC is not permitted prior to dredging, and no other suitable BU sites are available, the Pascagoula ODMDS (see Figure 1) would be used for disposal of new work dredged material if the material is determined to be in compliance with Section 103 of the MPRSA (33 USC 1413). New work, dredged material not suitable for beneficial use would also be placed in the Pascagoula ODMDS if it meets the criteria in Section 103 of the MPRSA. If the dredged material is not suitable for

the ODMDS, the material would be placed in an approved and permitted upland disposal site(s).The Port would be responsible for maintenance dredging of those areas outside of Federal jurisdiction. Maintenance dredged material will be disposed of as discussed in the DMMP (Anchor QEA LLC, 2015a, Appendix E of the EIS).

Site Configuration/Automation

The PGEP would further develop the Port into a semi-automated container terminal. The Port has added three rail-mounted gantry (RMG) cranes to Port operations. The road and rail access constructed for the Restoration Project would be extended south on the western side of the West Pier along the expansion footprint. The gantry crane rail would be extended south on the eastern side of the West Pier along the expansion footprint. New infrastructure would include a new wharf, backlands, gates, and an additional warehouse. The new terminal would increase throughput by reducing handling times, allowing ships to come into the Port, unload, reload, and depart in a day or less. The proposed layout assumes that all berths would be utilized as common berths, and the berthing of a vessel would be based on berth availability, vessel schedule, and tenant needs. With the semi-automated operation of the container terminal via RMG cranes, refrigerated containers would be grounded within the RMG container blocks and placed four containers high and nine containers wide per row. This layout would require three-story steel platforms in front of each row for mechanics to access containers, plug into reefer receptacles, and perform monitoring, inspection, and pretripping of refrigerated equipment. Loading and unloading of containers would be performed by utilizing the two RMGs to transfer containers between trackside ground positions and railcar well positions. The operation of the West Pier and the Turning Basin Expansion areas would include shared facilities, berths, backlands, and utilization of RMG cranes. With this layout, throughput capacity is projected to reach up to 1.7 million TEUs annually by 2060.

2.0 STATUS OF THE LISTED SPECIES

To assess the potential impacts of the proposed Project on federally listed threatened and endangered species within the Project area, the USACE, Regulatory Division: (1) reviewed the online list of species from the NMFS and USFWS database to include in this BA; (2) reviewed available NMFS and USFWS literature, and other scientific data to determine species distributions, habitat needs, and other biological requirements; and (3) conducted an onsite evaluation, where feasible, of the biological resources within the Project area.

Literature sources consulted for this report include the USFWS series on endangered species of the seacoast of the U.S. (National Fish and Wildlife Laboratory [NFWL], 1980), Federal species status reports and recovery plans, peer-reviewed journals, and other standard references, such as agency websites. Habitat assessments were initially based on aerial photography. Input was also solicited from state and Federal resource agency personnel.

Species identified by the online list of the USFWS and NMFS sites for this BA are listed in Table 1 (Section 1.1). The following sections present the natural history of each considered species relevant to its potential occurrence in the broader study area. Section 3.0 presents the potential of the proposed action to affect these species.

2.1 GULF STURGEON

The Gulf sturgeon is a primitive anadromous fish, which means it breeds in freshwater after migrating up rivers from marine and estuarine environments. It is identified by its bony plates or scutes and is nearly cylindrical in form. The head ends in a hard, extended snout; the mouth is inferior and protrusible and is preceded by four conspicuous barbels. The tail (caudal fin) is distinctly asymmetrical, the upper lobe is longer than the lower lobe (heterocercal). Adults range from 4 to 8 feet in length, with adult females larger than males (50 Code of Federal Regulations [CFR] Part 226). In the late 19th century and early twentieth century, the Gulf sturgeon supported commercial fisheries, and was harvested for caviar, flesh for smoked fish, and other products. Overfishing of the species caused its numbers to decline throughout most of the 20th century. Habitat loss associated with the construction of in-water structures, such as dams and sills, also resulted in declining population numbers (50 CFR Part 226).

The Gulf sturgeon was listed on September 30, 1991, by the USFWS, as a threatened species under the ESA (16 United States Code [USC] 1531 et seq.) (56 FR 49653). The 1991 listing identified other potential threats that included modifications to habitat associated with dredged material disposal, desnagging (removal of trees and their roots), and other navigation maintenance activities; incidental take by commercial fishermen; poor water quality associated with contamination by pesticides, heavy metals, and industrial contaminants; aquaculture and incidental or accidental introductions; and the Gulf sturgeon's slow growth and late maturation (50 CFR Part 226). The Gulf Sturgeon Recovery/ Management Plan (USFWS et al., 1995) provides more information on the species decline and threats.

Critical habitat is a term used in the ESA to refer to specific geographic areas that are essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat was designated for the federally threatened Gulf sturgeon on March 19, 2003 (68 FR 13369 13495). There are 14 Designated Critical Habitat units for the Gulf sturgeon. The proposed Project area is located in Gulf sturgeon Critical Habitat Unit 8, which includes the following description (50 CFR Part 226):

The Mississippi Sound includes adjacent open bays including Pascagoula Bay, Point aux Chenes Bay, Grand Bay, Sandy Bay, and barrier island passes, including Ship Island Pass, Dog Keys Pass, Horn Island Pass, and Petit Bois Pass. The northern boundary of the Mississippi Sound is the shorelines of the mainland between Heron Bay Point, Mississippi and Point aux Pins, Alabama. Critical habitat excludes St. Louis Bay, north of the railroad bridge across its mouth; Biloxi Bay, north of the U.S. Highway 90 bridge; and Back Bay of Biloxi.

The primary constituent elements (PCEs) essential for the conservation of Gulf sturgeon are those habitat components that support feeding, resting, and sheltering, reproduction, migration, and physical features necessary for maintaining the natural processes that support these habitat components. Impacts to these PCEs are discussed in Section 4.19.2.

The PCEs for Gulf sturgeon include:

1. Abundant prey items within riverine habitats for larval and juvenile life stages, and within estuarine and marine habitats and substrates for juvenile, subadult, and adult life stages;
2. Riverine spawning sites with substrates suitable for egg deposition and development, such as limestone outcrops and cut limestone banks, bedrock, large gravel or cobble beds, marl, soapstone or hard clay;
3. Riverine aggregation areas, also referred to as resting, holding, and staging areas, used by adult, subadult, and/or juveniles, generally, but not always, located in holes below normal riverbed depths, believed necessary for minimizing energy expenditures during fresh water residency and possibly for osmoregulatory functions;
4. A flow regime (i.e., the magnitude, frequency, duration, seasonality, and rate-of-change of fresh water discharge over time) necessary for normal behavior, growth, and survival of all life stages in the riverine environment, including migration, breeding site selection, courtship, egg fertilization, resting, and staging; and necessary for maintaining spawning sites in suitable condition for egg attachment, egg sheltering, resting, and larvae staging;
5. Water quality, including temperature, salinity, pH, hardness, turbidity, oxygen content, and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages;
6. Sediment quality, including texture and other chemical characteristics, necessary for normal behavior, growth, and viability of all life stages; and

7. Safe and unobstructed migratory pathways necessary for passage within and between riverine, estuarine, and marine habitats (e.g., a river unobstructed by any permanent structure, or a dammed river that still allows for passage).

Gulf sturgeon is under the joint jurisdiction of the USFWS and NMFS. The USFWS maintains primary responsibility for recovery actions, and NMFS assists in and continues to fund recovery actions pertaining to estuarine and marine habitats. The USFWS is responsible for all critical habitat consultations in riverine units. Responsibility for the estuarine units has been divided based on the action agency involved. The NMFS is responsible for all consultations regarding Gulf sturgeon and critical habitat in marine units. The NMFS has jurisdiction over the Gulf sturgeon for this Project based on the nexus with the USACE and the location of critical habitat units involving the proposed Project within marine units.

2.1.1 Habitat

A benthic habitat assessment of the proposed Project area and study area was conducted in 2012 (see Appendix G of the EIS). Results showed that similar habitat characteristics occur in the Project footprint, Project area, and study area that were documented at locations where adult Gulf sturgeon were repeatedly located. Preferred habitat is described as shallow water (<13 feet) over sandy substrate with water quality characteristics, such as high dissolved oxygen (DO) content (>7.2 milligrams per liter [mg/L]) that also contained two or three organisms known to occur in adult diets. Preferred habitat for the Gulf sturgeon within the Project footprint was located in the North Harbor Expansion, West Pier Expansion, and west of the West Pier Expansion areas (see Appendix G of the EIS).

2.1.2 Range

Historically, Gulf sturgeon occurred in rivers from the Mississippi River to the Tampa Bay, and in bays and estuaries from Florida to Louisiana, including the Pearl River and Pascagoula River (USFWS et al., 1995). Gulf sturgeon have been documented to inhabit coastal rivers from Louisiana to Florida during the warmer months and overwinters in estuaries, bays, and the Gulf. In Florida, Gulf sturgeon have been documented to spend summer months near the mouth of springs and cool water rivers in the Suwannee River (USFWS et al., 1995). Fox et al. (2002) found that Gulf sturgeon occupied the shoreline areas of Choctawhatchee Bay, Florida, in 7- to 10-foot waters over sand substrate.

Immature and mature Gulf sturgeon participate in freshwater migration. Studies have shown that subadults and adults spend 8 to 9 months each year in rivers and 3 to 4 of the coolest months in the estuaries or Gulf waters (USFWS et al., 1995).

2.1.3 Distribution in Mississippi

Gulf sturgeon are found in rivers, bays, and estuaries along the Mississippi Gulf Coast. Ross et al. (2009) and Heise et al. (2004) conducted an extensive tagging and tracking study from 1997 to 2004, where they followed individual fish throughout the Pascagoula and Pearl rivers, Mississippi Sound, and in Breton

Sound. In Mississippi Sound, the majority of the tracking effort was near the barrier islands and concentrated in the central and eastern portion of Mississippi Sound. Gulf sturgeon from both the Pearl and Pascagoula rivers are known to use the Mississippi Gulf Coast, including the barrier islands for migration and foraging. Rogillio et al. (2007) and Ross et al. (2009) located tagged adult Gulf sturgeon among Cat, Ship, Horn, and Petit Bois islands from October through March.

The USACE Engineer Research and Development Center (ERDC) is conducting an ongoing Gulf sturgeon monitoring effort at Ship Island in association with the Mississippi Coastal Improvements Program (MsCIP). The study's objective is to define the seasonal occurrences and movements of Gulf sturgeon around Ship Island and within Camille Cut. This research has shown that between September 2011 and June 2012, a total of 13,720 detections from approximately 14 Gulf sturgeon originating from five rivers (Pearl, Pascagoula, Escambia, Blackwater, and Yellow) were found in their study area (ERDC, 2012).

Comparatively, between September 2012 and June 2013, they logged 94,244 detections from 21 Gulf sturgeon originating from the Pearl, Pascagoula, Escambia, Blackwater, Yellow, Choctawhatchee and Brothers Rivers. The greatest number of Gulf sturgeon detected during the 2011-2012 sampling period occurred in November and December followed by decreasing monthly numbers for January through March. Whereas, the greatest number of fish documented during the 2012-2013 sampling period occurred in December with similar numbers through March. They noted a significant decrease in Gulf sturgeon activity in April, while the greatest number of detections was recorded in December and January. The fewest number of detections per month were reported for October and April (ERDC, 2013). The summary for the 2014 deployment period had not yet been submitted to the USACE.

Havrylkoff et al. (2012) used an array of automated telemetry receivers, to monitor Gulf sturgeon in the Pascagoula River and associated estuary. They observed that Gulf sturgeon appear to prefer the eastern distributary upriver from Bayou Chemise as the primary travel corridor between freshwater habitats and marine feeding grounds in the area studied. In their study, the western distributary of the Pascagoula River appeared to represent the main entrance point by Gulf sturgeon to the Pascagoula River (Havrylkoff, 2012). Prolonged and extensive use of the mouth of the Pascagoula River and immediate adjacent coastal habitats associated with the western distributary was observed in April and May during seasonal migrations, when previous manual tracking activity within this system had not documented Gulf sturgeon within the coastal nearshore environment between April and September. Findings by Havrylkoff et al. (2012) were supported by research conducted by Peterson et al. (2015) that documented Gulf sturgeon in the Mississippi Sound during May (Appendix O of the EIS). Recent tagging efforts led by Mark S. Peterson of the University of Southern Mississippi, Gulf Coast Research Laboratory and William T. Slack of the USACE ERDC have shown that adults spend more time in the Mississippi Sound than previously thought (Peterson et al., 2015, Appendix O of the EIS).

2.1.4 Presence in the Project Area and Study Area

Gulf sturgeon monitoring was conducted in the Mississippi Sound, between West and East Ship Islands, and around the proposed Project area from fall 2012 to fall 2014 [Peterson et al., 2015 (Appendix O of the EIS); Peterson, 2015]. The Gulf sturgeon monitoring study was conducted using a network of telemetry receivers in the area surrounding the proposed Project area (referred to as the Gulfport array) and further east (east gate) and west (west gate) between the Port and the Pascagoula and Pearl Rivers, respectively, to determine the use of near shore and project areas by Gulf sturgeon [Peterson et al., 2015 (Appendix O of the EIS)]. Key results from this study are summarized below; detailed results are provided in Appendix O of the EIS.

- Adult Gulf sturgeon are mainly from the Pascagoula and Pearl drainages, but there were some eastern population fish [Escambia, Choctawhatchee and Blackwater (recaptured fish) drainages] that appeared in the Gulfport array.
- Overall, Gulf sturgeon occurrence appears to be more concentrated on the east gate and eastern portion of the Gulfport array compared to the west gate and western portion of the Gulfport array.
- Total detections were markedly lower in the year 2 data set than year 1, with four individuals (two from each drainage) returning to the array over the 2 years of this monitoring study. These data suggest some level of consistent and repeatable regional-scale movement patterns in Gulf sturgeon from the western Gulf drainages.
- The number of detections per fish and time within the array varied greatly among all the detected Gulf sturgeon, with individuals taking both transitory paths through the array, and localized movements within the entire array.
- Gulf sturgeon from each life stage category (adult, sub-adult, juvenile) were detected. The adults, unexpectedly, had the greatest number of occurrences and detections. Juveniles and sub-adults life history stages may experience restricted movements away from natal rivers as young fish, and only begin to expand their range later with age, based on the relative low occurrence of detections of those two life history stages. However, adults have been documented within the proposed Project area during pre- and post-migratory periods. The data suggest that the Gulf sturgeon habitat monitored serves as a corridor between other habitat types, drainages, feeding zones, or is used as a pre-/post-migratory acclimation zone.

2.2 GREEN SEA TURTLE

The green sea turtle or green turtle was listed on July 28, 1978, as threatened, except for Florida and the Pacific Coast of Mexico (including the Gulf of California), where it was listed as endangered (43 FR 32808). The greatest cause of decline in green turtle populations is commercial harvest for eggs and food. Other turtle parts are used for leather and jewelry, and small turtles are sometimes stuffed as curios. Incidental catch during commercial shrimp trawling is a continued source of mortality that adversely affects recovery. It is estimated that before the implementation of turtle excluder devices (TEDs) requirements, the offshore commercial shrimp fleet captured about 925 green turtles a year, of which approximately 225 would die. Most turtles killed are juveniles and subadults. Various other fishing

operations also negatively affect this species (NMFS, 2013b). Epidemic outbreaks of fibropapilloma, or "tumor" infections, have occurred on green turtles, especially in Hawaii and Florida, posing a severe threat. The cause of these outbreaks is largely unknown, but it could be caused by a viral infection (Barrett, 1996). This species is also subject to various other threats shared by sea turtles in general (see Section 2.4).

2.2.1 Habitat

The green turtle primarily utilizes shallow habitats such as lagoons, bays, inlets, shoals, estuaries, and other areas with an abundance of marine algae and seagrasses. Individuals observed in the open ocean are believed to be migrants en route to feeding grounds or nesting beaches (Meylan, 1982). Hatchlings often float in masses of marine plants (e.g., *Sargassum* rafts) in convergence zones. Coral reefs and rocky outcrops near feeding pastures often are used as resting areas. The adults are primarily herbivorous, while the juveniles consume invertebrates. Their diets include seagrasses, macroalgae and other marine plants, mollusks, sponges, crustaceans, and jellyfish (Mortimer, 1982).

Terrestrial habitat is typically limited to nesting activities, although in some areas, such as Hawaii and the Galápagos Islands, green turtles often bask on beaches (Balazs, 1980). They prefer high-energy beaches with deep sand, which may be coarse to fine, with little organic content. At least in some regions, they generally nest consistently on the same beach, which is apparently their natal beach (Meylan et al., 1990; Allard et al., 1994), although an individual might switch to a different nesting beach within a single nesting season (Derek Green, Atkins, pers. obs.).

2.2.2 Range

The green turtle is a circumglobal species in tropical and subtropical waters. In U.S. Atlantic waters, it occurs around the U.S. Virgin Islands, Puerto Rico, and continental U.S. from Massachusetts to Texas. Major nesting activity occurs on Ascension Island, Aves Island (Venezuela), Costa Rica, and in Surinam. Relatively small numbers nest in Florida, with even smaller numbers in Georgia, North Carolina, and Texas (NMFS and USFWS, 1991; Hirth, 1997).

2.2.3 Distribution in Mississippi

Green turtles are generally found in tropical and subtropical waters along continental coasts. The Institute for Marine Mammal Studies (IMMS) in Gulfport, Mississippi, rehabilitated a green turtle that was caught by an angler on June 12, 2012, in Gulfport, Mississippi. The turtle was equipped with a satellite tracking device and released on October 25, 2012. The tracking showed that the turtle stayed in the Mississippi Sound for approximately 1 month before moving on to Chandeleur Sound, Louisiana, and was last recorded south of Bastian Bay, Louisiana (IMMS, 2012). The Sea Turtle Stranding and Salvage Network (STSSN), which documents strandings in Mississippi as well as other coastal states, documented seven green turtles in 2011, one in 2012, and two through August 2013 (National Oceanographic and

Atmospheric Administration [NOAA], 2013). The green turtle is not known to nest on the Mississippi coast or barrier islands (IMMS, 2012).

2.2.4 Presence in the Project Area and Study Area

The USACE Sea Turtle Data Warehouse (USACE, 2013) maintains records of documented incidental take of sea turtles, as a result of hopper dredging activities throughout southeastern coastal waters. No incidental take involving green turtles was reported between 1980 and 2013. On April 2011, one green turtle was captured and relocated during the pre-dredge trawling for the Gulfport Expansion Project (USACE, 2013). These documented events provide clear indication of the possibility of these turtles occurring within the proposed Project area. No green turtle nests have been recorded from the study area (NMFS and USFWS, 2007).

2.3 HAWKSBILL SEA TURTLE

The hawksbill sea turtle or hawksbill was federally listed as endangered on June 2, 1970 (35 FR 8495), with critical habitat designated in Puerto Rico on May 24, 1978 (43 FR 22224). The greatest threat to this species is harvest for tortoiseshell and stuffed turtle curios (Meylan and Donnelly, 1999). Hawksbill turtleshell (bekko) yields high prices. Japanese imports of raw bekko between 1970 and 1989 totaled 1,573,768 pounds, representing more than 670,000 turtles. The hawksbill turtle is also used in the manufacture of leather, oil, perfume, and cosmetics (NMFS, 2007a).

Other threats include destruction of breeding locations by beach development, incidental take in lobster and Caribbean reef fisheries, pollution by petroleum products (especially oil tanker discharges), entanglement in persistent marine debris (Meylan, 1992), and predation on eggs and hatchlings. In American Samoa, most hawksbill turtles and eggs encountered by villagers are harvested (Tuato'o-Bartley et al., 1993). The USFWS (1998) provides detailed information on certain threats, including beach erosion, beach armoring, beach nourishment, sand mining, artificial lighting, beach cleaning, increased human presence, recreational beach equipment, predation, and poaching. In 1998, NMFS designated critical habitat near Isla Mona and Isla Monito, Puerto Rico, seaward to 2.2 miles (63 FR 46693–46701).

2.3.1 Habitat

Hawksbill sea turtles generally inhabit coastal reefs, bays, rocky areas, passes, estuaries, and lagoons, where they occur at depths of less than 70 feet. Like some other sea turtle species, hatchlings are sometimes found floating in masses of marine plants (e.g., *Sargassum* rafts) in the open ocean (NFWL, 1980). Hawksbills re-enter coastal waters when they reach a carapace length of approximately 8 to 10 inches. Coral reefs are widely recognized as the foraging habitat of juveniles, subadults, and adults. This habitat association is undoubtedly related to their diet of sponges, which need solid substrate for attachment. Hawksbill turtles also occur around rocky outcrops and high-energy shoals, which are also

optimum sites for sponge growth. In Mississippi, juvenile hawksbills are associated with stone jetties (NMFS, 2007a).

While this species is omnivorous, it prefers invertebrates, especially encrusting organisms, such as sponges, tunicates, bryozoans, mollusks, corals, barnacles, and sea urchins. Pelagic species consumed include jellyfish, fish, and plant material, such as algae, seagrasses, and mangroves (Carr, 1952; Rebel, 1974; Pritchard, 1977; Musick, 1979; Mortimer, 1982). The young are reported to be somewhat more herbivorous than adults (Ernst and Barbour, 1972).

Terrestrial habitat is typically limited to nesting activities. The hawksbill is typically a solitary nester and nests on undisturbed, deep-sand beaches, from high-energy ocean beaches to tiny pocket beaches that are several feet wide bounded by crevices of cliff walls. Typically, the sand beaches used for nesting are low energy, with woody vegetation, such as sea grape (*Coccoloba uvifera*), near the waterline (National Research Council, 1990).

2.3.2 Range

The hawksbill is circumtropical, occurring in tropical and subtropical seas of the Atlantic, Pacific, and Indian oceans (Witzell, 1983). This species is probably the most tropical of all marine turtles, although it does occur in many temperate regions. The hawksbill is widely distributed in the Caribbean Sea and western Atlantic Ocean, with representatives of at least some life history stages regularly occurring in southern Florida, the northern Gulf (especially Texas), and south to Brazil (NMFS, 2007a). In the continental U.S., the hawksbill mainly nests in Florida, where it is sporadic at best (NFWL, 1980). A major nesting beach, however, occurs on Mona Island, Puerto Rico. Elsewhere in the western Atlantic, hawksbills nest in small numbers along the Gulf Coast of Mexico, the West Indies, and along the Caribbean coasts of Central and South America (Musick, 1979).

2.3.3 Distribution in Mississippi

Texas is the only state outside of Florida where hawksbill turtles are sighted with any regularity. Most of these sightings involve posthatchlings and juveniles and are primarily associated with stone jetties. These small turtles are believed to originate from nesting beaches in Mexico (NMFS, 2007a). No documented sightings have been reported in Mississippi waters during dredging operations (USACE, 2013) or stranded on the Mississippi Coast (NOAA, 2013).

2.3.4 Presence in the Project Area and Study Area

No documented records of hawksbill turtles exist from Harrison County, Mississippi; however, this species could potentially occur in the proposed Project area and study area, although unlikely.

2.4 KEMP'S RIDLEY SEA TURTLE

Kemp's ridley sea turtle or Kemp's ridley was listed as endangered throughout its range on December 2, 1970 (35 FR 18320). Populations of this species have declined since 1947, when an estimated 42,000 females nested in one day (Hildebrand, 1963), to a total nesting population of approximately 1,000 in the mid-1980s. The decline of this species was primarily due to human activities including collection of eggs, fishing for juveniles and adults, killing adults for meat and other products, and direct take for indigenous use. In addition to these sources of mortality, Kemp's ridleys have been subject to high levels of incidental take by shrimp trawlers (NMFS, 2007a; USFWS and NMFS, 2011). The National Research Council Committee on Sea Turtle Conservation estimated in 1990 that 86 percent of the human-caused deaths of juvenile and adult loggerhead sea turtles and Kemp's ridleys resulted from shrimp trawling (Campbell, 1995). Before the implementation of TEDs, estimates showed that the commercial shrimp fleet killed between 500 and 5,000 Kemp's ridleys each year (NMFS, 2007a). Kemp's ridleys have also been taken by pound nets, gill nets, hook and line, crab traps, and longlines.

Another problem shared by adult and juvenile Kemp's ridley turtles is the ingestion of manmade debris and garbage. Postmortem examinations of Kemp's ridley turtles found stranded on the south Texas coast from 1986 through 1988 revealed 54 percent (60 of the 111 examined) of the sea turtles had eaten some type of marine debris. Plastic materials were most frequently ingested and included pieces of plastic bags, Styrofoam, plastic pellets, balloons, rope, and fishing line. Nonplastic debris such as glass, tar, and aluminum foil were also ingested by Kemp's ridley turtles. Much of this debris comes from offshore oil rigs, cargo ships, commercial and recreational fishing boats, research vessels, naval ships, and other vessels operating in the Gulf. Laws enacted during the late 1980s to regulate this dumping are difficult to enforce over vast expanses of water. In addition to trash, pollution from heavy spills of oil or waste products pose an additional threat (Campbell, 1995).

Further threats to this species include collisions with boats, explosives used to remove oil rigs, and impingement at power plant intakes (Campbell, 1995). Dredging operations affect Kemp's ridleys through incidental take and habitat degradation. Incidental take of Kemp's ridley has been documented with hopper dredges. In addition to direct take, channelization of the inshore and nearshore areas can degrade foraging and migratory habitat through dumping of dredged material, degraded water quality/clarity, and altered current flow (USFWS and NMFS, 2011).

Kemp's ridley turtles are especially subject to human impacts during the time the females come ashore for nesting. Modifications to nesting areas can have a devastating effect on Kemp's ridley turtle populations. In many cases, prime nesting sites are also prime real estate. If a nesting site has been disturbed or destroyed, female turtles may nest in inferior locations where the hatchlings are less likely to survive, or they may not lay any eggs at all. Artificial lighting from developed beachfront areas often disorients nesting females and hatchlings, causing them to head inland by mistake, often with fatal results. Adult females may also avoid brightly lit areas that would otherwise provide suitable nesting sites (Butler, 1998; Witherington and Martin, 2003).

Because of the dangerous population decline at the time, a headstarting program for Kemp's ridley sea turtles was carried out from 1978 to 1992. Headstarting is a process whereby sea turtles are maintained in captivity for a period following hatching before being released into the wild, in an effort to increase survival during the critical first year of life by protecting them from the high rates of natural predation that would otherwise have occurred in their early months in the natural environment. Other goals of the headstarting program were to establish a nesting colony on Padre Island, Texas, through imprinting hatchlings to natal sand beaches, to develop sea turtle captive-rearing practices, and to study growth and survival in captivity. This headstarting effort was a subsidiary and experimental part of the Kemp's Ridley Recovery Program. Eggs were collected from Rancho Nuevo, Mexico, and placed into polystyrene foam boxes containing Padre Island sand so that the eggs never touched the Ranch Nuevo sand. The eggs were flown to the U.S. and placed in a hatchery on Padre Island and incubated. The resulting hatchlings were allowed to crawl over the Padre Island beaches into the surf for imprinting purposes before being recovered from the surf and taken to Galveston, Texas, for rearing. They were fed a diet of high-protein commercial floating pellets for 7 to 15 months before being released into Texas or Florida waters. This program has had some success. The first nesting from one of these head-started individuals occurred at Padre Island in 1996 and more nesting has occurred since then. In later years, some of the eggs were incubated and imprinted at Rancho Nuevo, Mexico. The captive-rearing program ended in 1992 (Eckert et al., 1994; Caillouet et al., 1995; Shaver, 2000; Fontaine and Shaver, 2005; NMFS et al., 2011; National Park Service [NPS], 2013).

Kemp's ridleys appear to be in the early stages of recovery. In 1985, 706 nests were recorded at Rancho Nuevo, Mexico (Witzell et al., 2005), approximately 6,000 Kemp's ridley nests were recorded on Mexican beaches during the 2000 nesting season (Shaver, 2000), and just over 10,000 nests were recorded there during the 2005 nesting season (Shaver, 2006). In 2011, 20,570 nests were recorded at Rancho Nuevo (Jones, 2012). Similarly, increased nesting activity was recorded on the Texas beaches in the last decade or so from 4 nests in 1995 to 51 nests in 2005 (NPS, 2006; Shaver, 2006). Some of these nests were from the headstarting program for Kemp's ridleys. In 2012, 209 Kemps' ridley nests were recorded, although in 2013 that number inexplicably dropped to 153 (NPS, 2013). The overall increase can likely be attributed to two primary factors: full protection of nesting females and their nests in Mexico and the requirement to use TEDs in shrimp trawls both in the U.S. and in Mexico (NMFS, 2007a).

2.4.1 Habitat

Kemp's ridleys inhabit shallow coastal and estuarine waters, usually over sand or mud bottoms. Adults are primarily shallow-water benthic feeders that specialize on crabs, especially portunid crabs, while juveniles feed on *Sargassum* and associated infauna and other epipelagic species of the Gulf (USFWS and NMFS, 2011). In some regions, blue crab (*Callinectes sapidus*) is the most common food item of adults and juveniles. Other food items include shrimp, snails, bivalves, sea urchins, jellyfish, sea stars, fish, and occasional marine plants (Pritchard and Marquez, 1973; Shaver, 1991; Campbell, 1995).

2.4.2 Range

Adults are primarily restricted to the Gulf, although juveniles may range throughout the Atlantic Ocean, since they have been observed as far north as Nova Scotia (Musick, 1979) and in coastal waters of Europe (Brongersma, 1972). Important foraging areas include Campeche Bay, Mexico, and Louisiana coastal waters.

Almost the entire population of Kemp's ridley nests on an 11-mile stretch of coastline near Rancho Nuevo, Tamaulipas, Mexico, approximately 190 miles south of the Rio Grande. A secondary nesting area occurs at Tuxpan, Veracruz, and sporadic nesting has been reported from Mustang Island, Texas, southward to Isla Aquada, Campeche, Mexico, on the Yucatan Peninsula. Several scattered isolated nesting attempts have occurred from North Carolina to Colombia.

2.4.3 Distribution in Mississippi

Kemp's ridleys are regularly seen in both the Mississippi Sound and around the barrier islands, and a number have been accidentally captured in recent years by recreational anglers on mainland piers (MMNS, 2001). The IMMS has rehabilitated numerous Kemp's ridley and released them back to the wild. On July 2011, the IMMS released 22 Kemp's ridley sea turtles into the Gulf, south of Ship Island. In 2011, the STSSN documented 265 stranded Kemp's ridley sea turtles in Mississippi, 153 stranded in 2012, and 176 through August 2013 (NOAA, 2013). This species has also been taken in Mississippi waters during dredging operations (USACE, 2013). The IMMS data indicate that the Mississippi Sound is vital developmental habitat for the Kemp's ridley (IMMS, 2013).

2.4.4 Presence in the Project Area and Study Area

The USACE Sea Turtle Data Warehouse (USACE, 2013) maintains records of documented incidental takes of sea turtles as a result of hopper dredging activities throughout southeastern coastal waters. From 2002 through 2013, two incidental takes involving Kemp's ridley were reported within Gulfport Harbor and the FNC. During the Gulfport widening improvements in 2011, 71 Kemp's ridleys were captured and relocated (USACE, 2013). These documented events provide clear indication of the likelihood of these turtles occurring within the proposed Project area and study area. Kemp's ridley is probably the most likely of the sea turtle species to occur in the proposed Project area and study area.

2.5 LEATHERBACK SEA TURTLE

The leatherback sea turtle or leatherback was listed as endangered throughout its range on June 2, 1970 (35 FR 8495), with critical habitat designated in the U.S. Virgin Islands on September 26, 1978, and March 23, 1979 (43 FR 43688–43689 and 44 FR 17710–17712, respectively). In 1999, NMFS amended and redesignated this habitat, while also establishing a "conservation zone" extending from Cape Canaveral, Florida, to the Virginia-North Carolina border and including all inshore and offshore waters;

this zone is subject to shrimping closures when a high abundance of leatherbacks is documented (64 FR 14067, March 23, 1999).

This species' decline is attributable to overexploitation and incidental mortality, generally associated with commercial shrimping and fishing activities. Use of turtle meat for fish bait and the consumption of garbage by turtles are also causes of mortality, the latter phenomenon apparently occurring when plastic is mistaken for jellyfish (Rebel, 1974). Egg collection, nest destruction, and habitat degradation are major adverse impacts to nesting beaches and hatch success (NatureServe, 2010a). Because leatherbacks nest in the tropics during hurricane season, a potential exists for storm-generated waves and wind to erode nesting beaches, resulting in nest loss (NMFS and USFWS, 1992). This species may be susceptible to drowning in shrimp trawlers equipped with TEDs, because adult leatherbacks are too large to pass through the TED exit opening. Mortality associated with the swordfish gillnet fisheries in Peru and Chile represents the single largest source of mortality for the East Pacific populations of leatherback turtles (Eckert and Sarti, 1997).

2.5.1 Habitat

The leatherback sea turtle is mainly pelagic, inhabiting the open ocean, and seldom approaches land except for nesting (Eckert, 1992). It is most often found in coastal waters only when nesting or when following concentrations of jellyfish (Texas Parks and Wildlife Department, 2007), when it can be found in inshore waters, bays, and estuaries. It dives almost continuously, often to great depths (Eckert, 1992).

Despite their large size, the diet of leatherbacks consists largely of jellyfish and sea squirts. They also consume sea urchins, squid, crustaceans, fish, blue-green algae, and floating marine plants (NFWL, 1980). The leatherback typically nests on beaches with a deep-water approach (Pritchard, 1971).

2.5.2 Range

The leatherback is probably the most wide-ranging of all sea turtle species. It occurs in the Atlantic, Pacific, and Indian oceans; as far north as British Columbia, Newfoundland, Great Britain, and Norway; as far south as Australia, Cape of Good Hope, and Argentina; and in other waterbodies such as the Mediterranean Sea (NFWL, 1980). Leatherbacks nest primarily in tropical regions; major nesting beaches include Malaysia, Mexico, French Guiana, Surinam, Costa Rica, and Trinidad (Ross, 1982). Leatherbacks nest only sporadically in some of the Atlantic and Gulf states of the continental U.S., with one nesting reported as far north as North Carolina (Schwartz, 1976). In the Atlantic and Caribbean, the largest nesting assemblages occur in the U.S. Virgin Islands, Puerto Rico, and Florida (NMFS, 2007a).

The leatherback sea turtle migrates farther and ventures into colder water than any other marine reptile. Adults appear to engage in routine migrations between boreal, temperate, and tropical waters, presumably to optimize both foraging and nesting opportunities. The longest-known movement is that of an adult female that traveled 3,666 miles to Ghana, West Africa, after nesting in Surinam (NMFS and USFWS,

1992). During the summer, leatherback turtles tend to use the east coast of the U.S. from the Gulf of Maine south to the middle of Florida.

2.5.3 Distribution in Mississippi

The leatherback turtle is seen occasionally along the Mississippi coast. A group of at least six leatherbacks was observed feeding on jellyfish near Petit Bois Island in 2000 (MMNS, 2001). The STSSN has only one documented stranding of a leatherback turtle in Mississippi in June 2013 (NOAA, 2013). In 2007, a non-lethal take of a leatherback occurred during dredging of the federally authorized Gulfport FNC; no lethal takes of leatherbacks have been reported during dredging activities in Mississippi waters (USACE, 2013).

2.5.4 Presence in the Project Area and Study Area

Leatherback turtles are pelagic but are sporadically observed in Mississippi waters. Because of their pelagic nature, they are unlikely to occur in the proposed Project area and study area, except on rare occasions.

2.6 LOGGERHEAD SEA TURTLE

The loggerhead sea turtle or loggerhead was listed by the USFWS as threatened throughout its range on July 28, 1978 (43 FR 32808). The decline of the loggerhead turtle, like that of most sea turtles, is the result of overexploitation by man, inadvertent mortality associated with fishing and trawling activities, and natural predation. The most significant threats to its population are coastal development, commercial fisheries, and pollution (NMFS, 2007a).

2.6.1 Habitat

The loggerhead sea turtle occurs in the open seas as far as 500 miles from shore, but mainly over the continental shelf, and in bays, estuaries, lagoons, creeks, and mouths of rivers. It favors warm temperate and subtropical regions not far from shorelines. The adults occupy various habitats, from turbid bays to clear waters of reefs. Subadults occur mainly in nearshore and estuarine waters. Hatchlings move directly to sea after hatching, and often float in masses of *Sargassum*. They may remain associated with *Sargassum* for an unknown period of several years (NMFS, 2007a).

Commensurate with their use of varied habitats, loggerheads consume a wide variety of both benthic and pelagic food items, which they crush before swallowing. Conch, shellfish, horseshoe crabs, prawns and other crustacea, squid, sponges, jellyfish, basket stars, fish (carrion or slow-moving species), and even hatchling loggerheads have all been recorded as loggerhead sea turtle prey (Hughes, 1974; Rebel, 1974; Mortimer, 1982). Adults forage primarily on the bottom, but also take jellyfish from the surface. The young feed on prey concentrated at the surface, such as gastropods, fragments of crustaceans, and *Sargassum*.

Nesting occurs usually on open sandy beaches above the high-water mark of ordinary tidal action and seaward of well-developed dunes. They nest primarily on high-energy beaches on barrier islands adjacent to continental land masses in warm-temperate and subtropical regions. Steeply sloped beaches with gradually sloped offshore approaches are favored. In Florida, nesting on urban beaches was strongly correlated with the presence of tall objects (trees or buildings), which apparently shield the beach from city lights (Salmon et al., 1995).

2.6.2 Range

The loggerhead is widely distributed in tropical and subtropical seas, being found in the Atlantic Ocean from Nova Scotia to Argentina, the Gulf, Indian and Pacific oceans (although it is rare in the eastern and central Pacific), and the Mediterranean Sea (Rebel, 1974; Ross, 1982; Iverson, 1986). In the continental U.S., loggerheads nest along the Atlantic coast from Florida to as far north as New Jersey (Musick, 1979) and sporadically along the Gulf Coast. In recent years, a few have nested on barrier islands along the Texas coast. The loggerhead is the most abundant sea turtle species in U.S. coastal waters (NMFS, 2007a).

2.6.3 Distribution in Mississippi

The loggerhead is known to nest in small numbers on the barrier islands (Petit Bois, Horn, and Cat islands), but rarely nests on the mainland of Mississippi. However one loggerhead turtle was reported on May 22, 2012, nesting on a beach in Jackson County (Hoke, 2012) and another in Pass Christian (Johnson, 2013).

The loggerhead prefers shallow inner continental shelf waters; occurring very infrequently in the bays. It often occurs near offshore oil rig platforms, reefs, and jetties. Loggerheads are probably present year-round but are most noticeable in the spring when a favored food item, the Portuguese man-of-war (*Physalia physalis*), is abundant. The STSSN reported four loggerhead turtle strandings in Mississippi in 2011, three in 2012, and 11 through August 2013 (NOAA, 2013).

2.6.4 Presence in the Project area and Study Area

The loggerhead is likely to pass through the proposed Project area and study area, but would not be a resident of the Mississippi Sound. During the Gulfport Harbor Navigation Channel Widening Project in 2011, five loggerhead sea turtles were captured and relocated in the study area prior to dredging activities, and one loggerhead turtle was taken during dredging activities (USACE, 2013). One loggerhead nest has been recently recorded from the study area at Pass Christian in July 2013 (Johnson, 2013). The hatchlings form this nest were subsequently released by the IMMS in September 2013. Another loggerhead turtle nest was recorded just outside of the study area in 2012. On May 22, 2012, a loggerhead was observed nesting along the beach in Jackson County; it contained 109 eggs (Hoke, 2012).

2.7 PIPING PLOVER

The USFWS listed the piping plover as threatened and endangered on December 11, 1985 (50 FR 50726–50734). The piping plover is federally listed as endangered in the Great Lakes watershed, while the birds breeding on the Atlantic Coast and northern Great Plains are federally listed as threatened. Piping plovers wintering in Texas, Louisiana, and Mississippi are part of the northern Great Plains and Great Lakes populations.

Shorebird hunting during the early 1900s caused the first known major decline of piping plovers (Bent, 1929). Since then, loss or modification of habitat resulting from commercial, residential, and recreational developments, dune stabilization, river impounding and channelization (eliminating sandbars, encroachment of vegetation, and altering water flows), and wetland drainage have further contributed to the decline of the species. Additional threats include human disturbances through recreational use of habitat and predation of eggs by feral pets (USFWS, 1995).

2.7.1 Habitat

Piping plovers typically inhabit shorelines of oceans, rivers, and inland lakes. Nest sites include sandy beaches, especially where scattered tufts of grass are present; sandbars; causeways; bare areas on dredge-created and natural alluvial islands in rivers; gravel pits along rivers; silty flats; and salt-encrusted bare areas of sand, gravel, or pebbly mud on interior alkali lakes and ponds (Haig and Elliott-Smith, 2004). For wintering grounds, these birds use beaches, mudflats, sandflats, dunes, and offshore islands of dredged material (AOU, 1998; USFWS, 1995).

2.7.2 Range

The piping plover breeds on the northern Great Plains (Iowa, northwestern Minnesota, Montana, Nebraska, North and South Dakota, Alberta, Manitoba, and Saskatchewan), in the Great Lakes (Illinois, Indiana, Michigan, Minnesota, New York, Ohio, Pennsylvania, Wisconsin, and Ontario), and along the Atlantic Coast from Newfoundland to Virginia and (formerly) North Carolina. It winters on the Atlantic and Gulf coasts from North Carolina to Mexico, including coastal Mississippi and, less commonly, in the Bahamas and West Indies (AOU, 1998; 50 FR 50726, December 11, 1985). Migration occurs both through the interior of North America east of the Rocky Mountains (especially in the Mississippi Valley) and along the Atlantic Coast (AOU, 1998). Few data exist on the migration routes of this species.

2.7.3 Distribution in Mississippi

Critical habitat has been designated for the piping plover along the Mississippi coast, including portions of the study area. Critical habitat units in the study area include Mississippi Units 02–06 (along the coast), with Unit 04 directly west of Gulfport Harbor and Unit 05 directly east of the harbor, 12 (Deer Island), and 14 (Cat, East Ship Island, and West Ship Island) (see Figure 1). The PCEs for piping plover wintering habitat are those habitat components that are essential for the primary biological needs of foraging,

sheltering, and roosting, and the physical features necessary for maintaining the natural processes that support these habitat components. Only those areas containing these PCEs within the designated boundaries are considered critical habitat. The PCEs are found in geologically dynamic coastal areas that support intertidal beaches and flats (between annual low tide and annual high tide) and associated dune systems and flats above annual high tide. Intertidal flats include sand and/or mud flats with no or very sparse emergent vegetation. In some cases, these flats may be covered or partially covered by a mat of blue-green algae. Adjacent unvegetated or sparsely vegetated sand, mud, or algal flats above high tide are also important, especially for roosting piping plovers. Such sites may have debris or detritus (decaying organic matter) offering refuge from high winds and cold weather. Important components of the beach/dune ecosystem include surf-cast algae for feeding of prey, sparsely vegetated beach area above mean high tide for roosting and refuge during storms, spits (a small point of land, especially sand, running into water) for feeding and roosting, and washover areas for feeding and roosting. Washover areas are broad, unvegetated zones with little or no topographic relief that are formed and maintained by the action of hurricanes, storm surge, or other extreme wave action (USFWS 2001b). Impacts to these PCEs are discussed in Section 3.9.3.

2.7.4 Presence in the Project Area and Study Area

The USFWS designated critical habitat for the species in its nesting and wintering range (65 FR 41781–41812, July 6, 2000). Designation of critical habitat became final on July 10, 2001 (66 FR 17:36038–36143) and was modified in 2009 (74 FR 23475–23600). Critical habitat includes the land from the seaward boundary of MLLW to where densely vegetated habitat (not used by the species) begins and where the PCEs no longer occur. Figure 2 illustrates that piping plover designated critical habitat occurs within the proposed Project area; however, it is not located within the expansion footprint of the Proposed Project Alternative. More specifically, piping plover designated critical habitat is a component of the beach along the eastern side of the PGEP, ending just northeast of the proposed East Pier Expansion footprint, as well as on the western side of the PGEP.

2.8 RUFA RED KNOT

The rufa red knot is listed as a federally threatened species (USFWS, 2014a). It is a medium-sized shorebird about 9 to 11 inches in length with a wingspan of 20 inches and is recognized during the breeding season by its distinctive red feathers. There is a prominent stripe above the eye, with the breast and upper belly being a rich red to a brick or salmon red. Rufa red knots will sometimes have a few scattered light feathers mixed in (USFWS, 2014b).

2.8.1 Habitat

Rufa red knots use coastal marine and estuarine habitats with large, wide areas of exposed intertidal sediments. Both the migrating and wintering populations use high-energy gulf, ocean or bay-front areas, as well as sheltered tidal flats in lagoons. The preferred wintering and migration microhabitats are muddy

or sandy coastal areas, such as the mouths of bays, estuaries, unimproved tidal inlets, and tidal flats (USFWS, 2014b).

2.8.2 Range

The rufa red knot migrates on an annual basis between its breeding grounds in the Canadian Arctic and several wintering regions, which include the Southeast U.S., the Northeast Gulf, northern Brazil, and Tierra del Fuego at the southern tip of South America; the rufa red knot is an uncommon to rare winter resident or visitor in Mississippi.

2.8.3 Distribution in Mississippi

The rufa red knot utilizes specific key stopover areas during both the spring and fall migrations for resting and feeding. It has been documented mainly on the offshore islands but has been recorded on all major islands from Cat Island east to Petit Bois Island, with only five birds at Horn Island observed during the peak winter months. The peak count of 74 birds at Long Beach occurred in January 1986 (USFWS, 2014b).

2.8.4 Presence in the Project Area and Study Area

The rufa red knot is noted as an uncommon to rare winter resident or visitor in Mississippi, with occurrences documented mainly on offshore islands. Winter visits by observers are scarce; however, rufa red knots have been recorded on all major islands within the study area from Cat Island east to Petit Bois Island, with peak counts in winter of only five birds at Horn Island. The peak count of 74 rufa red knots at Long Beach occurred in January 1986 (USFWS, 2014b). Although known to occur in the study area, it is unlikely that rufa red knots occur in the proposed Project area, as most documented occurrences have been on the barrier islands.

2.9 BLUE WHALE

The blue whale is listed as a federally endangered species and is protected under both the ESA and the MMPA. The blue whale is known to be the largest mammal to ever inhabit the earth.

Blue whales were hunted by whalers of the 19th century in small numbers. While the steam power boats aided in overtaking the large, fast-swimming blue whales, the deck-mounted harpoon cannons developed for killing made it an industrial scale operation by the turn of the century. From the turn of the century until the mid-1960s, blue whales from various stocks were intensively hunted in all the world's oceans (NMFS, 2013c).

2.9.1 Habitat

Blue whales are rare in the shelf waters of the eastern U.S., but are known to inhabit subpolar and subtropical latitudes. Blue whales will migrate toward the poles in the spring to feed and are commonly

observed off the coast of Canada. They are considered more coastal than the humpback whale, and migration is driven mostly by food availability. The southernmost range of the North Atlantic population of blue whales is thought to be Massachusetts; however, it has been reported that blue whales will occasionally stray into the Gulf, although rarely (NMFS, 2013c).

2.9.2 Range

Blue whales are found in all oceans and are separated into populations by ocean basin in the North Atlantic, North Pacific, and Southern Hemisphere. They are known to follow a seasonal migration pattern between summering and wintering areas, but some evidence suggests that individuals remain in certain areas year round. The extent of knowledge concerning distribution and movement varies with area, and migratory routes are not well known (NMFS, 2013c).

2.9.3 Distribution in Mississippi

Few records of blue whale sightings exist for the northern Gulf (NMFS, 2013c).

2.9.4 Presence in the Project Area and Study Area

The blue whale is not expected to occur in the proposed Project area or study area due to lack of food availability and water depth (NMFS, 2013c).

2.10 FIN WHALE

The fin whale is listed as endangered throughout its range under the ESA and is listed as "depleted" throughout its range under the MMPA. The fin whale is second only to the blue whale in size and weight.

2.10.1 Habitat

Fin whales inhabit deep water offshore of all major oceans, but are uncommon in the tropics. In general, fin whales in the central and eastern North Atlantic tend to occur most abundantly over the continental slope and on the shelf seaward of the 328-foot isobaths. They have also been sighted in shallower waters (NMFS, 2011).

2.10.2 Range

The fin whale has an extensive distribution in the North Atlantic, occurring from the Gulf and Mediterranean Sea, northward to the edges of the arctic pack ice. In general, fin whales are more common north of approximately 30 degrees north latitude (NMFS, 2011).

2.10.3 Distribution in Mississippi

No sightings of fin whales have been recorded within the northern Gulf.

2.10.4 Presence in the Project Area and Study Area

The fin whale is known to occur along the continental slope at depths of 328 feet (NMFS, 2011). It is not expected to occur in the proposed Project area or study area.

2.11 HUMPBACK WHALE

In 1946, the International Convention for the Regulation of Whaling regulated commercial whaling of humpback whales. In 1966, the International Whaling Commission prohibited commercial whaling of humpbacks. In June 1970, humpback whales were designated as "endangered" under the Endangered Species Conservation Act (ESCA). In 1973, the ESA replaced the ESCA and continued to list humpbacks as endangered. Under the MMPA, threats to humpbacks are mitigated through implementation of the Pacific Offshore Cetacean Take Reduction Plan and the Atlantic Large Whale Take Reduction Plan (NMFS, 2013d).

2.11.1 Habitat

Humpback whales inhabit deep water, and tend to occur most over the continental shell at latitudes between about 40 to 75 degrees (NMFS, 2013d).

2.11.2 Range

The humpback whales in the western North Atlantic are known to migrate and feed over the continental shelf. They inhabit Gulf of Maine, U.S. jurisdictional waters during summer and autumn. During the winter, humpback whales migrate to the Lesser Antilles, Virgin Islands, Puerto Rico, and Dominican Republic. They have been reported to migrate into the northern Gulf (NMFS, 1991).

2.11.3 Distribution in Mississippi

Humpback whales are not likely to occur off the coast of Mississippi (NMFS, 2013d).

2.11.4 Presence in the Project Area and Study Area

Humpback whales are not known to calf in the Gulf and are not expected to occur in the proposed Project area or study area (NMFS, 2013d).

2.12 SEI WHALE

In 1970, Sei whales were designated as "endangered" under the ESCA. In 1973, the ESA replaced the ESCA, and continued to list Sei whales as endangered. Sei whales are also listed as endangered under the MMPA of 1972 (NMFS, 2013e).

2.12.1 Habitat

Sei whales mainly inhabit deep, temperate water, and tend to occur mostly over the continental shelf at latitudes between about 40 to 75 degrees (Davis, 1998). They are typically observed in deep water far from coastlines (NMFS, 2013e). Few reliable records exist for the sei whale offshore of Louisiana and none exist in Mississippi (Davis, 1998).

2.12.2 Range

Sei whales are found in the Western North Atlantic during the summer, as well as the Gulf of Maine, Georges Bank, and Stellwagen Bank. During the winter, Sei whales migrate to the Lesser Antilles, Virgin Islands, Puerto Rico, and Dominican Republic. They have been reported to migrate into the northern Gulf (NMFS, 1991) but stay outside the 100-foot isobath (Davis, 1998).

2.12.3 Distribution in Mississippi

Sei whales do not occur off the coast of Mississippi (Davis, 1998; NMFS, 2013e).

2.12.4 Presence in the Project Area and Study Area

Sei whales are not expected to occur in the proposed Project area or study area (Davis, 1998; NMFS, 2013e).

2.13 SPERM WHALE

The sperm whale is listed as endangered throughout its range under the ESA and is listed as "depleted" throughout its range under the MMPA.

2.13.1 Habitat

Sperm whales tend to inhabit areas with a depth of 2,000 feet or more and are uncommon at depths less than 1,000 feet. These conditions generally correspond to sea surface temperatures greater than 59 degrees Fahrenheit (°F) (NMFS, 2013f). Recent studies by Jochens et al. (2008) found that sperm whales concentrate at the mouth of the Mississippi River near the Mississippi Canyon. No critical habitat has been designated for this species.

2.13.2 Range

The sperm whale has an extensive distribution in the North Atlantic, occurring from the Gulf and Mediterranean Sea, northward to the edges of the arctic pack ice. In general, sperm whales are more common at less than 40 degrees north latitude (NMFS, 2013f).

A distinct population segment occurs in the Gulf, with numerous recordings of sperm whales year round near the Mississippi Canyon and between the 100- and 2,000-foot isobath (Davis, 1998; Jochens et al.,

2008). Jochens et al. (2008) describe the northern Gulf stock as female dominated that is distinct from the western Atlantic sperm whales.

2.13.3 Distribution in Mississippi

Although a distinct population segment of sperm whales occurs in the Gulf (NMFS, 2013f), no sightings of sperm whales have been recorded in Mississippi.

2.13.4 Presence in the Project Area or Study Area

The sperm whale is known to occur along the continental slope at depths of approximately 700 feet near the mouth of the Mississippi River (Jochens et al., 2008); however, the sperm whale is not expected to occur in the proposed Project area or study area.

2.14 WEST INDIAN MANATEE

The West Indian or Florida manatee is listed as endangered throughout its range under the ESA (USFWS, 2001a) and under the MMPA.

2.14.1 Habitat

The manatee (sometimes called sea cow) is found primarily along the coast of Florida; however, it has also been recorded in coastal waters of Alabama and Mississippi (Mississippi-Alabama Sea Grant Consortium, 2008). Most adult manatees are approximately 10 feet long and weigh 800 to 1,200 pounds. Manatees have a tough, wrinkled, brown-to gray skin, which is continuously sloughed off. Hair is distributed sparsely over the body, with stiff whiskers around the mouth. They spend approximately 5 hours feeding daily, consuming amounts up to 4 to 9 percent of their body weight (USFWS, 2012).

The manatee inhabits marine, estuarine, and freshwater environments, preferring large, slow-moving rivers, river mouths, and shallow coastal areas, such as coves and bays (Lefebvre et al., 1989; USFWS, 2013). Manatees are opportunistic herbivores, feeding on a wide variety of submerged, floating and emergent marine, estuarine, and freshwater plants (O'Shea and Ludlow, 1992).

2.14.2 Range

The manatee is more common in the warmer waters off the coasts of Mexico, the West Indies, and Caribbean to northern South America (NatureServe, 2010b). Outside of Florida, manatees are mainly migratory species during the warmer months. During summer months, manatees may migrate as far north as coastal Virginia on the east coast and as far west as the Louisiana coast on the Gulf.

2.14.3 Distribution in Mississippi

Manatees are mainly a migratory species during the warmer months and sightings in Mississippi have increased (O'Shea and Ludlow, 1992; Mississippi-Alabama Sea Grant Consortium, 2008). According to USFWS (2013), the manatee may potentially occur in coastal waters off of Hancock, Harrison, and Jackson counties; whereas, MMNS (2011) shows the manatee only occurring in coastal waters off of Harrison County.

2.14.4 Presence in the Project Area or Study Area

Manatees are known to migrate through the study area. In May 2011, two anglers reported hooking a manatee around the Katrina reef near Deer Island, just off the Mississippi Coast (Raines, 2011). Since 1998, seven manatee sightings have occurred within the vicinity of the proposed Project area (Carmichael, 2013). This species is transient and is expected to occur in the study area intermittently and potentially in the proposed Project area.

2.15 SUMMARY OF THE STATUS OF LISTED SPECIES

The Gulf sturgeon, green sea turtle, Kemp's Ridley sea turtle, and loggerhead sea turtle have been documented from the Project area. The hawksbill sea turtle, leatherback sea turtle, piping plover, rufa red knot, and West Indian Manatee could potentially occur in the Project area. Thus, these nine species are discussed and analyzed further throughout the document. The five whale species (blue whale, fin shale, humpback whale, sei whale, and sperm whale) are not expected to occur in the Project area; thus, these five whale species will not be discussed or analyzed further in this document.

3.0 DIRECT, INDIRECT, AND CUMULATIVE EFFECTS FROM THE PROPOSED PROJECT

This section details the direct, indirect, and cumulative effects from the Proposed Project Alternative described in Section 1.2.2. Proposed Project activities include new work dredging and fill, maintenance dredging, and dredged material disposal at various areas around the Port for the West Pier Expansion, East Pier Expansion, Turning Basin Expansion, North Harbor Expansion, and construction of a breakwater on the eastern side of the FNC. The effects of proposed Project activities on listed species and/or their habitat include noise, water quality, habitat modifications, and entrainment. Conservation measures would be employed to minimize these effects. Noise and water quality impacts would be short-term and limited to the duration of construction and dredging activities. Furthermore, the area is already utilized by an industrial facility that readily has noise associated with its current operations. Permanent habitat impacts would result from the dredging or filling of approximately 155 acres for the West Pier Expansion, 15 acres for the East Pier Expansion, 9 acres for the North Harbor Expansion, 18 acres for the breakwater, and 85 acres for the Turning Basin (see Table 3). The proposed Project would impact a total area of approximately 282 acres. Since the proposed dredging activities would occur within close proximity of existing navigational channels, it is likely the channel currents would facilitate the recolonization of impacted benthic organisms in the marine environment of the Mississippi Sound. Therefore, permanent habitat impacts as a result of the proposed PGEP dredging activities are expected to be minimal.

The new work dredging associated with the construction of the proposed West Pier and East Pier expansions, North Harbor and West Pier berthing areas, and the Turning Basin Expansion is estimated to require removal of approximately 7.5 mcy of material, including 560,000 cy of dredged material (debris from East Pier) that would be designated for upland disposal (Table 5). Following construction of the Turning Basin Expansion, the MSPA would be responsible for maintenance dredging of the portion of the new Turning Basin that is not part of the federally authorized project, as well as the berthing areas associated with the expanded East Pier, North Harbor, and West Pier. Maintenance dredging associated with these areas is anticipated to require removal of approximately 313,000 cy to 1.3 mcy every year (Table 5). A DMMP was prepared to evaluate potential placement options for the new work and maintenance dredged material associated with the Proposed Project Alternative (Anchor QEA LLC, 2015a, Appendix E of the EIS). Estimated dredge quantities assume maintenance for a 30-year period. At this time, it is expected that new work dredging would occur using a mechanical/hopper dredge and maintenance dredging would occur using a hydraulic/cutterhead or mechanical/hopper dredges, as necessary. Sites considered for placement of dredged material include:

- Use as fill for the West Pier Expansion
- 12 designated BU sites
- Thin layer placement

- Candidate BU sites
- Placement in a proposed ODMDS

Potential entrainment of listed species during dredging activities would be the most significant potential impact associated with the proposed Project. Dredging and disposal methods in the study area would be consistent with recent and current maintenance and new work dredging methods used by the USACE in Pascagoula, Mobile, and Gulfport harbors. These methods have been addressed in a number of previous environmental documents, including BAs and Biological Opinions (BOs), regarding threatened and endangered species. Specific effects from the Proposed Project Alternative are discussed in the following sections.

Table 5
Summary of Proposed Project Alternative Impacts

	Proposed Expansion Footprint (acres)	Estimated Acreage Impact (acres)	Estimated New Work Dredged Material Quantities	Estimated Maintenance Dredged Material Quantities (every year)
West Pier	155	155	2.4 mcy	0
East Pier	14.5	15	560,000 cy*	63,000–172,000 cy
North Harbor	9	9	845,000 cy	39,000–581,000 cy
Turning Basin	85	85	3.7 mcy	211,000–586,000 cy
Breakwater	18	18	0	0
Total	281.5	282	7.5 mcy	313,000–1.3 mcy

*Material designated for upland disposal.

3.1 NOISE

Fish are thought to use sound in a number of ways that are important to their survival. For example, sound can be used by fish to understand their surrounding environment, detect predators and prey, orient themselves during migration, and for acoustic communication (USFWS, 2015). Potential direct take could result from elevated underwater noise form proposed Project construction activities (e.g., dredging, pile driving) resulting in instantaneous death, latent death soon after exposure, or death several days later. Indirect take could potentially make fish susceptible to predation, disease, starvation, or affect an individual's ability to complete its life cycle. Behavioral changes resulting from underwater noise could cause fish to alter their movement and foraging patterns. If foraging shifts from food-rich to food-poor habitat patches or energy expenditures for foraging increase, overall fitness of the fish may decline (USFWS, 2015).

The West Indian manatee is the only endangered mammal likely to visit the study area, albeit infrequently. The MMPA of 1972 (16 U.S.C. § 1361 et seq.) established, the "taking" of marine mammals in waters or on lands under United States (U.S.) jurisdiction. The term "take," as defined in Section 3 (16 U.S.C. § 1362 [13]) of the MMPA, means "to harass, hunt, capture, or kill, or attempt to

harass, hunt, capture, or kill any marine mammal." "Harassment" is further defined in the 1994 amendments to the MMPA, which establishes two levels of harassment: Level A (potential injury) and Level B (potential behavioral disturbance). The potential effects of pile driving on marine mammals (e.g. West Indian manatee) and sea turtles would be expected to be similar to those effects on fish and depend on several factors which may include, but are not limited to: the species, animal size, and proximity to the underwater noise source; the intensity and duration of the pile driving noise; the depth of the water column; and the type of substrate. Impacts to marine mammals and sea turtles from pile driving activities, if any, would be related to the level and duration of the noise exposure along with consideration of the distance between the marine animal and the source. Shallow water environments can be more structurally complex and lead to rapid sound attenuation. However, soft estuarine mud and sand bottoms can absorb or attenuate the noise and require less intensity and time to drive the pile.

The Proposed Project Alternative may result in underwater noise from pile installation, dredging, and boat traffic associated with the proposed construction activities. The Mississippi Sound currently experiences moderately high volumes of boat traffic, particularly from large vessels accessing the Port. Noise may be generated by vessels associated with construction of the Proposed Project Alternative; however, noise levels are not expected to add to the current background noise levels from existing boat traffic. Therefore, noise from vessels and barges will not be discussed further in this analysis.

Underwater noise associated with construction activities may occur from pile installation. Underwater pile driving activities have the potential to produce high intensity sound pressure underwater, which could cause injurious or lethal impacts to fish (Caltrans 2001; Hastings and Popper 2005; Popper and Hastings 2009). Underwater sounds with a sharp sound pressure peak occurring in a short interval of time can affect fish with swim bladders, such as sturgeon (Caltrans 2001). High pressure waves from underwater noise can pass through fish, causing the swim bladder to be rapidly squeezed and then rapidly expanded as the sound wave passes through the fish. Other impacts may include the rupture of capillaries in internal organs as indicated by observed blood in the abdominal cavity, and maceration of the kidney tissues (Caltrans 2001).

The Fisheries Hydroacoustic Working Group (FHWG), a multi-agency work group, developed criteria for the acoustic levels at which various physiological effects to fish could be expected (FHWG, 2008). The criteria were developed primarily for species on the west coast of the United States; however, the NMFS and USFWS have relied on these criteria for assessing projects on the east coast and the Gulf for sound effects analysis (USFWS, 2015). The FHWG determined that peak sound pressure waves should be within a single strike threshold of 206 decibels (dB), and the cumulative sound exposure level (cSEL) associated with a series of pile strike events should be less than 187 dB cSEL to protect listed fish species that are larger than 2 grams, and less than 183 dB cSEL for fish species that are smaller than 2 grams (FHWG 2008).

The Proposed Project Alternative includes the installation of approximately 4,000 pre-stressed concrete piles for construction of the new wharf associated with the West Pier Expansion. These piles would

consist of approximately 2,680 24-inch x 24-inch square, pre-stressed concrete piles that range in length from 80 feet to 100 feet. The remaining 1,320 piles would be 36-inch cylindrical, hollow, pre-stressed concrete piles installed along the outside edge of the wharf to support the crane rail. The proposed installation plan estimates driving 6 piles per day in approximately 20-foot water depth, within a 10-hour work day. Using one installation rig, the installation would occur 6 days per week and take approximately 2.5 years to complete. However, if a second installation rig is utilized, up to 12 piles could be driven in a single work day. The installation may include pre-augering or jetting the piles for the first 65 to 70 feet; the remaining 10–15 feet would be driven with a standard pile-driving hammer to set the bearing capacity of the pile. The estimated total number of strikes per day would range from 3,768 to 15,132.

The NMFS Pile Driving Calculator Model was used to assess the potential underwater noise impacts from pile driving for the Proposed Project Alternative (NMFS, 2015). This model is based on data from similar piles in similar substrate and requires an estimate of the total number of strikes per day to install the piles. Assumptions for input into the NMFS model were based on the number of strikes proposed for the 24-inch x 24-inch square pre-stressed concrete piles and the 36-inch cylindrical, hollow, pre-stressed concrete piles. Reference noise levels were selected from the Compendium of Pile Driving Sound Data, updated in October 2012, provided as Appendix I to Caltran's Final Technical Guidance for Assessment and Mitigation of the Hydroacoustic Effects of Pile Driving on Fish (February 2009) to represent the proposed Project (Caltrans, 2012).

Based on the size of the piles and estimated water depth, noise generated by installation of the square and cylindrical piles is estimated to be 185 dB peak, with a cumulative strike sound exposure level of 207 dB cSEL, and root mean square (RMS) sound levels of 163 dB (square piles) and 165 dB (cylindrical piles). Based on a scenario of 3,768 total strikes per day (2,512 strikes for the square piles and 1,256 strikes for the cylindrical piles), the model analysis shows that the threshold for physical injury to listed fish species that are larger than 2 grams would have the potential to be exceeded up to 705 feet from the installation site for both square and cylindrical piles. The threshold for physical injury to listed fish species that are smaller than 2 grams would have the potential to be exceeded up to 1,118 feet for the square piles and 1,302 feet for the cylindrical piles.

Calculations for the pile driving scenario of 15,132 total strikes per day (10,088 strikes for the square piles and 5,044 strikes for the cylindrical piles), show that the noise generated by installation of the square and cylindrical piles is estimated to be 185 dB peak, with a cumulative strike sound exposure level of 213 dB cSEL, and RMS sound levels of 163 dB (square piles) and 165 dB (cylindrical piles). The threshold for physical injury would have the potential to be exceeded within up to 1,118 and 1,775 feet from the installation site of square piles and cylindrical piles, respectively, for listed fish species both larger and smaller than 2 grams. Table 6 provides a summary of the NMFS Pile Driving Calculator Model outputs for this analysis.

Table 6
Proposed Project Alternative NMFS Pile Driving Calculator Model Underwater Noise Analysis

Analysis Based on 3,768 Total Strikes Per Day									
	Source sound at 33 feet			**Estimated Number of Strikes (total)**	**SEL, accumulated**	**Distance (feet) to threshold**			
						Onset of Physical Injury			**Behavior**
							Cumulative SEL dB*		
Pile Type	**peak sound dB**	**SEL, single strike dB**	**RMS dB**			**Peak dB (206)**	**Fish ≥2 grams (187)**	**Fish <2 grams (183)**	**RMS dB (150)**
24-x-24-inch Square Pre-Stressed Concrete	185	173	163	2512	207	0	705	1,118	74
36-inch Cylindrical Pre-Stressed Concrete	185	176	165	1256	207	0	705	1,302	100
Analysis Based on 15,132 Total Strikes Per Day									
	Source sound at 33 feet			**Estimated Number of Strikes (total)**	**SEL, accumulated**	**Distance (feet) to threshold**			
						Onset of Physical Injury			**Behavior**
							Cumulative SEL dB		
Pile Type	**peak sound dB**	**SEL, single strike dB**	**RMS dB**			**Peak dB (206)**	**Fish ≥2 grams (187)**	**Fish <2 grams (183)**	**RMS dB (150)**
24-x-24-inch Square Pre-Stressed Concrete	185	173	163	10088	213	0	1,118	1,118	74
36-inch Cylindrical Pre-Stressed Concrete	185	176	165	5044	213	0	1,775	1,775	100

* This calculation assumes that single strike SELs < 150 dB do not accumulate to cause injury (Effective Quiet).
dB = decibels
SEL = sound exposure level
RMS = root mean square

Based on the underwater noise analysis, the proposed pile driving of the aforementioned piles would likely exceed the adopted underwater noise thresholds for physical and behavioral (Level B) impacts to fish species, marine mammals and sea turtles. Sound pressure levels in excess of the disturbance threshold (but below the threshold for injury) can potentially cause temporary behavioral changes that may increase the risk for predation and reduce an individual fish's likelihood of foraging or spawning success. For example, a behavioral response of Gulf sturgeon may be to move to areas outside of the noise threshold and avoid the Project area, which may affect normal migratory movements. Notably, comparable pile driving activities to those proposed for the PGEP were occurring at Port facilities as part of the Restoration Project construction while the Gulf sturgeon monitoring was being conducted by Peterson et al. (2015).

Any marine species that are exposed to high sound pressure levels during pile installation may change their normal behavior patterns (e.g. foraging) and such may have only a minor effect on individuals and not likely to affect their populations. The use of vibratory pile driving is non-impulsive, which is not known to cause injury to marine mammals and may be used along with other underwater noise mitigation measures to reduce noise exposure to marine species. While some underwater noise exposure will be unavoidable, minimization measures are expected to reduce or avoid most potential adverse underwater impacts to marine species from pile driving activities. Therefore, no significant impacts to fish, marine mammals, and sea turtles are anticipated as a result of the Proposed Project Alternative.

Noise impacts from dredging associated with the Proposed Project Alternative may occur. It is estimated that a dredge would have a noise level of 70 dBA (A-weighted decibels) at 50-foot water depth (see Section 4.6.4.1 of the EIS). Based on this information, the noise level produced from dredging activities would be below the interim fish injury thresholds currently accepted by the NMFS, 206 dB peak level sound measurement (LPEAK) and 187 dB cSEL (Federal Highway Administration, 2012). The noise level produced from dredging activities would also be below the interim guidance for Level A (180 dB RMS) and Level B (160 RMS) for marine mammals within 66 feet of an active dredge (NOAA, 2012). Injury thresholds are not likely to be exceeded. The probability of noise impacts to marine species from dredging noise impacts would be expected to be minimal.

3.2 ENTRAINMENT IN DREDGING EQUIPMENT

Past construction and maintenance of the FNC via dredging equipment has been identified as potentially a significant source of sea turtle and Gulf sturgeon mortality or injury (NMFS, 2007b, 2012). Operations involving hopper dredge suction dragheads, bed-leveling operations, and relocation trawlers have been identified as potential sources of sea turtle injury/mortality (NMFS, 2012). Impacts may also include avoidance of the Project area during construction and maintenance operations because of disturbance, lighting, and disposal of dredged material. Of these, only interactions with hopper dredges, bed-leveling, and relocation trawlers have the potential for adverse impacts. The BO for the Bayou Casotte and Lower Pascagoula Sound Channel Widening Project (NMFS, 2012) concludes that for all sea turtle species, the use of cutterhead dredges, lighting effects from the hopper and cutterhead dredges, and placement of dredged material are not likely to adversely affect sea turtles. Reasons for this conclusion include: (1) sea turtles are mobile enough to avoid the cutterhead dredges used in the Gulf; and (2) lighting installed on cutterhead dredges would have no impact on sea turtles, because no turtle nesting beaches occur near the action area, and the MSPA would follow the lighting guidelines in the reasonable and prudent measures set forth in the Gulf of Mexico Regional Biological Opinion (GRBO) (NMFS, 2005, 2007c).

For the proposed Project, the potential for incidental take exists, because hopper dredges are known to adversely impact sea turtles and Gulf sturgeon by entrainment. Therefore, the proposed Project could result in harm, injury, or harassment to sea turtle species or Gulf sturgeon. In order to reduce the potential for take, MSPA will adhere to the proposed avoidance and minimization measures in the GRBO (NMFS, 2007c). These have largely been incorporated in USACE regulatory and civil works projects throughout

the Gulf for more than a decade and are acknowledged by the USFWS and NMFS to reduce impacts to sea turtles. The avoidance, minimization, and conservation measures that would be employed during hopper dredging operations for the proposed Project include onboard observers, screening, sea turtle deflecting draghead and dredging pumps, dredge lighting, dredge take reporting, STSSN notification, and relocation trawling (NMFS, 2007c). These measures are discussed in more detail in Section 4.19. Should incidental take of sea turtles, particularly Kemp's ridley, loggerhead, and green turtles, and the Gulf sturgeon occur, the GRBO has an allotted take amount. The leatherback and hawksbill sea turtles are less likely to be impacted, since they are less likely to occur in the study area or proposed Project area.

3.3 TURBIDITY AND RESUSPENDED SEDIMENTS

Suspended solids vary broadly in the Mississippi Sound and the study area, with periods of high natural turbidity. According to the U.S. Environmental Protection Agency (EPA, 2013), mean total suspended solids in the study area was 20 mg/L and ranged from 6 to 68 mg/L. River inflows carry sediments and wind-driven currents suspend sediments in Mississippi Sound. However, dredging activities can affect water quality by further increasing turbidity. In general, levels of suspended sediments are expected to be highest closest to the dredging and placement operations. The amount and extent of resuspension is a byproduct of several factors, including physical properties of the sediment, site conditions, nature and extent of debris, obstructions, and operational considerations of the dredge equipment and operator.

Resuspended sediment and turbidity can affect fish via several mechanisms, including direct mortality, gill tissue damage, physiological stress, and behavioral changes (Fry, 1971). The level of impact to individuals depends on the amount of time an individual is exposed to suspended sediments, the concentration of suspended sediment in the water column, and the composition of the sediments (e.g., fine-grained versus coarse-grained, chemical associations). Impacts could result in lethal or sub-lethal physical or behavioral responses from aquatic organisms.

Although turbidity would increase whenever sediment is being removed (dredging) and placed (filling), measurable increases in turbidity would be temporary, lasting only days after dredging activity is completed, and would not extend far beyond the area where sediment is being disturbed. Appropriate turbidity control measures would be used to keep turbidity levels to a minimum and within the immediate dredge and fill area. Turbidity increases would not exceed the Mississippi Department of Environmental Quality's turbidity standard of 50 Nephelometric Turbidity Units above background outside a 750-foot mixing zone around dredged material placement areas in coastal areas of Mississippi (Anchor QEA LLC, 2015a, Appendix E of the EIS).

3.4 DISSOLVED OXYGEN, SALINITY, AND WATER TEMPERATURE

Water quality in the Mississippi Sound is highly variable depending on the season, weather, and water depth. Construction activities proposed for the PGEP are expected to cause site-specific temporary changes to water quality, such as suspension of anoxic sediments during dredging, which can result in reduced DO in the water column as the sediments oxidize, and sublethal effects of DO concentrations

below saturation. Since the increased area with low DO would be very small, it should not alter ecological health in the study area or Mississippi Sound.

Once the proposed Project is operational, some areas (i.e., Turning Basin) around the Port are expected to have lower DO concentrations than under current conditions due to the deeper depths. Aquatic species in the study area occupy both shallow and deep water habitats and are accustomed to high fluctuations of DO, salinity, and temperature in the Mississippi Sound from existing natural processes. Thus, significant effects to listed species from temporary changes in localized water quality conditions during dredging are not anticipated.

3.5 DISTURBANCE OF BENTHIC PREY

A study of benthic macroinvertebrates was conducted to identify suitability of prey for the Gulf sturgeon in the Project area in April 2012 (see Appendix G of the EIS). Samples were taken from 48 sample locations within the Project footprint, Project area, and study area. The samples yielded a total of 105 benthic macroinvertebrate taxa with polychaete worms, ribbon worms, decapods, amphipods, and bivalves most common in the study area. Some of the species important to the Gulf sturgeon diet were collected close to the proposed Project footprint, indicating that Gulf sturgeon may potentially forage in the Project area.

Dredging, disposal, and filling would cause the complete removal or burial of benthic species within the Project footprint, causing loss of Gulf sturgeon foraging opportunities in the vicinity of the proposed Project. Although some impacts would be temporary and some permanent, resulting from fill for example, it is important to note that Gulf sturgeon rely completely on the benthic habitat of the Mississippi Sound for feeding. However, only few areas in the Project area that might serve as foraging habitat were found (see Appendix G of the EIS). These areas appeared to be marginal, and the total Project footprint is relatively small relative to the range of the Gulf sturgeon in Mississippi Sound. While the proposed Project would temporarily affect foraging habitat for Gulf sturgeon, the species is known to forage around the offshore islands, which would remain as a potential foraging area during Project construction. In addition, the sediment material of the proposed Project area is composed primarily of silts and clays, which is not suitable substrate for supporting Gulf sturgeon benthic prey items.

The proposed Project would not be expected to negatively affect sea turtle foraging habitat. Leatherback sea turtles are pelagic feeders and modification of benthic habitat through dredging and disposal activities would not affect pelagic resources. Green sea turtles are largely herbivorous, feeding primarily on seagrasses or macroalgae that do not exist in the Project area. Kemp's ridley and loggerheads are generalist carnivores, typically preying on benthic mollusks and crustaceans in the nearshore environment. Dredging activities would only have temporary impacts on the foraging habitats of these species. Although filling activities would result in the permanent loss of the areas filled, as stated above, sea turtles are not likely to forage in the fill areas of the proposed Project area.

3.6 DREDGED MATERIAL DISPOSAL SITES

A DMMP was prepared to evaluate potential placement options for new work and maintenance dredged material associated with the Proposed Project Alternative (Anchor QEA LLC, 2015a, Appendix E of the EIS). Sites considered for placement of dredged material, as discussed in Section 1.2, include:

- Use as fill for the West Pier Expansion
- 12 designated BU sites
- Thin layer placement
- Candidate BU sites
- Placement in an approved ODMDS

In summary, new work dredged material structurally suitable would be used for fill at the Project site. Any material not structurally suitable would be evaluated for potential beneficial use and possible placement at a designated or candidate BU site, such as the BMC. If the BMC is not permitted prior to dredging, and no other suitable BU sites are available, the Pascagoula ODMDS would be used for disposal of new work dredged material if the material is determined to be in compliance with Section 103 of the MPRSA (33 USC 1413). If the dredged material is not suitable for the ODMDS, the material would be placed in an approved and permitted upland disposal site(s). Depending on which sites are used in coordination with the responsible permitting agencies, various species have the potential to be impacted from burial, to clogging of gills, to impacts on benthic prey species. Most organisms are highly mobile and are expected to move from the area until it returns to normal. However, some species such as brittle stars, sea lancelets, and other benthic species would not be able to move from the affected area, thereby temporarily impacting the availability of prey to benthic feeders such as the Gulf sturgeon.

3.7 POTENTIAL INDIRECT PROJECT EFFECTS

As a result of the proposed Project, indirect effects are expected to occur. However, the magnitude of impact resulting from indirect effects should naturally be reduced as distance and time from the Project area increases. Indirect effects associated with the proposed Project include increased traffic in the channel, resulting in increased noise and propwash. Sea turtles and Gulf sturgeon are anticipated to either acclimate to the additional noise or vessel traffic or use other areas of Mississippi Sound, since these species are highly mobile and boats and vessels currently traverse the sound. Increased propeller scour occurring during low tide events may have some minor impacts on the benthic community in the FNC; however, such disturbances are anticipated to be rare due to the depth and width of the channel. Additionally, increased traffic would cause an increased risk of vessel strikes to whales outside the study area.

3.8 POTENTIAL EFFECTS OF INTERRELATED/ INTERDEPENDENT ACTIONS

Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the proposed Project under consideration. No potential interrelated/interdependent actions associated with the proposed Project are known.

3.9 CUMULATIVE EFFECTS

Cumulative effects are effects of future state, tribal, local, or private activities, not involving Federal activities, that are reasonably certain to occur within the study area of the Federal action subject to consultation (50 CFR §402.02). The purpose of this cumulative effects summary is to aid the USFWS and NMFS in making a jeopardy/no jeopardy determination for a species, preparing BOs, and tracking the environmental conditions throughout the area. A comprehensive cumulative impact assessment is presented in Section 5 of the EIS.

In summary, five projects were determined to be "reasonably foreseeable future actions" to occur in the vicinity of the Proposed Project Alternative. These projects include the Ward Investments Project, Maritime Commerce Center, Gulfport FNC Modification with Bend Easing, Mississippi Department of Transportation's I-310 Project, and the MsCIP Barrier Island Restoration Project (Ship Island and Cat Island) and all occur within the study area. Project details or potential impacts to the surrounding environment are not available for the Maritime Commerce Center. At this time, no other project details or potential impacts to the surrounding environment are available; thus, this project was not included in the cumulative impacts analysis.

In addition, the following projects or actions represent "past or present actions" relative to the study area:

- Maintenance Dredging (refer to Section 5.3.1 in the EIS for recent maintenance dredging activities)
- Beneficial Use Sites and ODMDS
- Gulfport Harbor Navigation Channel Widening Project
- Port of Gulfport Restoration Project 84-acre site (referred to as the "Port of Gulfport Restoration: 60-acre fill" and "Port of Gulfport Restoration 24-acre fill" in Table 7)
- Kansas City Southern (KCS) Railway Rail Improvements Project
- City of Gulfport Small Craft Harbor Redevelopment
- Widening of the Pascagoula Lower Sound/Bayou Casotte Channel
- MsCIP Interim Near-Term Projects
  - Shearwater Bridge Erosion Control and Hurricane Storm Damage Reduction
  - Long Beach Canals

  - Harrison County Beaches Ecosystem Restoration and Hurricane Storm Damage Reduction
  - Courthouse Road Flood Damage Reduction and Ecosystem Restoration

- MsCIP Comprehensive Plan Projects
  - Coast-wide Beach and Dune Ecosystem Restoration
  - West Ship Island North Shore Restoration
  - Deer Island Ecosystem Restoration
  - Forrest Heights Levee Improvements
  - Turkey Creek Ecosystem Restoration

- Coastal Impact Assessment Program (CIAP) Projects
  - Henderson Point Greenway
  - Blakeslee Preserve Habitat Restoration
  - Tchoutacabouffa River Greenway
  - Biloxi River Greenway
  - Harrison County Watershed Assessment and Restoration Projects
  - Oyster Bayou Restoration
  - Acquisition and Restoration of Flood-prone Properties for Green Space, Phases 1 and 2

Placement of dredged material at the Pascagoula ODMDS and possible BMC site represent "past or present actions," and occur just outside of the study area. These actions were not included individually in the resource tables because their impacts are generally limited to only a few resource areas; however, they are described and their impacts are included for applicable projects utilizing these locations and in the total column of resource tables. Projects that are deemed to have no effect on any listed species or have insufficient details to make a determination of the level of impact are not included in this cumulative effects analysis.

3.9.1 Gulf Sturgeon

The proposed Project is located within Gulf Sturgeon Critical Habitat Unit 8, which includes areas of the Mississippi Sound surrounding the FNC. A benthic habitat assessment of the Project area was completed in 2012 (see Appendix G of the EIS), wherein Gulf sturgeon preferred habitat was located in the North Harbor Expansion, West Pier Expansion, and west of the West Pier Expansion areas. Impacts to the water quality, sediment quality, and migration habitat PCEs for the Gulf sturgeon would be localized and temporary. Increased vessel traffic that is expected with the proposed Project Alternative could slightly increase the potential for a petroleum spill impacting Gulf sturgeon. Dredging, dredged material placement, and fill operations would temporarily reduce benthic feeding areas, thereby affecting the quality, quantity, and availability of prey for the Gulf sturgeon.

Peterson et al. 2015 (Appendix O of the EIS) found that individual Gulf sturgeon were detected taking both transitory paths through the Project area, and localized movements within the entire study area. The data suggest that the monitored habitat area serves as a corridor between other habitat types, drainages, feeding zones, or is used as a pre-/post-migratory acclimation zone for the Gulf sturgeon. Studies are underway in the Mississippi Sound, between West and East Ship islands, and around the proposed Project area (ERDC, 2013). Data from these studies suggest that Gulf sturgeon utilize the barrier islands and nearshore waters in the Pascagoula River and distributary. Permanent habitat impacts from the proposed Project are expected from the filling of approximately 155 acres of existing estuarine mud and sand bottom habitat for the West Pier Expansion, 15 acres for the East Pier Expansion, 9 acres for the North Harbor Expansion, and 18 acres for the breakwater. Potential impacts to Gulf sturgeon from the proposed Project include permanent reduction of critical habitat area; temporary degradation of critical habitat due to suspended solids, noise from increased vessel traffic, reduced DO, and burial of benthic organisms (prey items); reduction in the availability of prey for foraging during dredging and placement activities; entrainment during dredging and placement activities; behavioral impacts due to construction noise from pile driving and dredging activities; and reduction in habitat quality around construction areas (e.g., elevated turbidity and low DO during dredging and placement). Potential impacts from other evaluated projects that involve dredge, fill, and/or placement activities, have been and would be similar, as shown in Table 7. Avoidance, minimization, and other conservation measures for sea turtles (see Section 4.2.2, below) would reduce adverse cumulative effects on the Gulf sturgeon.

Current evaluation based on available information indicates that the proposed Project may affect, but is not likely to adversely affect the Gulf sturgeon. A benthic habitat assessment was conducted for the proposed Project (see Appendix G of the EIS). Based on the information gathered for this report and published data, it is unlikely that adult Gulf sturgeon would use the proposed Project footprint for feeding during construction and placement activities. Although some of the habitat characteristics are similar to those found near Gulf sturgeon in other parts of Mississippi Sound, not all habitat characteristics were present at any one sample location, and the ongoing Port operations likely deter Gulf sturgeon from persisting in this area. Additionally, published literature show adult Gulf sturgeon congregate near the barrier island passes and use nearshore habitat for moving between river mouths (Ross et al., 2009; Havrylkoff et al., 2012). Therefore, adult Gulf sturgeon are likely to pass through the Project area, but are not likely to feed there.

Other evaluated projects have and will contribute to potential adverse impacts to the Gulf sturgeon include the Gulfport Harbor Navigation Channel Widening Project, Proposed Widening of the Pascagoula Lower Sound/Bayou Casotte Channel, Port of Gulfport Restoration Project, and maintenance dredging, as shown in Table 7. Despite ongoing construction of the Port of Gulfport Restoration Project over the past several years, Gulf sturgeon monitoring efforts show passage of tagged individuals through the Port and the use of benthic habitat in the immediate vicinity. Additionally, recent published data from tagging and monitoring studies suggest that Gulf sturgeon utilize the nearshore habitat directly east of the Port and approximately 8 miles east of the Port more than they use the habitat surrounding the Port and west of the Port (Peterson et al., 2015 (Appendix O of the EIS)). This suggests that the existing Port structure may

already serve as a signal/indicator for Gulf sturgeon to swim around and stay away from the Port. The potential for impacts to the Gulf sturgeon will vary by time of year, depending on when activities are conducted, given that the species is most likely to occur in Mississippi Sound in fall and winter months.

For the USACE Mobile District, according to the GRBO, the documented annual incidental take, by injury or mortality, is expected to consist of two Gulf sturgeon per fiscal year for all channel dredging and sand mining by hopper dredge. Gulf-wide, this estimate includes the annual documented incidental take per fiscal year, by injury or mortality from hopper dredging, of four Gulf sturgeon, as well as non-injurious take of no more than eight Gulf sturgeon, and lethal or injurious takes of up to one Gulf sturgeon, from all yearly relocation trawling in the Gulf. Further, NMFS estimates that approximately 50 percent of all take goes undocumented, and as such, included such take in their evaluation in which they determined that anticipated hopper dredging will not jeopardize the continued existence of any listed species or destroy or adversely modify designated Gulf sturgeon critical habitat (NMFS, 2003, 2005, 2007c). Maintenance activities using hopper dredging in existing federally authorized channels would comply with GRBO guidelines, which would limit the level of impact to the Gulf sturgeon. Although reduced under the proposed Project, the general increase in vessel traffic within the Mississippi Sound would increase the risk for spills, as previously discussed, which could have an adverse cumulative effect on the species. Adverse impacts from these projects would be offset to some degree by benefits from restoration, protection, and conservation projects in the MsCIP and CIAP that would positively affect the Gulf sturgeon, as shown in Table 7.

3.9.2 Sea Turtles

Under the proposed Project, new work and maintenance dredging activities have the potential to negatively impact all five federally listed sea turtle species, should they be present in the Project area during the time of construction. Adverse effects could occur from impingement, temporary physical and behavioral impacts from noise, increased turbidity and resuspended sediment, and loss of benthic food resources during dredging and placement activities. Potential entrainment of listed sea turtle species during dredging activity is the most significant potential impact associated with the proposed Project. Avoidance, minimization, and other conservation measures formalized by NMFS in the GRBO (NMFS, 2003, 2007c) and adopted for the proposed Project would greatly reduce the likelihood of adverse effects to these sea turtle species (see Section 4.0, below).

Other dredging activities for past, present, and reasonably foreseeable future projects have had and will continue to have potential adverse impacts to sea turtles, similar in nature to those for the proposed Project and as provided in Table 7. Although no green, hawksbill, or leatherback sea turtles have been reported as taken from recent dredging activities, two incidental takes of Kemp's ridley were reported from 2002 to 2013 within the Gulfport Harbor and FNC. In 2007, a non-lethal take of a leatherback occurred during dredging of the federally authorized Gulfport FNC; no lethal takes of leatherbacks have been reported during dredging activities in Mississippi waters (USACE, 2013). For the Gulfport Harbor Navigation Channel Widening Project, 71 Kemp's ridleys, 5 loggerheads, and 1 green sea turtle were

captured and relocated, and 1 loggerhead turtle was taken during dredging operations for this project in 2011 (USACE, 2013). For the USACE Mobile District, the documented annual incidental take, by injury or mortality, is expected to consist of 3 Kemp's ridleys, 3 green, 1 hawksbill, and 5 loggerhead turtles per fiscal year for all channel dredging and sand mining by hopper dredge. Gulfwide, according to the GRBO this estimate includes the documented annual incidental take per fiscal year, by injury or mortality from hopper dredging, of 40 loggerheads, 20 Kemp's ridleys, 14 greens, and 4 hawksbills, as well as noninjurous take of no more than 300 loggerhead, green, hawksbill, and Kemp's ridley sea turtles, and lethal or injurious takes of up to 2 sea turtles from all yearly relocation trawling in the Gulf. Further, NMFS estimates that approximately 50 percent of all take goes undocumented, and have, therefore, included such take in their evaluation, in which they determined that anticipated hopper dredging will not jeopardize the continued existence of any listed species or destroy or adversely modify designated critical habitat for the sea turtles (NMFS, 2003, 2005, 2007c).

For projects and activities with a Federal nexus (e.g., commercial fisheries, maintenance dredging of Federal channels, etc.), Section 7 consultations have and are anticipated to minimize the cumulative adverse effects of evaluated projects on all listed species. Nonetheless, incidental by-catch from commercial ship trawling, especially shrimping, and other fishing activities, in addition to other threats previously discussed, have and will continue to adversely impact these federally listed sea turtle species, having a cumulative effect of an indeterminable degree. Vessel traffic in the Port, and presumably the Gulf and surrounding Mississippi Sound channels, is projected to increase in the future without completion of the proposed Project due to past, present, and reasonably foreseeable future projects under the No-Action Alternative. Increased vessel traffic, and commensurate rise in spill risk and contribution of pollutants and trash, would likely present greater risk of incidental take (e.g., vessel collision, poisoning, ingestion or entanglement in marine debris) of federally listed sea turtle species within the study area. Likewise, increased recreational vessel traffic and fishing would contribute to increased risk of incidental take. Regardless, with or without implementation of the proposed Project, vessel traffic within the study area will increase in the future, which would have adverse cumulative effects on federally listed sea turtles, such as increased collision risk and higher potential for spills when compared to current conditions. These adverse impacts could be offset to some degree by other projects, such as the Deer Island Restoration Project, which have and will continue to benefit these sea turtle species.

3.9.3 Piping Plover

Historic adverse impacts to the piping plover have resulted from numerous stressors, such as shorebird hunting, loss or modification of habitat resulting from commercial, residential, and recreational developments, dune stabilization, river impoundment and channelization (eliminating sandbars, encroachment of vegetation, and altering water flows), and wetland drainages. Under the proposed Project, noise impacts to piping plover are anticipated to be minimal and temporary, as these birds would likely acclimate to the disturbance. A modeling evaluation of impacts to Harrison County beaches showed that the proposed Project would not result in significant changes in wave heights or breaking wave angles along the adjacent beaches (Anchor QEA LLC, 2015b). As a result, it is unlikely the proposed Project

would affect piping plover beach habitat. A pre-discharge survey would be completed to minimize adverse impacts from beneficial use of dredged materials as part of the proposed Project. Evaluated projects have and will result in both beneficial and adverse impacts on the species. For instance, temporary displacement of individual piping plovers may result from the Coast-wide Beach and Dune Restoration Project and maintenance dredging. Moreover, the Gulfport Small Craft Harbor Redevelopment resulted in the loss of 0.96 acre of shoreline foraging and roosting habitat. However, long-term beneficial cumulative impacts would result from habitat restoration and protection afforded under MsCIP and CIAP projects, which would result in increased habitat availability and decreased rate of habitat loss. Given the temporary and localized nature of adverse impacts to piping plover from evaluated projects in relation to the benefits from restoration projects, it is reasonable to anticipate cumulative beneficial effects on the species from the evaluated projects.

3.9.4 Rufa Red Knot

Threats to the rufa red knot shoreline habitat occur throughout its entire range and include shoreline stabilization/erosion, coastal development, beach cleaning, invasive vegetation, agriculture, and aquaculture. The subspecies-level impacts from these activities are expected to continue into the future. Similar to the piping plover, noise impacts to the rufa red knot associated with the proposed Project are anticipated to be minimal and temporary, as these birds would likely acclimate to the disturbance. A predischarge survey would be completed to minimize adverse impacts from beneficial use of dredged materials as part of the proposed Project. Evaluated projects have and will result in both beneficial and adverse impacts on the species. For instance, temporary displacement may result from the Coast-wide Beach and Dune Restoration Project and maintenance dredging. Moreover, the Gulfport Small Craft Harbor Redevelopment resulted in the loss of 0.96 acre of shoreline foraging and roosting habitat. However, long-term beneficial cumulative impacts would result from habitat restoration and protection afforded under the MsCIP and CIAP projects, which would result in increased habitat availability and decreased rate of habitat loss. Given the temporary and localized nature of adverse impacts to the rufa red knot from evaluated projects in relation to the benefits from restoration projects, it is reasonable to anticipate cumulative beneficial effects on the species from the evaluated projects.

3.9.5 West Indian Manatee

The proposed Project may affect but is not likely to adversely affect the West Indian manatee, which may migrate through the study area. The major threat to this species is collision with watercraft. Vessel traffic, as discussed above for sea turtles, is anticipated to increase in the future without the proposed Project, and would be reduced under the Proposed Project Alternative compared to the No-Action Alternative. Nonetheless, increased commercial and recreational vessel traffic in the foreseeable future would result in cumulative adverse impacts to the species through increased risk of collision. New work and maintenance dredging, construction, and disposal activities would result in localized, temporary impacts (e.g., elevated noise and turbidity) to the species, which would likely cause avoidance of these areas by the West Indian manatee. The species would still be anticipated to travel across the study area, without impediment to

mobility. Based on the lack of spatial overlap in impact areas, the separation in timing of activities, and the very low likelihood of interaction, direct, indirect, or cumulative adverse impacts on the manatee are unlikely in the study area. Beneficial cumulative effects could result from the MsCIP and CIAP projects that protect and restore the marine, estuarine, and freshwater environments that manatees depend on, although benefits would be limited due to the infrequent occurrence of the species. Since 1998, seven manatee sightings have been reported within the vicinity of the proposed Project (Carmichael, 2013), and the species is transient, occurring in the study area intermittently.

Table 7
Cumulative Impacts to Threatened and Endangered Species

Action	Threatened and Endangered Species
Proposed Project Alternative	Temporary impacts from construction, dredging, and placement; short-term increases in turbidity and reduced DO conditions; sea turtles, especially Kemp's ridley, most likely to be affected negatively by dredging activities; possibility of entrainment mortality of Gulf sturgeon by dredging equipment
Ward Investments Project	N/A; however, regulatory compliance would be required under Section 404 of the CWA
Proposed Widening of the Pascagoula Lower Sound/Bayou Casotte Channel	Impacts to open-water communities as a result of increased turbidity during dredging localized around the immediate area of dredging and placement and limited to duration of the plume at a given site, but may temporarily impact localized primary production levels, finfish foraging, and distribution patterns, and filter feeder filtering rates; potential temporary reduction in quality of EFH and displacement of individual species; permanent conversion of 87.6 acres of shallow habitat to deeper habitat and temporary burial of benthic organisms in placement sites; no long-term effects on benthic organisms are expected due to motility, rapid recovery of benthic communities following temporary, short-term impacts in the immediate vicinity of the area dredged; no long-term turbidity impacts on artificial reefs are anticipated because of their distance from the proposed Project area
Gulfport Federal Navigation Channel Modification with Bend Easing Project	Increased chances of impingement and entrainment of some threatened and endangered species. A change in water quality and bottom conditions may occur, including potential water column stratification resulting in hypoxic conditions that may temporarily displace sea turtles. Temporary physical and behavioral impacts to sea turtles and Gulf sturgeon from noise, increased turbidity and resuspended sediment, and loss of benthic food resources during dredging activities. Decreased risk of vessel strikes to mammals due to reduction in vessel traffic. Slight reduction in probability of a petroleum spill due to increased vessel traffic safety.
Barrier Island Restoration (Ship Island and Cat Island)	Placement of approximately 22 mcy of sand in Camille Cut and replenishment of the southern shoreline of East Ship Island and beach-front placement of sand along the eastern shoreline of Cat Island; convert open water to beach habitat; temporary and localized minor impacts during placement activities
Coast-wide Beach and Dune Restoration	Short-term potential displacement during construction and additional unknown impacts requiring consultation; long-term habitat benefits to nesting, roosting, and breeding of listed species, such as piping plover
West Ship Island North Shore Restoration	Positive ecological benefits
Deer Island Restoration	Habitat could benefit threatened and endangered species, such as Gulf sturgeon, piping plover, manatee, and sea turtles; increased piping plover over-wintering habitat; potential temporary impacts to piping plover, manatees, Gulf sturgeon, and sea turtles but species should avoid construction areas due to noise and activity
Forrest Heights Levee Improvement	No impacts anticipated
Turkey Creek Ecosystem Restoration	Positive habitat benefits to some species, such as Mississippi sandhill crane, red-cockaded woodpecker, gopher tortoise, and others, by restoration of wet pine savannah habitat; improved water quality

Action	Threatened and Endangered Species
CIAP Projects	N/A; however, potential benefits from preservation, conservation, and restoration activities
MDOT's I-310 Project	No impact to individuals; impact to potentially suitable habitat for red-bellied turtle and mud salamander
KCS Rail Improvements Project	Project likely to impact, but not adversely impact, the federally threatened gopher tortoise
Courthouse Road Flood Damage Reduction	N/A
Shearwater Bridge Storm Damage Reduction	N/A
Long Beach Canals	N/A
Harrison County Beaches Ecosystem Restoration and Hurricane Storm Damage Reduction	Benefits to threatened and endangered species, such as piping plovers
Port of Gulfport Restoration: 24-acre fill	No measurable impacts to Gulf sturgeon critical habitat as a result of impacts to water quality, migratory pathways, sediment quality, or abundance of prey items related to this project; no reduction to the critical habitat's ability to support the Gulf sturgeon conservation efforts and is not likely to destroy or adversely modify designated Gulf sturgeon critical habitat
Port of Gulfport Restoration: 60-acre fill	No measurable impacts to Gulf sturgeon critical habitat; not likely to destroy or adversely modify designated Gulf sturgeon critical habitat
City of Gulfport Small Craft Harbor Redevelopment	Temporary loss of shoreline foraging and roosting habitat for federally threatened piping plover from excavation of 0.96 acre of existing shoreline immediately east of the proposed Project site to create compensatory shallow water habitat
Maintenance Dredging	Incidental take from injury and mortality of sea turtles and Gulf sturgeon; temporary degradation of Gulf sturgeon critical habitat due to suspended solids, noise, reduced DO, and burial of benthic organisms (prey items); reduction in the availability of prey for foraging during dredging and placement activities; entrainment of Gulf sturgeon and sea turtles during dredging and placement activities; behavioral impacts due to noise from dredging on all listed species; and reduction in habitat quality around dredging areas (e.g., elevated turbidity and low DO levels during dredging and placement activities)
Gulfport Harbor Navigation Channel Widening Project	Temporary and minor potential impacts to sea turtles; potential temporary localized disruption to foraging behavior of Gulf sturgeon in dredge/disposal areas and potential for entrainment of Gulf sturgeon swimming in the dredging areas; potential temporary disruption of roosting behavior of piping plover at the western end of Ship Island; impacts incurred during dredging activities

Action	Threatened and Endangered Species
Qualitative Summary of Cumulative Impacts	Cumulative impacts would include displacement of piping plover, listed sea turtles, West Indian manatee, and Gulf sturgeon during construction, placement, and dredging activities; degradation of habitat quality by these activities; cumulative increase in vessel traffic compared to current conditions would increase risk of petroleum spill and pollution; cumulative increased risk of mortality or injury to listed sea turtles and Gulf sturgeon from impingement or entrainment during dredging activities; avoidance, minimization, and mitigation measures in place to prevent jeopardizing future existence of threatened and endangered species; restoration, stabilization, protection, and beneficial use actions would have cumulative beneficial effects on threatened and endangered species

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4.0 EFFECTS ANALYSIS, AVOIDANCE, MINIMIZATION, AND CONSERVATION MEASURES

The USACE presents their determinations about each species potentially occurring within the affected area of the PGEP, using language recommended by USFWS:

- *No effect* – USACE determines that its proposed action will not affect a federally listed species or critical habitat;
- *May affect, but not likely to adversely affect* – USACE determines that the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial; or
- *Likely to adversely affect* – USACE determines adverse effects to listed species and/or critical habitat may occur as a direct result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or completely beneficial. Under this determination, an additional determination is made whether the action is likely to jeopardize the continued survival and eventual recovery of the species or result in destruction or adverse modification of critical habitat.

Once the USACE has made the effect determinations for the proposed Project on federally listed species and has provided them to the USFWS and NMFS, the agencies will review the information and complete the Section 7 consultation process under the ESA. As noted above, critical habitat is a term used in the ESA to refer to specific geographic areas that are essential for the conservation of a threatened or endangered species and that may require special management and protection.

This project does not fall under the GRBO (NMFS, 2007a), which is intended to cover routine maintenance of navigation channels and does not include expansion of Port features.

4.1 GULF STURGEON

4.1.1 Construction Dredging (New Work) and Maintenance

Gulf sturgeon migrate through the Mississippi Sound and may occur in the Sound at any time, but are more likely to occur in the fall and winter (October to March) (Heise et al., 2004). Recent research documented Gulf sturgeon in the Mississippi Sound up until May (Peterson et al., 2015, Appendix O of the EIS). Recent tagging studies have also shown that adult Gulf Sturgeon spend more time in the area than previously thought (Peterson et al., 2015; Appendix O of the EIS). The Gulf sturgeon feed on benthic organisms in the Mississippi Sound and between the barrier islands, traveling into coastal waters of neighboring states to feed, primarily in the winter. Habitat preferred by Gulf sturgeon occurs in the Project area near the West Pier Expansion (see Appendix G of the EIS), and Gulf sturgeon were tracked numerous times at receivers stationed around the Port. Adult Gulf sturgeon were recorded mainly from the Pascagoula and Pearl drainages, but there were some eastern population fish [from Escambia, Choctawhatchee and Blackwater (recaptured fish) drainages] that appeared in the Gulfport array. The data

suggest that the habitat monitored for the presence of Gulf sturgeon serves as a corridor between other habitat types, drainages, feeding zones, or is used as a pre-/post-migratory acclimation zone (Peterson et al., 2015 (Appendix O of the EIS)).

Potential impacts to the Gulf sturgeon from the Proposed Project Alternative include:

- Reduction of critical habitat due to the Turning Basin, North Harbor Expansion, and East and West Pier expansions;
- Temporary degradation of critical habitat due to suspended solids, noise, reduced DO and burial of benthic organisms (prey items);
- Reduction in the availability of prey for foraging during dredging and placement activities;
- Entrainment during dredging and placement activities;
- Behavioral impacts due to construction noise from pile driving and dredging; and
- Reduction in habitat quality around the construction area, including elevated turbidity levels and low DO levels during dredging and placement activities.

The proposed Project is located in Critical Habitat Unit 8 for the Gulf sturgeon; habitat within the West Pier Expansion has sediment characteristics and water quality characteristics favorable to the Gulf sturgeon and contains prey known to occur in an adult Gulf sturgeon's diet (see Appendix G of the EIS). The expansion of the West Pier would result in permanent removal of this sediment and would result in deeper, hypoxic habitat, which would reduce prey availability and critical habitat for Gulf sturgeon. However, the acreage of Gulf sturgeon critical habitat impacted by the proposed Project is relatively small (0.06%) compared to the overall size of Gulf sturgeon critical habitat in the Mississippi Sound. Therefore, the reduction in habitat surrounding the Port from the proposed Project would not cause a significant shortage in suitable habitat for Gulf sturgeon. Furthermore, after conducting a benthic habitat assessment for the proposed Project, it was concluded that adult Gulf sturgeon are likely to pass through the Project area but are not likely to feed there (see Appendix G in the EIS). Although critical habitat surrounds the existing Port, noise and vessel traffic from ongoing operations likely deter Gulf sturgeon from utilizing this habitat.

Recent data suggest that Gulf sturgeon utilize the nearshore habitat directly east of the Port and approximately 8 miles east of the Port more than they use the habitat surrounding and west of the Port [Peterson et al., 2015 (Appendix O of the EIS)]. This may suggest that the existing Port structure may already serve as a signal/indicator for Gulf sturgeon to go around and away from the Port toward the barrier islands. They are expected to continue to use it as they do currently, under existing conditions.

Dredging and placement of material would cause temporary increases in suspended solids and reduce DO conditions. Dredging operations can attract some species, because prey items get resuspended in the water column and become easier to catch. Depending on when the dredging operation occurs, dredging could attract Gulf sturgeon for feeding. After dredging, these conditions would most likely result in less-productive bottom conditions within the dredged area because of the reduced water quality conditions.

Following the completion of dredging and placement activities, any displaced animals would be expected to reutilize the placement area after some period of recovery time, if sediment and water characteristics are suitable.

Incidental mortality of Gulf sturgeon could result from entrainment by dredging equipment and could result in population reductions.

4.1.2 Avoidance, Minimization, and Conservation Measures

Many of the avoidance, minimization, and conservation measures described for sea turtles in Section 4.2, below, are applicable to Gulf sturgeon.

4.1.3 Effect Determinations

Because many of the avoidance, minimization, and conservation measures described for sea turtles in Section 4.2 below are applicable to Gulf sturgeon, the Proposed Project Alternative may affect, but is not likely to adversely affect the Gulf sturgeon. In particular, the measures to be implemented would include halting and postponing operations if injured, sick, or dead Gulf sturgeon are located in the area, and following the proper notification protocol for any injured, sick, or dead Gulf sturgeon as described in permits issued for the proposed Project.

Although the proposed Project would adversely modify or destroy Gulf sturgeon critical habitat through the permanent loss of some critical habitat area and potential prey items, it is unlikely that adult Gulf sturgeon would use the proposed Project footprint for feeding. Furthermore, the acreage of Gulf sturgeon critical habitat impacted by the proposed Project is relatively small (0.06%) compared to the overall size of Gulf sturgeon critical habitat in the Mississippi Sound. Therefore, the reduction in habitat surrounding the Port from the proposed Project would not cause a significant shortage in suitable habitat for Gulf sturgeon. Therefore, no significant impact to Gulf sturgeon critical habitat is expected.

4.2 SEA TURTLES

All five sea turtle species (green, hawksbill, Kemp's ridley, leatherback, and loggerhead) have been documented in the Mississippi Sound. Kemp's ridley and loggerhead sea turtles are likely the most common, with the green and leatherback sea turtles being sporadic. Sea turtles are typically present in the study area during the nesting season from May through October (Johnson, 2013). New work and maintenance dredging activities as part of the Proposed Project Alternative have the potential to negatively impact sea turtles, should they be present in the proposed Project area. Any of the sea turtle species may be present in the proposed Project area during certain times of the year.

4.2.1 Construction, New Work Dredging, Maintenance, and Operation

Pier construction and maintenance dredging for the PGEP are combined in this section as these actions are implemented with similar equipment. At this time, it is expected that new work dredging would occur

using mechanical/hopper dredge and maintenance dredging would occur using hydraulic/cutterhead or mechanical/hopper dredging, as necessary. Hopper dredges have the potential to injure or cause mortality from impingement (NMFS, 2007c); whereas, cutterhead dredges are not expected to cause mortality (NMFS, 2012). Other potential impacts to sea turtles include temporary physical and behavioral impacts from noise, increased turbidity and resuspended sediment, and loss of benthic food resources during dredging and placement activities.

4.2.2 Avoidance, Minimization, and Conservation Measures

In other navigation project BOs, the NMFS anticipated incidental take, either by injury or mortality, due to dredging activities. To address potential incidental take during maintenance and other dredging activities, the USACE and NMFS collaborated on avoidance, minimization, and other conservation measures, formalized by NMFS in the GRBO (NMFS, 2003, 2007c).

The GRBO was based on review of regular maintenance dredging of navigation channels and offshore sand mining for beach nourishment and restoration activities; it addresses, among other species, the five sea turtles that could potentially occur in the proposed Project area and study area. Any maintenance activities following implementation of the proposed Project would be covered under the GRBO.

Proposed avoidance and minimization measures include reasonable and prudent precautions and actions that have largely been incorporated in USACE civil works projects throughout the Gulf for more than a decade and are acknowledged by the USFWS and NMFS to reduce impacts to sea turtles. These measures, implemented in full, are necessary and appropriate to authorize any incidental take of sea turtles during construction of the proposed Project. A summary of avoidance, minimization, and conservation measures that would be employed during hopper dredging operations (NMFS, 2007c) include the following:

- *Observers*: The USACE would arrange for NMFS-approved protected species observers to be aboard the hopper dredges to monitor the hopper bin, screening, and dragheads for sea turtles and their remains. Observer coverage sufficient for 100 percent monitoring (i.e., two observers) of hopper dredging operations would be implemented between April 1 and November 30 and/or if the surface water temperatures are 52 °F or greater.
- *Screening*: 100 percent 4-inch inflow screening of dredged material is required. If conditions prevent 100 percent inflow screening using 4-inch mesh, the USACE, observers, and draghead operator must consult with the USACE, and the USACE must notify NMFS before reducing or eliminating inflow screening and provide details regarding effective overflow screening. If deemed necessary, screening may be modified gradually (increasing mesh size to 6 x 6 inch, then 9 x 9 inch, then 12 x 12 inch). If clogging is still an issue after gradual changes, then effective 100 percent overflow screening would be required.
- *Sea Turtle Deflecting Draghead and Dredging Pumps*: A state-of-the-art rigid, non-slotted deflector draghead would be used on all hopper dredges at all times of the year. Dredging pumps would be disengaged by the operator when the dragheads are not firmly on the bottom to prevent

impingement or entrainment of sea turtles within the water column (especially important during dredging cleanup).

- *Dredge Lighting*: From May 1 through October 1, all lighting aboard hopper dredges and hopper dredge pumpout barges operating within 3 nautical miles of sea turtle nesting beaches would be limited to the minimal lighting necessary to comply with U.S. Coast Guard and/or Occupational Safety and Health Administration requirements. Nonessential lighting would be minimized through reduction, shielding, lowering, and appropriate placement to minimize illumination of nesting beaches and reduce disorientation effects on female sea turtles and hatchlings. However, no sea turtle nesting has been reported along the Mississippi coast.
- *Dredge Take Reporting*: Observer reports of incidental take by hopper dredges would be submitted by fax or email to NMFS Southeast Regional Office by onboard protected species observers within 24 hours of any observed sea turtle take. An end-of-project summary report of the hopper dredging results and any documented sea turtle takes would be submitted to NMFS Southeast Regional Office within 30 working days of completion of the dredging project. The USACE would submit an annual report to the NMFS Southeast Regional Office summarizing hopper dredging projects and documented incidental takes. This report must include a complete explanation why alternative dredges (other than hopper dredges) were not used for maintenance dredging, if that activity occurs between April and November.
- *STSSN Notification*: The USACE or its representative would notify the STSSN state representative of start-up and completion of hopper dredging, bed-leveler dredging, and relocation trawling operations and ask to be notified of any turtle strandings in the project area that may bear the signs of draghead impingement or entrainment or interaction with a bed-leveling type dredge. Dredge-relevant stranding information would be reported in the end-of-project summary report and end of year annual report (these strandings would not be counted against USACE take limit during maintenance).
- *Relocation Trawling*: The function and purpose of capture relocation is to capture sea turtles that may be in the dredge's path and relocated them away from the action area. Relocation trawling would be implemented as circumstances dictate in a manner consistent with the GRBO and as outlined in the GRBO for construction. Handling of sea turtles captured during relocation trawling in association with hopper dredging would be conducted by NMFS-approved protected species observers in a manner designed to ensure their safety and viability. When safely possible, not jeopardizing the health of the individual turtle, scientific measurements/procedures may be taken (see GRBO for details). An end-of-project report would be generated upon completion and incorporated into the hopper dredging annual summary report.
- *Operations*: During periods when hopper dredges are operating and NMFS-approved protected species observers are not required, USACE would (1) advise inspectors, operators, and vessel captains that take, harm, and harassment of turtles is prohibited; (2) instruct the hopper dredge captain to avoid any sea turtles during travel or activity and to immediately contact USACE if sea turtles are seen in the vicinity; (3) notify NMFS if sea turtles are observed in the dredging area to coordinate further take-avoidance precautions; and (4) notify NMFS if a sea turtle (or any other protected species) is taken by the dredge.

Other conservation measures include:

- Operations would be stopped temporarily if injured, sick, or dead listed species are located in the area.
- The Port would follow appropriate notification protocols for any injured, sick, or dead species as described in permits issued for the proposed Project.
- Underwater noise impacts from the installation of pilings would be mitigated through the use of bubble curtains, resonators, or other sound-cancelling options.

4.2.3 Effect Determinations

In summary, new work and maintenance dredging activities involving a hopper dredge may result in incidental take of individual sea turtles. Because no impacts to beaches are expected as a result of the proposed Project, no effect on nesting sea turtle habitat or individuals are anticipated. Effect determinations, based on the information presented in this document and in the EIS, are presented in Table 8. The likelihood of adverse effects, including incidental take, during construction and maintenance of the proposed Project are greatly reduced by full implementation of the avoidance, minimization, and conservation measures outlined above. Incidental take, if it occurs, would not likely jeopardize the continued existence or potential recovery of any of the sea turtle species.

Table 8
Sea Turtle Effect Determinations Relative to the Proposed Project Alternative

Common Name	Scientific Name	Dredging Activity Determination	Placement of Dredged Materials Determination
Green sea turtle	*Chelonia mydas*	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect
Hawksbill sea turtle	*Eretmochelys imbricata*	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect
Kemp's ridley sea turtle	*Lepidochelys kempii*	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect
Leatherback sea turtle	*Dermochelys coriacea*	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect
Loggerhead sea turtle	*Caretta caretta*	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect

4.3 PIPING PLOVER

Open-water dredging would not directly affect the piping plover. Wintering piping plovers could potentially occur on beaches and sand and mudflats along the open-water Gulf margins within the study area. The USFWS-designated critical habitat for the piping plover (Mississippi Critical Habitat Units MS-2, MS-3, MS-4, MS-5, MS-6, MS-12, and MS-14) occurs between the mouth of the St. Louis Bay and Biloxi Bay and includes Cat Island, East Ship Island, West Ship Island, and Deer Island (USFWS,

2001b). The proposed Project does not include beach nourishment, which would affect piping plover principal wintering habitats. A modeling evaluation of impacts to Harrison County beaches showed the proposed Project would not result in significant changes in wave heights or breaking wave angles along the adjacent beaches. As a result, it is unlikely the proposed Project would affect piping plover beach habitat (Anchor QEA LLC, 2015b). Wintering piping plovers have been observed using uplands for resting between placement activities. During the DMMP evaluation for the Proposed Project Alternative, the Port began discussion with the MDMR/USACE BUG on using the BMC as a placement area for the dredged material from the Port. For the proposed PGEP, the BUG was in favor of a BU site instead of an ODMDS. As such, the BMC is the recommended placement alternative for the new work dredged material for the proposed Project (Anchor QEA LLC, 2015a, Appendix E of the EIS).If the BMC site is approved and permitted, potential impacts to piping plovers would be addressed through the BMC permitting process. A pre-discharge survey would be conducted to determine the presence or absence of piping plovers. Noise from construction and operation of the facilities may have a temporary impact on the piping plover, although the birds would likely become acclimated to the noise level and adjust their proximity accordingly.

4.3.1 Effect Determinations

The proposed Project may affect but is not likely to adversely affect piping plovers and/or its habitat.

4.4 RUFA RED KNOT

Similar to potential impacts to the piping plover described above, open-water dredging would not directly affect the rufa red knot. The rufa red knot uses coastal marine and estuarine habitats with large, wide areas of exposed intertidal sediments and is known to occur in the study area. It has been documented mainly on the offshore islands but has been recorded on all major islands from Cat Island east to Petit Bois Island, with only five birds at Horn Island observed during the peak winter months. A modeling evaluation of impacts to Harrison County beaches showed the proposed Project would not result in significant changes in wave heights or breaking wave angles along the adjacent beaches; therefore, it is unlikely the proposed Project would affect rufa red knot beach habitat (Anchor QEA LLC, 2015b). As discussed above, during the DMMP evaluation for the Proposed Project Alternative, the Port began discussion with the MDMR/USACE BUG on using the BMC as a placement area for the dredged material from the Port. For the proposed PGEP, the BUG was in favor of a BU site instead of an ODMDS. As such, the BMC is the recommended placement alternative for the new work dredged material for the proposed Project (Anchor QEA LLC, 2015a, Appendix E of the EIS). If the BMC site is approved and permitted, potential impacts to rufa red knots would be addressed through the BMC permitting process. Noise from construction and operation of the facilities may have a temporary impact on the rufa red knot, although the birds would likely become acclimated to the noise level and adjust their proximity accordingly.

4.4.1 Effect Determinations

The proposed Project may affect but is not likely to adversely affect the rufa red knot and/or its habitat.

4.5 WEST INDIAN MANATEE

Although the West Indian manatee may migrate through the proposed Project area, the species typically concentrates near tidally influenced rivers, estuaries, and in nearshore habitats along the Gulf coast. The major threat to the manatee is collision with watercraft. Potential for impacts from dredging and disposal, as well as potential collisions with vessel traffic while present, should be minimal, due to the limited use of the area by manatees. Due to underwater noise from construction activities and elevated turbidity levels, active dredging and disposal activities may disturb these animals and cause them to alter their route. Underwater noise impacts from the installation of pilings would be mitigated through the use of turbidity bubble curtains, resonators, or other sound-cancelling options. These temporary impacts would likely cause the manatee to avoid the area, but would not prevent their passage. Given their likely absence, feeding habits, and very low likelihood of interaction, direct or indirect effects on manatee are unlikely.

4.5.1 Effect Determinations

The West Indian manatee is known to migrate through the proposed Project area between Florida and Louisiana. Manatees favor coastal habitat associated with rivers, estuaries, and nearshore areas. It is anticipated that this species would avoid the construction areas, due to noise and activity. Therefore, it is concluded that the proposed Project may affect, but is not likely to adversely affect the West Indian manatee.

5.0 SUMMARY

Table 9 presents a summary of effect determinations for the federally threatened and endangered species covered in this BA. Potential adverse effects from hopper dredging activities would be avoided and minimized to the greatest extent possible through adherence to the measures outlined in this document.

Table 9
Effect Determinations Summary for the Proposed Project Alternative

Common Name	Scientific Name	Dredging Activity	Placement of Dredged Materials
FISH			
Gulf sturgeon*	*Acipenser oxyrhynchus desotoi*	May affect, but not likely to adversely affect**	Likely to adversely affect
REPTILES			
Green sea turtle	*Chelonia mydas*	May affect, but not likely to adversely affect**	May affect, but not likely to adversely affect
Hawksbill sea turtle	*Eretmochelys imbricata*	May affect, but not likely to adversely affect**	May affect, but not likely to adversely affect
Kemp's ridley sea turtle	*Lepidochelys kempii*	Likely to adversely affect**	May affect, but not likely to adversely affect
Leatherback sea turtle	*Dermochelys coriacea*	May affect, but not likely to adversely affect**	May affect, but not likely to adversely affect
Loggerhead sea turtle	*Caretta caretta*	May affect, but not likely to adversely affect**	May affect, but not likely to adversely affect
BIRDS			
Piping plover***	*Charadrius melodus*	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect
Rufa red knot	*Calidris cannutus rufa*	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect
MAMMALS			
West Indian manatee	*Trichechus manatus*	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect

*No significant impact to Gulf sturgeon critical habitat is expected.

**The likelihood of adverse effects (incidental take) of sea turtles and Gulf sturgeon due to dredging activities is greatly reduced by implementation and adherence to the conservation measures. Adverse effects are not expected to jeopardize the continued survival or recovery of the species.

***No effect to piping plover critical habitat is expected.

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Appendix K

Community Impact Assessment

Job No. 100018536

APPENDIX K
COMMUNITY IMPACT ASSESSMENT
FOR ENVIRONMENTAL JUSTICE COMMUNITY OF GULFPORT

Prepared for:

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June 2014

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Acronyms and Abbreviations

BMC	Biloxi Marsh Complex – Northeastern Outlying Islands
CEQ	Council on Environmental Quality
CIA	Community Impact Assessment
cy	cubic yards
dB	decibels
dBA	A-weighted sound level
DMMP	Dredged Material Management Plan
EIS	Environmental Impact Statement
EJ	Environmental Justice
EJ Community	low-income or minority population
EO	Executive Order
FHWA	Federal Highway Administration
FNC	Federal Navigation Channel
GRPC	Gulf Regional Planning Commission
Gulf	Gulf of Mexico
HHS	Department of Health and Human Services
I-10	Interstate Highway 10
L_{dn}	day-night sound level
LEP	limited English proficiency
LOS	level of service
LRP	Long-Range Plan
mcy	million cubic yards
MDMR	Mississippi Department of Marine Resources
MSA	Metropolitan Statistical Area
msl	mean seal level
MSPA	Mississippi State Port Authority
ODMDS	Ocean Dredged Material Disposal Sites
PGEP	Port of Gulfport Expansion Project
Port	Port of Gulfport, Mississippi
ROI	Return on Investment
TEU	Twenty-foot Equivalent Unit
TWLTL	two-way left-turn lane
US	U.S. Highway
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard

1.0 INTRODUCTION

1.1 COMMUNITY IMPACT ASSESSMENT PURPOSE

The purpose of this Community Impact Assessment (CIA) is to evaluate how the Port of Gulfport Expansion Project (PGEP) at the Port of Gulfport, Mississippi (Port) would affect the community and its quality of life and specifically the environmental justice (EJ) communities within the area. The CIA evaluates the overall potential effects of the project on the people, institutions, community, organizations, and the social and economic setting of Gulfport, Mississippi with regard to the area's low-income and minority populations.

Environmental Justice was first presented in Presidential Executive Order (EO) 12898, entitled Federal Actions to Address Environmental Justice (EJ) in Minority Populations and Low-Income Populations. It required that each federal agency "…shall make achieving EJ part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations…" The three fundamental principles of EJ are as follows:

- To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects on minority populations and low-income populations.
- To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- To prevent the denial of, reduction in, or substantial delay in the receipt of benefits by minority and low-income populations.

EO 12898 mandates that federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of the programs on minority and low-income populations as defined by the following:

- Low income means a household income at or below the Department of Health and Human Services (HHS) poverty guideline. The 2012 national poverty level is $23,050 for a family of four or four persons in a household (HHS, 2012).
- Low-income population means any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a proposed Federal Highway Administration (FHWA) program, policy, or activity. Unlike the Council on Environmental Quality (CEQ) guidance on minority population, no EJ order or guidance document contains a quantitative definition of how many low-income individuals constitute a low-income population. The FHWA defines low income as "a person whose household income level is at or below the HHS poverty guidelines."
- Minority means a person who is:

  - Black (having origins from any of the black racial groups of Africa),
  - Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race),
  - Asian-American (having origins from any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands), and
  - American Indian and Alaskan Native (having origins from any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition).

- Minority population means any readily identifiable group of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who would be similarly affected by a proposed FHWA program, policy, or activity. Minority populations were identified based on the federal CEQ guidance document *Environmental Justice: Guidance Under the National Environmental Policy Act*. Based on this guidance, minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent, or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.
- Disproportionately high and adverse effect on minority and low-income populations means an adverse effect that is predominantly borne by a minority population and/or a low-income population or would be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that would be suffered by the non-minority population and/or nonlow-income population.

Additionally, EO 13166, "Improving Access to Services for Persons with Limited English Proficiency," requires federal agencies to examine the services they provide and identify any need for services to those with limited English proficiency (LEP). The EO requires federal agencies to ensure that recipients of federal financial assistance provide meaningful access to their LEP applicants and beneficiaries. Failure to ensure that LEP persons can effectively participate in or benefit from federally assisted programs and activities may violate the prohibition under Title VI of the Civil Rights Act of 1987, 42 USC 2000d and Title VI regulations against national origin discrimination.

Persons that are protected by the two EOs are the focus of this Community Impact Assessment. Essentially, the CIA largely considers the direct impacts from the proposed project including construction related "temporary" impacts as well as indirect impacts, those impacts which the project may induce. The CIA will also evaluate whether the PGEP would have disproportionately high and adverse effect on minority and low-income populations when compared to the community as a whole. A disproportionate adverse effect means that an adverse effect would be predominantly borne by a minority population and/or a low-income population or would be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that would be suffered by the nonminority population and/or nonlow-income population.

1.2 PROJECT BACKGROUND

1.2.1 Project Information

The Port is located south of the City of Gulfport, Harrison County, Mississippi, within the city limits and is approximately 80 miles west of Mobile, Alabama, and 80 miles east of New Orleans, Louisiana (Figure 1). The Port encompasses approximately 275 acres within five miles of the Gulf Intracoastal Waterway, 10 miles from the Gulf of Mexico (Gulf) and Gulf National Seashore, and approximately seven miles south of Interstate Highway 10 (I-10).

The project proposes to expand the facilities (see Figure 2 for existing Port facilities) at the Port to provide appropriate infrastructure for handling up to 2.0 million Twenty-foot Equivalent Unit (TEU) annually. Such an effort involves the dredging and filling of open-water bottom in Mississippi Sound, the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, placement of new-work and maintenance dredged material, construction of a breakwater, and potentially modification to the federally authorized Gulfport Harbor Federal Navigation Channel (FNC). The proposed expanded Port facility would be elevated to up to +25 feet mean seal level (msl) to provide protection against future tropical storm surge events. It is anticipated that construction of the proposed Port expansion would not occur until the market demand at Gulfport exceeded available capacity.

1.2.2 Project Need

The Port currently has limited capability to grow in size. To provide long-term growth for the Port, the Port requires additional acreage to attract new tenants or concessionaires that would utilize a semi-automated container terminal. The ability to recruit tenants and concessionaires is constrained by the Port's capacity. Unencumbered land available on the restored Port will be very limited and will be utilized, along with automation and improved intermodal infrastructure, to realize the effective capacity of up to 1.0 million TEUs by 2060. Therefore, additional backlands, wharf space, and automation are necessary for increasing Port capacity to meet expected needs. Increased Port capacity would enable the Port's to contribute to future employment opportunities and economic growth in Gulfport and its surrounding communities (Appendix C of the Environmental Impact Statement (EIS), Economic Impact Analysis).

Annual throughput at the Port is also constrained by the ability of ships to call. Throughput at a port can be influenced by the associated navigation channel in three basic ways:

1. The size of ships able to navigate the channel – deeper-draft ships require navigation channels deep enough to allow them to safely pass and longer or wider vessels may require wider channels in order to avoid collision with channel side slopes. The larger the ship, the more cargo it can transport.

2. The ability for fully-loaded ships to navigate the channel – the more heavily loaded a ship, the deeper the draft. Ships that have a draft too deep to safely or efficiently navigate a channel may have to offload cargo to enter a port, which can lead to schedule delays. Thus, ports that cannot allow deeper draft ships through their navigation channels may not be as attractive to users.
3. Ease of channel navigation – the easier it is for a ship to navigate a channel, the more attractive it is for users because it takes less time to navigate. Ease of navigation can be dependent upon the size or draft of a ship, but can also be affected by the characteristics of the channel itself. If the navigation channel includes sharp bends, areas with strong cross currents, or other features that can impede navigation, the time needed to navigate the channel could be affected. As previously noted, users are more likely to utilize ports with navigation channels that are not challenging or time consuming to pass through.

The FNC, as currently authorized, limits the ability of ships to pass for each of the three reasons noted above (see ship simulation studies in Appendix D of the EIS). Thus, the Port has determined a need to modify the existing FNC to allow larger, deeper-draft ships to call. It is intended that modification of the FNC will make the Port more attractive to current and potential future users, thus increasing the ability of the Port to reach its goal of 2.0 million TEUs annual throughput.

1.2.3 Project Purpose

The proposed action evaluated in this EIS is to expand the facilities at the Port to provide appropriate infrastructure for handling up to 2.0 million TEUs annually. Such an effort involves the dredging and filling of open-water bottom in the Mississippi Sound; construction of wharfs, bulkheads, terminal facilities, container storage areas, and intermodal container transfer facilities; placement of new-work and maintenance dredged material; construction of a breakwater; and modification to the federally authorized FNC. The proposed expanded Port facility would be elevated to up to +25 feet msl to provide protection against future tropical storm surge events. It is anticipated that construction of the proposed Port expansion would not occur until the market demand at Gulfport exceeded available capacity (expected in approximately 2017).

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0 5.5 Miles

- GIWW
- FNC Sound Channel
- FNC Bar Channel
- County Line
- Highway

Esri, i-cubed, USDA, USGS, AEX, GeoEye, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community. World Imagery. February 2012. 1:316,800; generated by Ty Summerville; using ArcMap. <http://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer> (23 February 2012).

Figure 1

Port of Gulfport Expansion Project

Project Location

Prepared By: 25913	Scale: 1" = 30,000 feet
Job No.: 100018536	Date: Oct 31, 2013

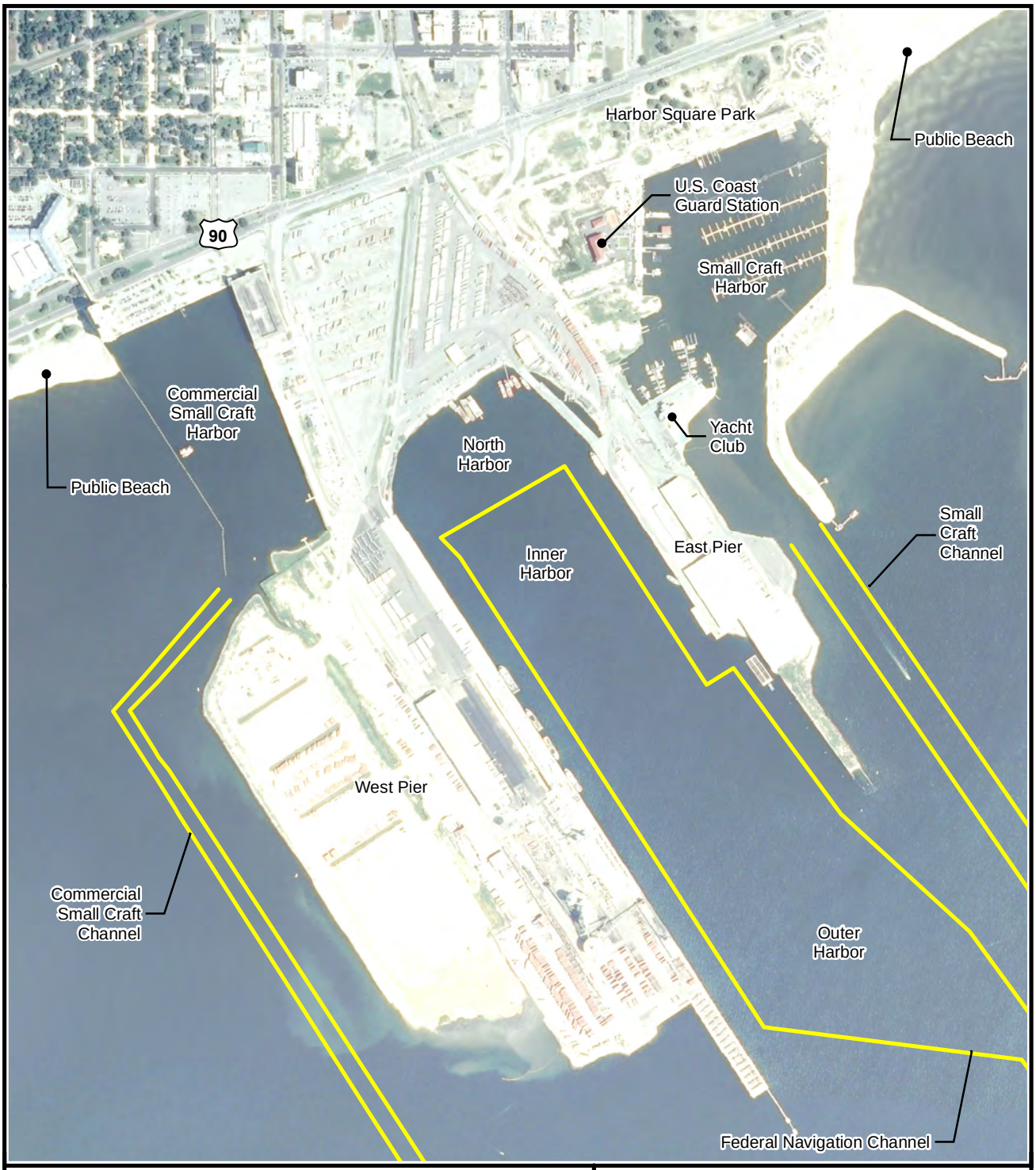



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Figure 2

Port of Gulfport Expansion Project

Existing Port Facilities

Prepared By: 25913	Scale: 1" = 1000 feet
Job No.: 100018536	Date: Oct 31, 2013

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2.0 COMMUNITY IMPACT ASSESSMENT METHODOLOGY

While the project is being advanced by the U.S. Army Corps of Engineers (USACE), the FHWA's *Community Impact Assessment: A Quick Reference Guide* (September 1996) was used to help develop study methodology and outline, as the USACE does not have such guidance available. Consistent with the FHWA guidance, a community profile was developed and is used as a basis to assess potential community impacts and then impact to the EJ community. It should be noted that while the overall potential impacts being considered in the EIS extend into Hancock, Harrison, and Jackson counties, the study area for this CIA is the City of Gulfport and Harrison County. The Port is integral part of that community and the majority of the potential impacts would be more likely to occur in the City of Gulfport. Harrison County is included because the city is an integral part of Harrison County.

2.1 DATA, INFORMATION SOURCES, AND METHODOLOGY

The resources used to complete the CIA are included in Section 7. The following data sources provided useful information in understanding existing conditions and likely trends:

- U.S. Census Bureau data, American Community Survey, Mississippi Institutions of Higher Learning, Center for Policy Research and Planning population projections
- Interviews with community leaders, non-profits and a business owner
- Mississippi Development Authority
- Field visits on May 20–22, 2013; February 19 and 20, 2014
- Secondary sources as identified in Section 7 of this report

The selected interviewees were deemed likely to have extensive knowledge of their respective areas and capable of providing critical information on local concerns, community interests, opinions, and issues of targeted groups. Interviews were conducted with the municipal staff and field views were conducted within the study area to gain an understanding of existing conditions and how the project could affect the community. Attachment A documents the entities contacted for interview and provides a summary of the contact efforts or the interview dates. Attachment B documents the questions asked and provides summaries of information received.

Background information and data obtained during the interviews and field visits were then used to support a qualitative impact assessment on the community with a specific focus on the minority and low-income populations within the City of Gulfport and Harrison County.

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3.0 BASELINE CONDITIONS

3.1 HISTORY OF THE GULFPORT AREA

3.1.1 Establishment of Gulfport

The Mississippi coast saw little direct action during the American Civil War. Ship Island was seized by the Union Navy in September 1861 after it was abandoned by Confederate forces. Construction of a masonry fort, first begun by the USACE in 1859 as part of the United States Third System of Coastal Fortifications, continued through the war, but was not fully completed until 1871 (Irion, 1989; Mississippi Department of Marine Resources [MDMR], 2005). Ship Island, with its naturally deep harbor and central location on the northern Gulf, served as a staging area for Union forces in their assaults on New Orleans in 1862 and Mobile in 1864. The island and fort also functioned as a prison for captured Confederate soldiers and a detention center for Confederate sympathizers from New Orleans (MDMR, 2005).

The establishment of Gulfport was the result of the region's vast timber resources and the extension of rail connections. In the 1880s, William H. Hardy purchased the Gulf and Ship Island Railroad. His goal was to provide a link between the pine forests of the interior and the coast (Mistovich, 1987). As neither Biloxi nor Pascagoula could accommodate deep-draft vessels Hardy intended to establish a new city that could take advantage of the natural harbor at Ship Island. Land for the new city was purchased and divided into lots, but Hardy's enterprise went bankrupt in 1892 with the railroad still 20 miles from the coast.

The railroad was purchased by Joseph T. Jones in 1895 and within 5 years it had reached Gulfport, established just 2 years prior. Completion of the line led to an explosion in the timber industry. Prior to completion, 18 sawmills were in operation along the Gulf and Ship Island's tracks, but by 1902, that number grew to 60 mills, producing some 300,000,000 board feet per year. Jones's interests also lay in developing port facilities for the city. In addition to lobbying the Federal government to dredge a navigation channel and anchorage basin, Jones and his Bradford Construction Company initiated the construction of harbor facilities. As the city lay along a stretch of exposed coastline Jones constructed a protected harbor by building two long piers into Mississippi Sound to bracket the intended anchorage area (Mistovich, 1987). The harbor was protected on its seaward side by a timber-and-stone breakwater.

Gulfport quickly became the largest lumber exporting city in the nation. Other cargoes leaving its docks included naval stores, cotton, and cottonseed. Depletion of the pine forests by the end of the second decade of the twentieth century led to a decline in timber exports. However, a new product quickly replaced lumber in the Port's revenue stream. In 1919, the first banana boat arrived in Gulfport. Handling facilities for the fruit were soon constructed by Standard Fruit and United Brands. By mid-century, Gulfport had become one of the leading banana importers in the nation.

Development of the city and harbor were integrally tied to water depths through Mississippi Sound. Shallow waters in the Sound meant that large vessels had to stop at the Ship Island anchorage and lighter goods to shore. Timber was either barged to Ship Island to waiting ships or towed there via rafts. Shallow water over the bar at the entrance to the anchorage also limited the size of vessels that could call on the Port. Lobbying on behalf of the city and its vested commercial interests spurred Congress to authorize improvements for the harbor. The Rivers and Harbors Act of 1899 authorized the dredging of a channel 19 feet deep and 300 feet wide from the newly created Port to Ship Island. The act also provided for the creation of an anchorage 2,640 by 1,320 feet along the Gulfport shoreline (Mistovich, 1987). A separate provision authorized a 26-foot-deep channel through the Ship Island Bar.

However, shoaling was a constant problem in Mississippi Sound. A USACE report noted in 1919 that the FNC shoaled at a rate of 2.6 million cubic yards (mcy) per year. As a consequence, the Gulfport channel had to undergo periodic maintenance dredging to maintain the authorized depth. In an effort to reduce maintenance costs as a result of shoaling, the channel across the bay was reduced in width from 300 to 220 feet and the channel over the bar was relocated 5,000 feet west, providing a shorter and more direct route into the harbor. To accommodate ever-increasing ship sizes, the River and Harbors Act of 1930 increased the channel depths to 27 feet from the outer bar to Ship Island and 26 feet deep through Mississippi Sound to Gulfport. This was further increased to 32 feet over the bar and 30 feet in the Gulfport channel and harbor in 1948 (Mistovich, 1987).

3.2 COMMUNITY DESCRIPTION

3.2.1 Gulfport

The City of Gulfport has been described by study interviewees as a small town, without much money, but with people that have pride in their community. For example, Hurricane Katrina in 2005 proved that the people of Gulfport are willing to help each other regardless of their race or financial means. The interviewees further stressed that Gulfport was a community that really lacks lower-skilled employment opportunities and being able to provide opportunities for their underskilled workers. Although they expressed pride in Gulfport, there is recognition that the city is somewhat of a struggling community.

3.3 POPULATION CHARACTERISTICS

3.3.1 Population

Table 1 presents population trends for Harrison County and the City of Gulfport. According to the U.S. Census, the County and the City of Gulfport grew between 1990 and 2000. Both the City and the County had a population decrease between 2000 and 2010, likely a result of Hurricane Katrina (2005). The Mississippi Institute of Higher Learning predicts growth for Harrison and its surrounding counties (Table 1).

Table 1
State of Mississippi , Harrison County, and City of Gulfport Population
and Percent Change 1990, 2000, 2010, and Projected Population 2010–2025

	Population				Percent Change		
Place	1990	2000	2010	2025	1990–2000	2000–2010	2010–2025
Mississippi	2,575,475	2,884,658	2,967,297	3,227,364	+12.0	+2.9	+8.8
Harrison County	165,365	189,601	187,105	219,047	+14.7	–1.3	+17.1
City of Gulfport	40,775	71,127	67,793	N/A	+74.4	–4.7	N/A

Source: U.S. Census Bureau (2013a, 2013b, 2013c); Mississippi Institutions of Higher Learning, Center for Policy Research and Planning (2012).

N/A = Not Applicable

3.3.2 Race and Ethnicity

Table 2 provides a summary of the major racial and ethnic groups in Harrison County and the City of Gulfport. As shown in the table, the county and city are predominately white. Both the county and the city experienced a population decline between 2000 and 2010. As of 2010, both the county and the City of Gulfport have a significantly higher percentage of Hispanics or Latinos than reported in 2000. In addition, the County and City of Gulfport's Hispanic or Latino, Two or More Races, Some Other races, and Native Hawaiian or Pacific Islander population comprised the same percentage of population in 2000 and 2010.

3.3.3 Age

As shown in Table 3, between 2000 and 2010, the age of the population in Harrison County and the City of Gulfport had little variation. Both the county and the city had about a third each of its population under 19 years of age and between 20–44 years of age. Between 2000 and 2010, the percentage of those aged 45–64 in the county increased by over 17.4 percent. The median age of the city's population is slightly lower than that of the county.

3.3.4 Income

Data on median household income within Harrison County and the City of Gulfport are shown in Table 4. The median household income for both areas increased between 2000 and 2010. In 2012, the median household income for the county and city were $44,550 and $39,246 respectively.

Both Harrison County and the City of Gulfport have a notable percentage of their populations comprised of low-income individuals. A comparison of 2000 and 2012 data reveals that the percentage living in poverty increased during that time period for both the county and the city. In 2012, nearly 18 percent of the county and 21.9 percent of the city had individuals living below the poverty level.

Table 2
Population by Race and Ethnicity (2000 and 2010)

Race/Ethnicity	Harrison County 2000 (% of total)	Harrison County 2010 (% of total)	Harrison County Percent Change	Gulfport 2000 (% of total)	Gulfport 2010 (% of total)	Gulfport Percent Change
Total Population	189,601	187,105	–1.3	71,127	67,793	–4.7
White Alone	138,692 (73.1)	125,741 (67.2)	–9.3	44,229 (62.2)	37,038 (54.6)	–16.3
Black/African American Alone	39,984 (21.1)	40,975 (21.9)	+2.5	23,848 (33.5)	24,266 (35.8)	+1.8
American Indian or Alaskan Native Alone	861 (0.5)	719 (0.4)	–16.5	305 (0.4)	223 (0.3)	–26.9
Asian Alone	4,934 (2.6)	5,258 (2.8)	+6.6	891 (1.3)	1,134 (1.7)	+27.3
Native Hawaiian or Pacific Islander Alone	163 (0.1)	227 (0.1)	+39.3	65 (0.1)	87 (0.1)	+33.8
Some Other Race	1,697 (0.9)	214 (0.1)	–87.4	622 (0.9)	69 (0.1)	–88.9
Two or More Races	3,270 (1.6)	4,034 (2.2)	+23.4	1,167 (1.6)	1,457 (2.1)	+24.9
Hispanic or Latino*	4,910 (2.6)	9,937 (5.3)	+102.4	1,814 (2.6)	3,519 (5.2)	+94.0

Source: U.S. Census Bureau (2000, 2010).

*All Races (Hispanic or Latino ethnicity can be of one or more race)

Table 3
Population by Age and Median Age (2000 and 2010)

Age Group	Harrison County 2000 (% of total)	Harrison County 2010 (% of total)	Harrison County Percent Change	City of Gulfport 2000 (% of total)	City of Gulfport 2010 (% of total)	City of Gulfport Percent Change
Total Population	189,601	187,105	–1.3	71,127	67,793	–4.7
≤19 Years	55,929 (29.5)	51,673 (27.6)	–8.2	20,749 (29.2)	18,915 (27.9)	–9.7
20–44 Years	72,384 (38.2)	64,733 (34.6)	–11.8	27,293 (38.4)	24,170 (35.7)	–12.9
45–64 Years	40,286 (21.2)	48,747 (26.1)	+17.4	14,978 (21.1)	16,871 (24.9)	+11.2
≥65 Years	21,002 (11.1)	21,952 (11.7)	+4.3	8,107 (11.4)	7,837 (11.6)	–3.4
Median Age	33.9	35.3	–	33.6	34.3	–

Source: U.S. Census Bureau (2000, 2010).

Table 4
Median Income and Poverty Status

	Median Household Income		Poverty Status	
			Individuals Living in Poverty (% of total)*	Individuals Income in Past 12 Months Below Poverty Level (% of total)*
Area	2000	2012	2000	2012
Harrison County	$35,624	$44,550	26,597 (14.6)	33,162 (18.2)
City of Gulfport	$32,779	$39,246	12,023 (17.7)	14,442 (21.9)

Source: Source: U.S. Census Bureau (2000, 2012).
*Percent based on sample population.

3.4 HOUSING

A majority of the housing in the City of Gulfport consists of single-family homes. However, there are multi-family units scattered throughout the city.

Table 5 provides a summary of more recent housing trends in numbers, ownership, and value for Harrison County and the City of Gulfport. There were several new housing units identified between 2000 and 2010 in the county and the city. Overall, the percentage of owner-occupied housing units is similar and relatively high among the county and city. Finally based on field visits in 2013 and 2014 to the City of Gulfport, it appears that a high percentage of the residential properties that are vacant or abandoned have fallen in disrepair and lack structural integrity.

Table 5
Housing Trends

	Total Housing Units			Occupied Housing Units			Median Value Owner-occupied Units	
Area	2000	2012	% Change	2000	2012	% Change	2000	2012
Harrison County	76,636	85,048	+11.0	71,538 (89.9)	71,418 (84.0)	–0.2	$87,200	$143,900
City of Gulfport	29,559	31,556	+6.7	26,943 (91.1)	26,094 (82.7)	–3.2	$80,300	$126,700

Source: U.S. Census Bureau (2000, 2010).

Table 6 provides a summary of more recent public subsidized housing trends in numbers and occupancy for Harrison County and the City of Gulfport. Subsidized housing units increased between 2009 and 2012 for both the county and the city. Occupancy and total people in subsidized housing increased significantly between 2009 and 2012. Percent occupancy in subsidized housing for Harrison County increased from 79 to 91 percent. Percent occupancy in subsidized housing for the City of Gulfport increased from 81 to 91

percent. Total people in subsidized housing increased 24.2 and 16.3 for the Harrison County and the City of Gulfport respectively.

Table 6
Subsidized Housing Program Trends

	Total Subsidized Housing Units			Percent Occupied		Total People in Subsidized Housing		
Area	2009	2012	% Change	2009	2012	2009	2012	% Change
Harrison County	4,452	4,479	0.6	79	91	7,966	10,503	24.2
City of Gulfport	1,735	1,864	7.4	81	91	3,506	4,079	16.3

Source: HUD (2012).

3.5 ECONOMY

3.5.1 City of Gulfport Budget

The City of Gulfport had a 2013 General Fund adopted budget of $54,200,647. Operating revenues were $53,323,343. Thirty-six percent of the revenue collected in the city is obtained from sales tax, property taxes (33 percent), licenses/permits/franchise fees (10 percent), and gaming (6 percent). Nearly a third of the budget is associated with the police department, including personal, material and supplies, other services and charges, and capital outlay. The second highest expenditure is fire department (22 percent), the third is public works and engineering (17 percent), fourth is general government (14 percent), fifth is culture and recreation (10 percent), and sixth is urban and economic development (4 percent). There was a budget shortfall of $877,304, which was covered with cash reserves of $2,674,996, leaving $1,526,246 for the city (City of Gulfport, 2013a).

3.5.2 Employment and Business

Of the 15 top employers listed for Harrison County, 7 are located in Gulfport. Of these seven, the leading employer is the Naval Construction Battalion Center followed by institutional entities (Memorial Hospital, Harrison County School District, and Mississippi Power). The largest employer for Harrison County is Keesler Air Force Base, in Biloxi, which is located approximately 13 miles east of Gulfport. The main business district within the City of Gulfport exists along U.S. Highway (US) 49. According to interviewees, the main business district was revitalized after Hurricane Katrina. It should be noted that the Gulf Coast of Mississippi and other areas that were struck by Hurricane Katrina in 2005 experienced an economic downturn. The recovery of this area was affected by the greater economic downturn that occurred in the United States in 2008. Table 7 shows the unemployment rate in the region for the previous 10 years. Unemployment data at the city level was not available from the Mississippi Labor Market Information database, so unemployment data for the Metropolitan Statistical Area (MSA) of Gulfport-Biloxi is included. The State of Mississippi and the U.S. are included for comparison.

Table 7
Regional Unemployment Rate

Geography	Years									
	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Gulfport-Biloxi MSA	5.2	10.8	10.1	5.5	5.7	7.7	9.3	9.8	8.7	8.0
Harrison County	5.2	11.0	10.4	5.5	5.6	7.7	9.3	9.7	8.7	7.9
Mississippi	6.3	7.8	6.8	6.3	6.8	9.5	10.6	10.6	9.2	8.6
United States	5.5	5.1	4.6	4.6	5.8	9.3	9.6	8.9	8.1	7.4

Source: Mississippi Labor Market Information (2014).
Not seasonally adjusted

3.6 COMMUNITY RESOURCES

3.6.1 Educational Facilities

The City of Gulfport and portions of Harrison County lie within the Gulfport School District. According to the Mississippi Department of Education, total enrollment has increased 6 percent since the 2009–2010 school year (Table 8) (Mississippi Department of Education, 2014). The school district complex is located in central Gulfport on Pass Road and includes the administration offices and the elementary, junior high, and high schools.

Table 8
Gulfport School District Enrollment

Grade	2009–2010	2010–2011	2011–2012	2012–2013
Elementary*	2,802	2,809	2,924	3,102
Junior High	1,224	1,322	1,314	1,368
High	1,650	1,575	1,549	1,532
School District Total	5,676	5,708	5,802	6,013

Source: Mississippi Department of Education (2014).
*Includes Pre-Kindergarten. Special education kindergarten and secondary. GED numbers suppressed to avoid identification; therefore, numbers will not add to total.

Table 9 present Gulfport School District enrollment by group. The school district is predominantly female and Black/African American at 50.5 and 53.0 percent, respectively. The school district has 71.2 percent graduation rate. The school district has a "B" Mississippi State Accountability Status, which means that the school is a high performing school (Mississippi Department of Education, 2012).

Table 9
Gulfport School District Student Race and Ethnicity 2012–2013

Group Name	Group Number	Group Percentage
Female	3,034	50.5
Male	2,979	49.5
Asian	60	1.0
Black/African American	3,189	53.0
Hispanic or Latino	239	4.0
Native American	21	0.3
White	2,481	41.2
Multi-Racial	23	0.4
School District Total	6,013	

Source: Mississippi Department of Education (2014).

The Gulfport School District Strategic Plan for 2013–2018 sets strategies, goals, and objectives for the following areas: technology, parent and community involvement, district organization, and operations facilities and maintenance (Gulfport School District, 2013).

As shown in Table 10, the educational attainment of the Gulfport-Biloxi MSA is generally consistent with Harrison County and the State of Mississippi. A majority of the population of Gulfport-Biloxi MSA (54.1 percent of the population aged 18 and older) have achieved some college instruction or a higher level of attainment, which is slightly higher than the State of Mississippi (50.0 percent) (U.S. Census Bureau, 2010). The Gulfport-Biloxi MSA and Harrison County areas have slightly higher percentages of those with some college education; this could be due to the fact that the University of Southern Mississippi Gulf Park Campus is located in Long Beach, in Harrison County.

Table 10
Educational Attainment for the Population Age 18 and Older

		Percent of Population with Highest Level of Education Achieved						
Place	Population Age 18 and Older	Less than 9th Grade	9th to 12th Grade, No Diploma	High School Graduate, GED, or Alternative	Some College	Associate's Degree	Bachelor's Degree	Graduate or Professional Degree
Gulfport-Biloxi MSA	185,801	5.2	10.6	30.1	27.2	8.4	11.7	6.8
Hancock County	32,916	5.3	9.0	31.6	24.1	8.9	13.7	7.5
State of Mississippi	2,199,726	6.4	13.2	30.3	24.9	7.5	11.5	6.1

Source: U.S. Census Bureau (2010).

3.6.2 Limited English Proficiency

Federal agencies are required to ensure that recipients of federal financial assistance provide meaningful access to their LEP applicants and beneficiaries. Failure to ensure that LEP persons can effectively participate in or benefit from federally assisted programs and activities may violate the prohibition under Title VI of the Civil Rights Act of 1987, 42 USC 2000d and Title VI regulations against national origin discrimination. LEP populations were determined utilizing census tract level data from the 2010 Census. For the population 5 years and older, persons who speak English "not well" or "not at all" are considered to be LEP. Table 11 shows that approximately 5 percent of the population within Harrison County and the City of Gulfport has LEP.

Table 11
Limited English Proficiency

	Harrison County	City of Gulfport
Population 5 Years and Over*	174,257	62,354
Limited English Proficiency	5,370	1,823
Percent Limited English Proficiency	3.1	2.9

Source: U.S. Census Bureau (2012).
*Total population 5 years and older.

3.6.3 Places of Worship and Cemeteries

According to Church Angel, a Christian church listing service, there are 113 churches of 26 denominations of Christian and 1 Jewish Synagogue located within the City of Gulfport (Church Angel, 2011). Baptist are the most prevalent with 43 listed, followed by Methodist with 13 listed, and Church of God churches make up 9 of the listed churches.

3.6.4 Parks and Recreational Facilities

The Port lies near the center of Mississippi's 26 miles of coastal beaches on the Gulf. These beaches and the nearshore waters of Mississippi Sound and the Gulf offer numerous recreational opportunities to beach goers and recreational boaters. The Port and the associated Gulfport Small Craft Harbor are centrally located along this stretch of public beaches. These beaches are accessed from US 90 (Beach Boulevard) by periodic pullover areas where public parking, restrooms/bath house, and beach concessions are available at strategic locations to serve the needs of beach goers. Popular beach recreation activities include sun bathing, swimming, and other water-based recreational pursuits.

The Gulfport Small Craft Harbor is located east of and adjoining the Port and shares the deep-water access of the main FNC. The Gulfport Small Craft Harbor, as with most of the Gulf Coastal communities, was severely damaged by Hurricane Katrina in 2005 and both Gustav and Ike in 2008. The redesigned harbor features a variety of mixed-use leisure and recreational facilities. Among these are Harbor Square Park, a new marina with up to 319 slips, Gulfport Yacht Club facilities (72 slips), boat ramp, Urie Pier, a

recreational beach, and a fisherman's village with a mix of resorts, retail shops, and restaurants. All redesigned facilities are accommodated with ample parking and accessed from US 90 on landscaped internal roadways. The Gulfport Small Craft Harbor will also support the U.S. Coast Guard (USCG) Station Gulfport and a marine life education center. Later phases could include a casino, new residential condominium development, and a second marina (City of Gulfport, 2010)

Harbor Square Park (Bert Jones Park) is located between the Gulfport Small Craft Harbor and US 90. It is the largest public park on the Gulf Coast and offers passive and recreational opportunities for residents and visitors. Access to the park is from US 90 on 20th, 23rd, and 25th avenues. Other predominant land uses in the vicinity of the Port include the Island View Casino, Gulfport Senior Citizens Center, and Gulf Haven Campground, all located north of US 90 west of the Port and the U.S. Post Office, east of US 49 in downtown Gulfport.

Additionally, Gulfport's Department of Leisure Services provides residents and visitors with programs for youth and the elderly, parks, pools, and sports facilities, including gymnasiums, ball fields, and weight rooms. In addition, the department is responsible for community centers, senior centers, recreational facilities, youth athletic leagues, and after school and summer programs (City of Gulfport, 2014b).

The department operates 38 ball fields, 31 parks, 5 tennis courts, 3 gymnasiums, 7 walking tracks, all fishing piers and municipal boat ramps and jetties, the Small Craft Harbor, fitness centers, a senior center, a swimming pool, and more than 600 acres of parks and recreational areas.

Also, gambling is legal in Mississippi and the presence of casinos along the Gulf Coast of Mississippi serves to attract a number of visitors to the area. While not recreation in the traditional sense, visitors attracted to the casinos may participate in other recreational activities during their stay on the Gulf Coast. Other commercial recreational facilities include golf courses, resort hotels, and retail establishments.

Collectively, these recreational resources along the Mississippi Gulf Coast are a benefit to the local and state economy, creating jobs and providing revenue to local businesses while preserving the local natural and cultural heritage of the region.

3.6.5 Medical Facilities

Harrison County is served by 3 civilian general medical hospitals (Biloxi Regional Medical Center, Garden Park Medical Center, and Gulfport Memorial Hospital), and 1 limited services facility (Select Specialty Hospital Gulf Coast), with a combined total of 834 licensed beds, as well as 7 ambulatory surgical facilities. Harrison County also has 5 licensed and certified long-term care facilities, 7 licensed personal care homes, and 6 certified hospices.

Harrison County has 144 active primary care medical doctors. The 2008 estimated population of Harrison County lead to a primary care physician-to-population ratio of one care provider for every 1,247 persons,

which is much lower than the state-preferred ratio of 1,488 persons per primary physician (Cossman et al., 2005).

3.6.6 Emergency Services

Emergency fire and medical services are provided by the City of Gulfport as well as Harrison County. All of the fire departments within the county maintain a mutual-aid policy and provide fire and emergency medical support to other departments upon request.

The City of Gulfport Fire Department has 11 fire stations, with another under construction, and employs 174 full-time fire protection and rescue service workers (City of Gulfport, 2013b). The department responds to a variety of calls, such as structure fires, aircraft emergencies, hazardous material spills, emergency medical calls, and marine emergencies. They also provide special services in hazardous waste response and disaster preparedness and have trained personnel to respond to the potential threats of weapons of mass destruction.

The Harrison County fire service protects the citizens living in the unincorporated areas of the county, a total rural area of approximately 408 square miles with a population of 43,931. They employ 8 full-time paid fire personnel, 1 clerical person, 6 part-time paid personnel, and 140 volunteers (Harrison County Board of Supervisors, 2013).

The Port enforces fire protection rules through the provision of the Port tariff and maintains cooperative agreements with county and municipal fire departments for fire protection and emergency medical services. The Port has a fire protection and fire suppression system in place that works in cooperation with the City of Gulfport Fire Department to address fire protection in and around the Port. A Hot Work Permit will be issued before any hot work (e.g., welding) begins (Mississippi State Port Authority [MSPA], 2012). Hot work is defined by the Occupational Safety and Health Administration (OSHA) as any work that involves burning, welding, using fire- or spark-producing tools, or that produces a source of ignition (OSHA, 2014).

The fire station located nearest to the PGEP is at 1515 23rd Avenue, two blocks north of US 90.

Law enforcement is provided by the county sheriff and Gulfport police departments. The Harrison County Sheriff's Department provides protective services to unincorporated portions of the county. The department has various divisions, including aviation, criminal investigation, communications, community relations, criminal records, operations, adult detention facility, marine patrol, motor carrier, and professional standards and reserves (Harrison County Sheriff's Department, 2011).

The City of Gulfport Police Department provides public safety service to the incorporated areas of the city, including the Port. The department employs 293 personnel, including 201 sworn officers, and serves a community population of 80,000 residents and a daily service population of 144,000 (City of Gulfport, 2013c).

The MSPA works in cooperation with the Gulfport Police Department and the Department of Homeland Security to implement safety and security programs for the Port. Security functions are maintained on MSPA premises through contract with an independent security service. The security service provides continuous surveillance of all Port facilities, protects against unlawful entry and pilferage, enforces fire detection control regulations, and performs other assigned security duties. The security functions of the service are coordinated with municipal, county, state, and Federal law enforcement authorities (MSPA, 2012).

As an international transportation facility, the Port is supported by the U.S. Customs and Border Protection and the Department of Homeland Security, each of which provides security services for cargo movement and personnel. Employees and transient Port workers are required to obtain security clearance in order to access the Port facilities and maintain current transportation workers identification cards (MSPA, 2012). The USCG also enforces safety and security provisions for vessels operating in waters of the U.S. (USCG, 2011).

3.6.7 Bike and Pedestrian Facilities

Pedestrian sidewalks exist primarily throughout the city. There are no dedicated bike paths within the city. Additionally, there are no plans for bike or pedestrian mobility expansion.

3.7 ZONING AND LAND USE

3.7.1 Zoning

The City of Gulfport established a zoning ordinance in 1972, and it is utilized to govern zoning requests today. There are six zoning districts identified within the ordinance (Municode, 2014), and they include:

- Agricultural districts (A-1) – Agricultural districts is mainly composed of areas for low-density residential and agricultural and horticultural uses. The rural development characteristics and low density of population in this district requires only that uses essential to agriculture and horticulture have a reasonable setback of buildings from dedicated streets and/or highways. It is the purpose of this district to encourage and protect such uses from urbanization until such is warranted by development pressure and an appropriate change in district classification is made.
- Residence Estate (R-E) – Residence Estate (suburban) districts are composed mainly of areas containing one-family dwellings and open area where such development seems likely to occur. The district regulations are designed to protect the residential character of the districts by prohibiting all commercial activities; to encourage a suitable neighborhood environment for family life by including among the permitted uses such facilities as schools and churches; to prevent overcrowding of the land by requiring certain minimum yard and other open spaces for all buildings; and to avoid excessive population density by requiring a minimum building site area for each dwelling unit.

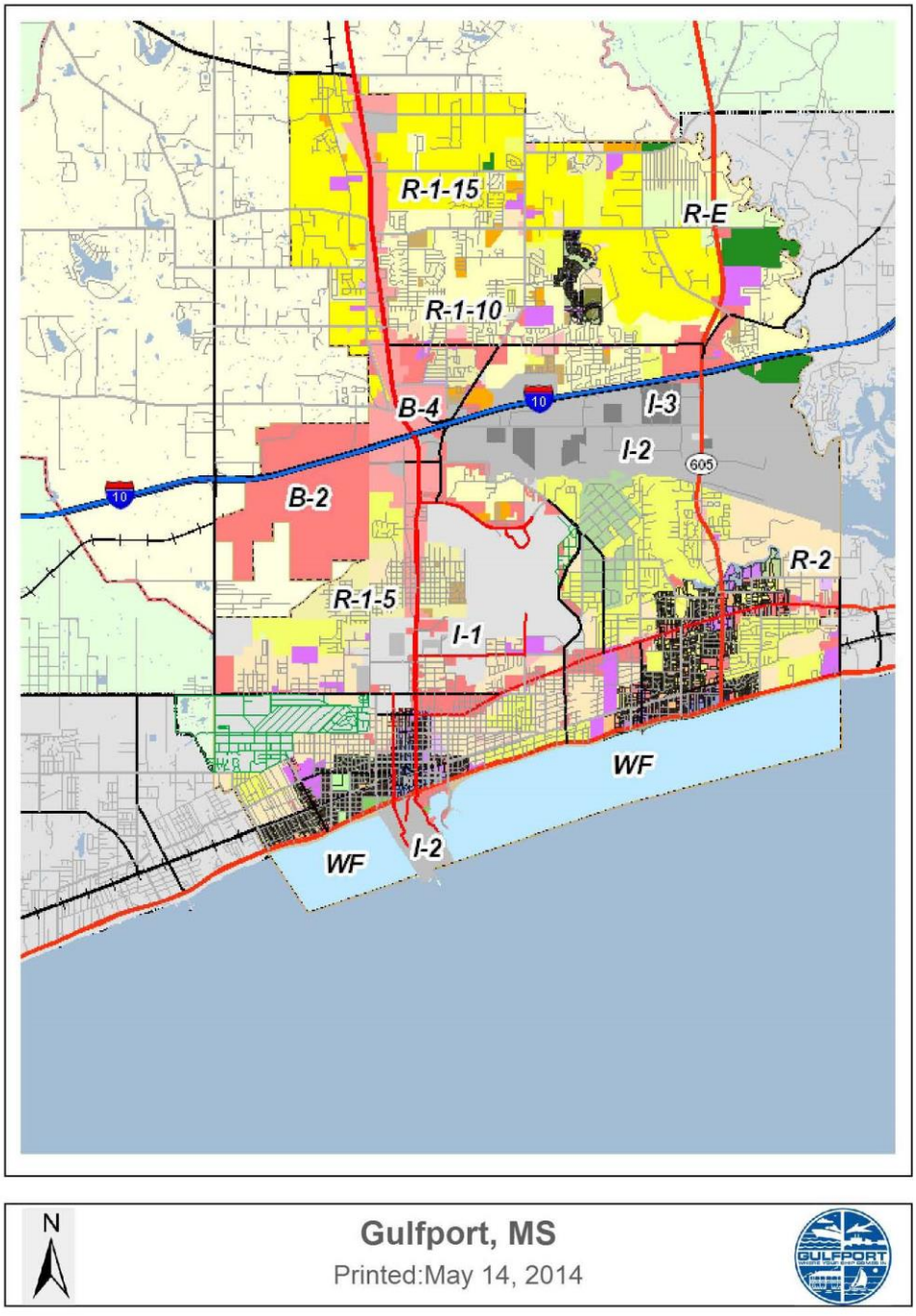
- Residential R-1-15, R1-10, R-1-7.5 – This district is comprised of low density, single-family homes, churches, parks, libraries, schools, recreation facilities, farms, orchards, nurseries, other religious or philanthropic institutions, and accessory building for these uses.
- Residential 1-1-5 (R1) – Same as other Residential except it is medium density plus two-family/duplex homes.
- Residential 2 (R2) – Same uses as in R1-5 plus multiple-family dwelling.
- Residential 3 (R3) – These are multifamily residence districts. Same uses as in R1.5, but high density apartments or multi-family dwelling, boarding/lodging/rooming houses, and private clubs.
- Residential 4 (R4) – Same uses as in R3 but high density.
- Residential (R-O) – Residence-office districts, these districts are composed of areas containing or suitable for a mixture of residential uses and light commercial uses such as offices, studios, and small shops.
- Residence-business districts (R-B) – These districts are composed of areas containing a mixture of residential, public and semipublic, and light commercial uses. Although usually located between residential areas and business areas, these districts are, in some instances, freestanding and may include hotel, hospital, or similar building groups and related uses or land suitable for such uses.
- Business 1 (B1) – Neighborhood business districts. Any use allowed in R3, plus retail shops, hotels/motels, offices, parking lots, public buildings, theatres, assembly halls, restaurants, automobile garage/gas stations, wholesale facilities, storage facilities, advertising, mobile home parks, and accessory building for these uses.
- Business 2 (B2) – General business districts. Same uses as in B1 plus the wider range of retail goods and services required by residents of a group or community of neighborhoods, and by the city generally.
- Business 3 (B3) – Central business districts. Same uses as in B1. The district regulations are designed to permit the further development of the district for its purpose in a compact and convenient arrangement of uses and structures that is highly urban in character.
- Business 4 (B4) – Highway business districts. This district is intended to include high intensity commercial activities requiring high visibility and accessibility in which all or some of the business is conducted outdoors. This includes such activities as automobile, truck, or other vehicle dealerships; heavy equipment dealers; recreational vehicle sales, mobile home sales; yard and garden centers; building material dealers; truck stops; bus terminals; outdoor recreational enterprises such as recreational vehicle campgrounds, water parks, drive-in theaters, amusement parks, etc. Also included in this district would be uses which cater to the motoring public such as fast food restaurants, service stations, motels, and similar uses.
- Entertainment gaming districts (E-G) – This district is composed of lands and structures, which are occupied by or suited for the accommodation of the gaming industry and related entertainment land uses. The district regulations are designed to encourage a mixture of uses including hotels, restaurants, shopping, live entertainment, limited residential, public and open space, and tourist-oriented recreational uses. This district shall be of such size, shape, and

location as to enable development of well-organized facilities with proper access to streets, sidewalks, off-street parking and loading facilities, and other requirements and amenities.

- Industrial (I-1) – Light industry districts. These districts are composed of land and structures occupied by or suitable for light manufacturing, wholesaling, and similar uses. Located for convenient access from existing and future arterial thoroughfares, highways, and railway lines, these districts are usually separated from residential areas by business districts or by natural barriers. The district regulations are designed to permit a range of light industrial activities subject to limitations intended to protect nearby residential and business districts.
- Industrial (I-2) – Heavy industry districts. These districts are composed of land and structures occupied by or suitable for heavy manufacturing and related activities. Located for convenient access from existing and future arterial thoroughfares, highways, railway lines or waterways, these districts are usually separated from residential areas by business or light industry areas or by natural barriers; where they are adjacent to residential areas some type of artificial separation may be required.
- Industrial (I-3) – Planned industrial park district. This district includes uses in a self-contained environment, which do not operate in such a manner as to be obnoxious to surrounding properties. Included are manufacturing, fabrication, distribution, and storage or warehouse uses, which are conducted both indoors and outdoors. It is intended that this district have uses grouped in a park-like setting with appropriate setbacks and buffers from adjoining properties.
- Sand Beach (SB) – Sand beach district. There is hereby created a sand beach district that is subject to the Sand Beach Ordinance of Gulfport, Mississippi.
- Waterfront districts (WF) – Waterfront district classification is intended to include all areas situated south of US 90 located within the City of Gulfport, which are not specifically zoned for other uses.
- Flood Hazard (FZ) – Flood Hazard Overlay Zone here is hereby created a Flood Hazard Overlay Zone, which is subject to the Flood Control Ordinance of Gulfport, Mississippi, Ordinance Number 1793 as found in Appendix B of the Code of Ordinances of the City of Gulfport, Mississippi. This district is defined as the zones so designated on the most recent Flood Insurance Rate Maps and Floodway maps covering the corporate boundaries of the City of Gulfport.
- Airport (AP) – Gulfport-Biloxi Regional Airport Environs and Airspace Zoning District is hereby created with the following purpose: to preserve the general public's investment in and the viability of the Gulfport-Biloxi Regional Airport and to protect and enhance the health, safety, and general welfare of the population in the vicinity of the airport.

The zoning ordinance outlines additional development rules and procedures. Changes in zoning are reviewed for consistency and approved by the City Council.

The zoning districts were estimated based on mapping available at the City of Gulfport office. These zoning districts are depicted on Figure 3. It should be noted that the mapping from the city was difficult to read and the zoning information are estimates.



Source: City of Gulfport (2014c).

Figure 3
Zoning Map City of Gulfport

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4.0 ALTERNATIVE OPTIONS EVALUATED

The alternatives considered for evaluation include the No-Build Alternative and three action alternatives. The Action Alternative entails expanding the facilities at the Port to provide appropriate infrastructure for handling up to 2.0 million TEU annually. Such an effort involves the dredging and filling of open-water bottom in Mississippi Sound, the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, placement of new-work and maintenance dredged material, construction of a breakwater, and modification to the federally authorized FNC. The proposed expanded Port facility would be elevated to up to +25 msl to provide protection against future tropical storm surge events.

In March 2011, the MSPA revised the scope of the project to encompass a smaller footprint (referred to as the Revised Expansion Alternative in the EIS). This impacts approximately 300 acres of open-water bottom in Mississippi Sound for the construction of backlands, wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, expanded turning basin, and construction of a breakwater of approximately 4,000 linear feet. Estimates of direct impacts are provided in Table 12.

Table 12
Revised Expansion Alternative, Direct Impact Estimates

Feature	Estimated Area Impact (acres)	Estimated Dredged Material Volume (mcy)
West Pier Expansion	160	2.30
East Pier Expansion	15	0.56
North Harbor Fill	9	0.82
Breakwater	18	0
Turning Basin Expansion	85	3.70
Totals	287	7.40

In addition to the Revised Expansion Alternative, the Port recognizes that the proposed channel modification may be necessary to attract additional tenants to the Port, and therefore, modification to the existing FNC is considered in the alternatives. The following describes the alternatives that were carried forward for evaluation in the EIS.

4.1 NO-ACTION ALTERNATIVE

The No-Action Alternative provides a means to evaluate the environmental impacts that would occur if the USACE were to deny the permit for the proposed expansion of the Port facilities. Since the PGEP requires dredging activities in navigable waters subject to Section 10 of the Rivers and Harbors Act and fill activities subject to Section 404 of the Clean Water Act (CWA), construction activities involving

dredge and fill would not proceed without a permit from the USACE. In the event of permit denial, the potential direct, construction-related impacts described for the proposed action would not occur.

4.2 ALTERNATIVE 1: EXPANSION WITH NO CHANNEL MODIFICATION

Alternative 1 proposes to expand the Port facility as described for the Revised Expansion Alternative. The West Pier Expansion is intended for development of a new concession consisting of new multiuse, semi-automated container terminals that is an extension of the existing West Pier to the south. The proposed concession area would extend the West Pier footprint approximately 3,500 linear feet, adding approximately 160 acres to the existing facility. Prior to construction, the expansion footprint may require dredging for removal of soft or very soft foundation materials and to mitigate mud waves outside of the project footprint. The estimated volume of this dredged material is 2.3 mcy (Anchor QEA LLC, 2013).

The East Pier Expansion would add approximately 15 acres to the working surface of the Port's existing East Pier facility. This area would be used for rail operations and provide additional warehouse storage space. Similar to the West Pier Expansion, this area may require dredging prior to construction. The estimated volume of this dredged material is 555,000 cubic yards (cy). No additional berths would be constructed at the East Pier (Anchor QEA LLC, 2013).

The North Harbor Fill Area expansion would create approximately 9 acres of upland in the area formerly occupied by the Copa Casino boat. This upland area would be used as a new berthing area. Both the new work dredging associated with the construction of this berth and future maintenance dredging would be required in this area (Anchor QEA LLC, 2013).

The existing Gulfport Turning Basin would be expanded to support the West Pier Expansion. The proposed Turning Basin Expansion (approximately 85 acres) would be between the existing Gulfport Sound Channel and the proposed terminal, immediately adjacent to the Gulfport Turning Basin. This area would be dredged to a depth of –36 feet mean lower low water plus 2 feet of advance maintenance and 2 feet of allowable overdepth, consistent with the adjacent FNC and USACE new work and maintenance dredging practices (Anchor QEA LLC, 2013).

A breakwater of 4,000 linear feet is proposed on the eastern side of the FNC to provide protection from tropical storm events. The proposed breakwater footprint would cover approximately 18 acres. It provides protection from wave energy from the south and east. A breach midway along the alignment of the structure is planned to allow shallow-draft access to the FNC from the adjacent Bert Jones Yacht Basin.

The realignment of the Commercial Small Craft Channel has been developed to avoid impact to the channel from the proposed expansion of the West Pier. The authorized depth of the channel is 8 feet. The depth south of the West Pier naturally ranges from 9 to 11 feet. Thus, the proposed realignment is in areas over 8 feet deep and will not require either dredging for the realignment or maintenance dredging. The

alignment also reduces the number of turns in the channel and the number of aids for navigation required by the USCG.

The new work dredging associated with the construction of the proposed West Pier and East Pier expansions, North Harbor and West Pier berthing areas, and the Turning Basin Expansion is estimated to require removal of approximately 7.4 mcy of sediment. Following construction of the Turning Basin Expansion, the MSPA would be responsible for maintenance dredging of the portion of the new turning basin that is not part of the federally authorized project. A Dredged Material Management Plan (DMMP) was prepared to evaluate potential placement options for the new work and maintenance dredged material associated with this proposed alternative (Anchor QEA LLC, 2013). Estimated dredged material quantities are shown in Table 13. Estimated maintenance dredge quantities assume maintenance for a 30-year period. At this time, it is expected that new work dredging would occur using mechanical/hopper dredge and maintenance dredging would occur using hydraulic/cutterhead or mechanical/hopper dredging, as necessary.

Table 13
Estimated Dredged Material Quantities (Alternative 1)

Feature	West Pier Expansion	East Pier Expansion	North Harbor and West Pier Berthing Areas	Turning Basin Expansion	Totals
New Work	2.3 mcy	560,000 cy	820,000 cy	3.7 mcy	7.4 mcy
Maintenance	N/A	N/A	245,000–530,000 cy/year	211,000–586,000 cy/year	456,000–1.1 mcy/year

Source: Anchor QEA LLC (2013).

The DMMP evaluated multiple placement alternatives for new work and maintenance dredged material. Sites considered for placement of dredged material included:

- Use as fill for the West Pier Expansion
- 12 designated beneficial use (BU) sites
- Thin layer placement
- Candidate BU sites
- Placement in a proposed Ocean Dredged Material Disposal Sites (ODMDS)

All sites were evaluated based on feasibility, potential environmental impacts, cost, and suitability of material. Potential BU sites were evaluated based on capacity and distance to the dredge site, taking into consideration habitat value, stability, and sediment transport. Recommendations were made regarding each option (Anchor QEA LLC, 2013). Because additional information is needed to finalize the recommendations, the following summarizes placement options.

New work dredged material structurally suitable would be used for fill on the project site. Any material not structurally suitable would be evaluated for potential beneficial use. Because dredging and placement

of material would occur several years in the future, it is unknown at this time what sites may be approved and available for use. Therefore, available sites will be evaluated prior to dredging and material suitable for beneficial use will be placed in approved sites that provide a practicable, cost-effective opportunity for placement. The MSPA is currently working with the appropriate state and Federal agencies to have the Biloxi Marsh Complex – Northeastern Outlying Island (BMC) permitted for placement of material as a BU site. Because this area is on the Mississippi-Louisiana state line, it is a complex permitting process crossing not only state boundaries, but USACE regional boundaries. At this time it is intended that all new work dredged material not already designated for placement in an approved placement area will be placed in the BMC. This site functions to provide needed particulate material for shoreline nourishment and functions as protection from shoreline erosion on the Mississippi and Louisiana coasts. Material not suitable for beneficial use could be placed in an approved ODMDS. For purposes of this evaluation, it is assumed material would be placed in the BMC.

4.3 ALTERNATIVE 2: EXPANSION WITH CHANNEL MODIFICATION 1

Alternative 2 combines the proposed expansion, as described for Alternative 1, with modification to the existing FNC. Proposed modification to the FNC includes deepening and widening the federally authorized dimensions for the Sound Channel and the Bar Channel, as well as deepening the federally authorized Turning Basin and proposed basin expansion to match the depth of the Sound Channel. Existing and proposed dimensions for these features are provided in Table 14.

Table 14
Existing and Proposed FNC and Turning Basin Dimensions (feet)

	Bar Channel (Depth/Width)	Sound Channel (Depth/Width)	Anchorage Basin (Depth)	Basin Expansion (Depth)
Existing	38/400	36/300	36	36
Proposed	47/500	45/400	45	45

*As proposed in Alternative 1, with no FNC modification.

Dredged material quantities and placement of material would be the same as that described for Alternative 1 in regards to material dredged for the footprint expansion, except for the expanded turning basin, which would be deeper and thus have a higher volume of dredged material removed for construction. Additionally, material would be dredged for the proposed channel modification. Anticipated dredged material quantities are provided in Table 15. As described in the DMMP, material dredged from the FNC modification would be placed primarily within the BMC, unless additional permitted sites are available for BU of the material. Sandy material is expected to be dredged from the FNC between stations 510+00 and 685+00. This material would be placed in the permitted Littoral Zone Disposal Area per USACE and regional sediment management plans.

Table 15
Estimated Dredged Material Quantities (Alternative 2)

Feature	West Pier Expansion	East Pier Expansion	North Harbor and West Pier Berthing Areas	Turning Basin Expansion	FNC	Totals
New Work	2.3 mcy	560,000 cy	820,000 cy	5.48 mcy	50.0 mcy	59.2 mcy
Maintenance	N/A	N/A	245,000–530,000 cy/year	211,000–586,000 cy/year	7.3 mcy/year	7.8–8.4 mcy/year

Source: Anchor QEA LLC (2013).

Operation of this expanded Port facility in combination with the proposed channel modification is expected to result in an annual throughput of up to 1.7 million TEUs by 2060. This is increased over projected throughput for Alternative 1, because the larger, deeper FNC is expected to allow larger ships than are currently able to navigate the FNC to enter the Port, thus increasing the Port's ability to attract additional tenants and increase throughput of existing tenants.

4.4 ALTERNATIVE 3: EXPANSION WITH APPLICANT'S PREFERRED CHANNEL MODIFICATION (APPLICANT'S PREFERRED ALTERNATIVE)

Under Alternative 3, the proposed action is the same as described for Alternative 2 except that the proposed FNC modifications include the bend easing at turns 1 and 3 and the extension of the Bar Channel dimensions to Buoy #37. These proposed modifications would increase the amount of new work dredged material associated with the channel modification by approximately 2 mcy and maintenance material by about 400,000 cy/year. Adjusted dredged material quantities are shown in Table 16. Placement options for dredged material would not change from what was described for Alternative 2.

Table 16
Estimated Dredged Material Quantities (Alternative 3)

Feature	West Pier Expansion	East Pier Expansion	North Harbor and West Pier Berthing Areas	Turning Basin Expansion	FNC	Totals
New Work	2.3 mcy	560,000 cy	820,000 cy	5.48 mcy	52.0 mcy	61.2 mcy
Maintenance	N/A	N/A	245,000–530,000 cy/year	211,000–586,000 cy/year	7.7 mcy/year	8.25–8.8 mcy/year

Source: Anchor QEA LLC (2013).

The proposed channel dimensions would be the same as described for Alternative 2, except for the two additional modifications as previously noted. However, because the two proposed modifications to the FNC (the additional easing at turn 1 in the Bar Channel and turn 3 in the Sound Channel and extension of

the Bar Channel dimensions to Buoy #37) could make navigation of the FNC less challenging and more timely, it is anticipated that the Port will more easily attract additional tenants or increase use of the Port by existing tenants compared to the other two action alternatives. Therefore, operation of the expanded Port facility under Alternative 3 is expected to increase the Port's annual throughput to up to 2.0 million TEUs by 2060.

5.0 POTENTIAL COMMUNITY IMPACTS

5.1 SOCIOECONOMIC RESOURCES

The three action alternatives and the No-Action Alternative would have impacts to socioeconomic resources in the area.

5.1.1 Income and Employment

Currently, the Gulfport-Biloxi MSA has an unemployment rate of 9 percent, and the labor force has been declining for a decade. Jobs created by the project would provide opportunities for those currently unemployed, and increased throughput capacity at the Port could attract workers to the area, likely providing a positive impact to the declining economy.

The No-Action Alternative assumes that the existing Port operations with the Restoration Project would continue but does not include the proposed PGEP; therefore, the potential for impacts to the existing employment and income associated with the proposed action would not occur.

Through the No-Action Alternative, it is assumed that the Port would have an annual throughput between 250,000 and 400,000 TEUs, which would grow up to 1.0 million TEUs by 2060. It is estimated that Port operations would require 4.758 employees per 1,000 TEUs (see Appendix C in EIS). Therefore, the No-Action Alternative would provide between 1,190 and 1,903 jobs at completion of the Restoration Project and 4,758 employees by 2060 (see Table 4.3-1 in EIS). The No-Action Alternative would have some benefit to the area labor force, but it would have the least positive impact to labor force and employment compared with the action alternatives.

Alternative 1 is expected to increase capabilities at the Port to create approximately 2,767 construction-related jobs annually over the course of 5 years (see Appendix C in EIS). As such, the construction sector would be the most impacted by Alternative 1. Due to high construction sector unemployment, it is likely that most of the construction jobs would be filled locally, resulting in a small but positive impact to the local labor force and unemployment rates.

Alternative 1 would have a maximum throughput of up to 1.2 million TEUs by 2060, which would potentially require 5,710 employees (see Table 4.3-1 in EIS). Put another way, Alternative 1 would generate 952 more jobs than the No-Action Alternative, of which 250 would be jobs at the Port. Alternative 1 would have greater overall benefits on labor force, employment, and economic sectors than the No-Action Alternative; however, it would provide fewer benefits than Alternative 2 or Alternative 3.

Along with the creation of approximately 2,767 construction-related jobs annually for 5 years, Alternative 2 would have a larger increase in TEU throughput of up to 1.7 million by 2060, which would potentially require 8,089 employees (see Table 4.3-1 in EIS). Put another way, Alternative 2 would generate 2,379 more jobs than the No-Action Alternative, of which 625 would be Port jobs.

Alternative 2 would also require dredging and placement of materials within the FNC, but this activity is specialized and the type of work done by only a few companies within the U.S. Thus, this specific measure of the alternative would have virtually no effect on local employment rates.

Alternative 3 includes a wider turning basin, which would allow 2.0 million TEUs annually by 2060, which in turn would potentially require 9,516 employees. Regardless of which alternative is advanced, including the No-Action Alternative, job growth is anticipated at the Port. Based on data obtained and interviews conducted, this job growth will likely be in more skilled positions at the Port than the City of Gulfport labor force may currently have available. Based on the education level of the population, it is more than likely that the local community members could be trained to handle the future jobs at the Port. This issue is discussed further in Section 5.1.2.

Alternative 3 would have the greatest capacity for TEUs and the most beneficial impacts on labor force and employment compared with all other alternatives.

5.1.1.1 Income and Employment Environmental Justice Viewpoint

The PGEP will not disproportionately or adversely impact a low-income or minority population (EJ Community). The potential impacts anticipated from the PGEP to income and employment would be beneficial. The EJ Community of the City of Gulfport would have the opportunity to benefit from the increased employment. One of the comments presented during the interviews was that the Port would require technically skilled labor. Interviewees felt that the local population would be able to fulfill those roles capably and with specialized job training a higher percentage of local residents would excel in those future roles.

5.1.2 Potential Mitigation Recommendations

A recurring concern from the interviewees was the creation of a job training program. Each of the interviewees understood the importance of economic growth and job creation for the people of Gulfport. They also wanted the Port to take measure to help local residents train and apply for any of the future jobs that would occur as a result of the PGEP. The following potential mitigation recommendations are a result of the interviews conducted for this CIA.

Even if Port expansion is limited to previously approved actions under the No-Action Alternative, Port traffic demand is still expected to grow as is jobs associated with the Port. However, any growth from the No-Action Alternative would be at a lower rate than under the action alternatives due to lack of the proposed improvements that could help attract more tenants and other shipping to the Port.

As one interviewee said, “There are no more unskilled labor jobs. All the back-breaking jobs will be gone. All the new jobs will be online and high tech.” Current Gulfport residents could fill these jobs; however, if there was a comprehensive job training program, even more residents could benefit from the

new jobs. Any potential training program would need to meet the requirements and provide the skill set for a job at the Port.

Another interviewee stressed the importance of including a training program and internship for high school students. Such a program could provide valuable first job experiences for the youth of Gulfport and could cover everything from applying online for a job and interviewing to teaching the skills necessary to succeed in the occupation.

Another interviewee emphasized the importance of flexible scheduling for the job training programming in order to make it available for students, single mothers, and other community members who face time constraints. The interviewee went on to stress the importance of scheduling the work day or offering more part-time positions that are in line with the school schedule.

A job training program as a potential mitigation measure for the No-Action Alternative would not only benefit the community, but also provide the Port with a capable, qualified, and competitive workforce. Additionally it should be stated that the creation of any potential job training program would need the considerable involvement of local community leaders. The local leaders have greater insight into what skills the community members have and what skills need to be augmented by the training programs.

The potential mitigation measures for effects on income and employment are the same for the action alternatives (Alternative 1, Alternative 2, and Alternative 3) as for the No-Action Alternative.

5.2 ROAD AND RAIL TRAFFIC

5.2.1 Traffic

A roadway and rail traffic analysis was completed for the No-Action Alternative and the action alternatives (see Appendix N of the EIS). Within which there are six level of service (LOS) ratings that are depicted by the letters A through F. A description of what these qualitative measure mean is described below:

- LOS A is the best LOS, and represents uncongested traffic with light traffic volumes;
- LOS C is normally the worst LOS tolerated in rural areas before improvements are warranted;
- LOS D is normally the worst tolerated in urban areas;
- LOS E represents traffic volumes near capacity; and
- LOS F is the worst, and represents congested traffic conditions due to traffic volumes that exceed the road's capacity.

The worst acceptable LOS tolerated in urban areas is LOS D, thus road segments operating at LOS E or F would be considered unacceptable.

Existing traffic shows one intersection approach on 28th Street had a minor issues associated with traffic signal delay. Though there is sufficient capacity to accommodate 2012 traffic, the intersection carries traffic volumes that are fairly high for an intersection of two lane roadways. Thus, a long signal cycle time is the cause of the delay (Table 17).

Table 17
Roadway Corridor LOS Deficiencies – 2012 Existing Conditions

Corridor Name	Corridor Limits	Potential Cause of LOS E-F
I-10 Freeway	All LOS D or better	No issues
US 49 (25th Avenue)	All LOS D or better	No issues
US 90 (Beach Blvd.)	All LOS D or better	No issues
Canal Road	All LOS D or better	No issues
25th Street	All LOS D or better	No issues
28th Street	AM LOS E, eastbound approaching Canal Road	Traffic signal delay due to long cycle time, capacity is adequate
30th Avenue	All LOS D or better	No issues

Under the No-Action Alternative anticipated changes in traffic are expected in the project vicinity that are not a result of potential increased throughput at the Port. Analysis of the LOS for roads along primary truck and employee/service vehicle routes serving the Port are expected to be below acceptable levels for an urban area along two sections or roadway and at three intersections by 2060. The roadways are the westbound to southbound loop ramp at the I-10/US 49 interchange (LOS E) and US 49 northbound approaching 28th Street and southbound approaching 25th Street (LOS F). The affected intersections are Canal Road southbound approaching 28th Street (LOS E), 28th Street eastbound and westbound approaching Canal Road (LOS F), and 28th Street eastbound approaching 30th Avenue (LOS F). Additionally, under the No-Action Alternative, delays are expected at rail crossings that would have an average delay time of approximately 2½ minutes each for a total of up to nine trains per day.

Under Alternative 1, although throughput is expected to be higher than for the No-Action Alternative, the increase is not substantial enough to affect traffic delays. Thus, LOS impacts to traffic and delays at rail crossings are expected to be essentially the same as described for the No-Action Alternative.

Addition of the FNC modification under Alternative 2 has the potential to increase throughput at the Port by approximately 700,000 TEUs per year over the No-Action Alternative. As a result, potential traffic related impacts would be larger. The same roadway sections would be impacted as described for the No-Action Alternative, but additional Port-related traffic would also impact one additional intersection (30th Avenue northbound approaching 25th Street). Additionally, although the length of train and speed would not change the 2½-minute delay time, the approximate number of trains per day would increase to 15. Thus, delays at rail crossings in the vicinity of the Port could be encountered more often.

Under Alternative 3, changes to the FNC modification would only slightly increase projected throughput at the Port in 2060. Thus, anticipated changes in LOS impacts would be similar to that described for Alternative 2. The only difference is that the 30th Avenue northbound roadway approaching 25th Street would also have reduced LOS due to the timing of the traffic light at that interchange. In regards to rail crossing delays, the delay time would remain at 2½ minutes but would occur up to 17 times per day.

Overall, the majority of impacts seen in the vicinity of the Port would be caused by background traffic rather than Port-related traffic. Additionally, it should be noted that traffic forecasting and modeling included only those roadway improvements that have been approved and funded. Thus, it is likely that changes in roadway planning over time would alleviate many of the LOS issues identified.

5.2.1.1 Traffic Environmental Justice Viewpoint

Traffic is currently an issue in Gulfport's EJ communities. Background and unrelated Port traffic have contributed to the current traffic conditions in the City of Gulfport. All of the roadways that were analyzed for this CIA showed that traffic in 2012 was predominantly LOS D, which is normally the worst tolerated in urban areas. The one intersection that came out to a LOS E, which represents traffic volumes near capacity, is located in a census tract block group with minority population percentage greater than the city average of 43.1 percent (Figure 4).

The No-Action Alternative and the three action alternatives would generate impacts to traffic in census tract block groups with higher percentage than city minority population. This is an unavoidable impact as the truck routes associated with the Port were established on the roadways prior to the growth of the neighborhoods. However the majority of those impacts will not be felt until 2020. Alternative 1 would have the same potential impacts and time frame as the No-Action Alternative. Alternative 2 and Alternative 3 would have the same potential impacts and time frame as the No-Action Alternative and affect two and four additional intersections, respectively, by 2060. Given the sufficient timeframe to address the potential issues associated with all three action alternatives, and even with the No-Action Alternative, these issues would not be considered impacts if they are mitigated beforehand.

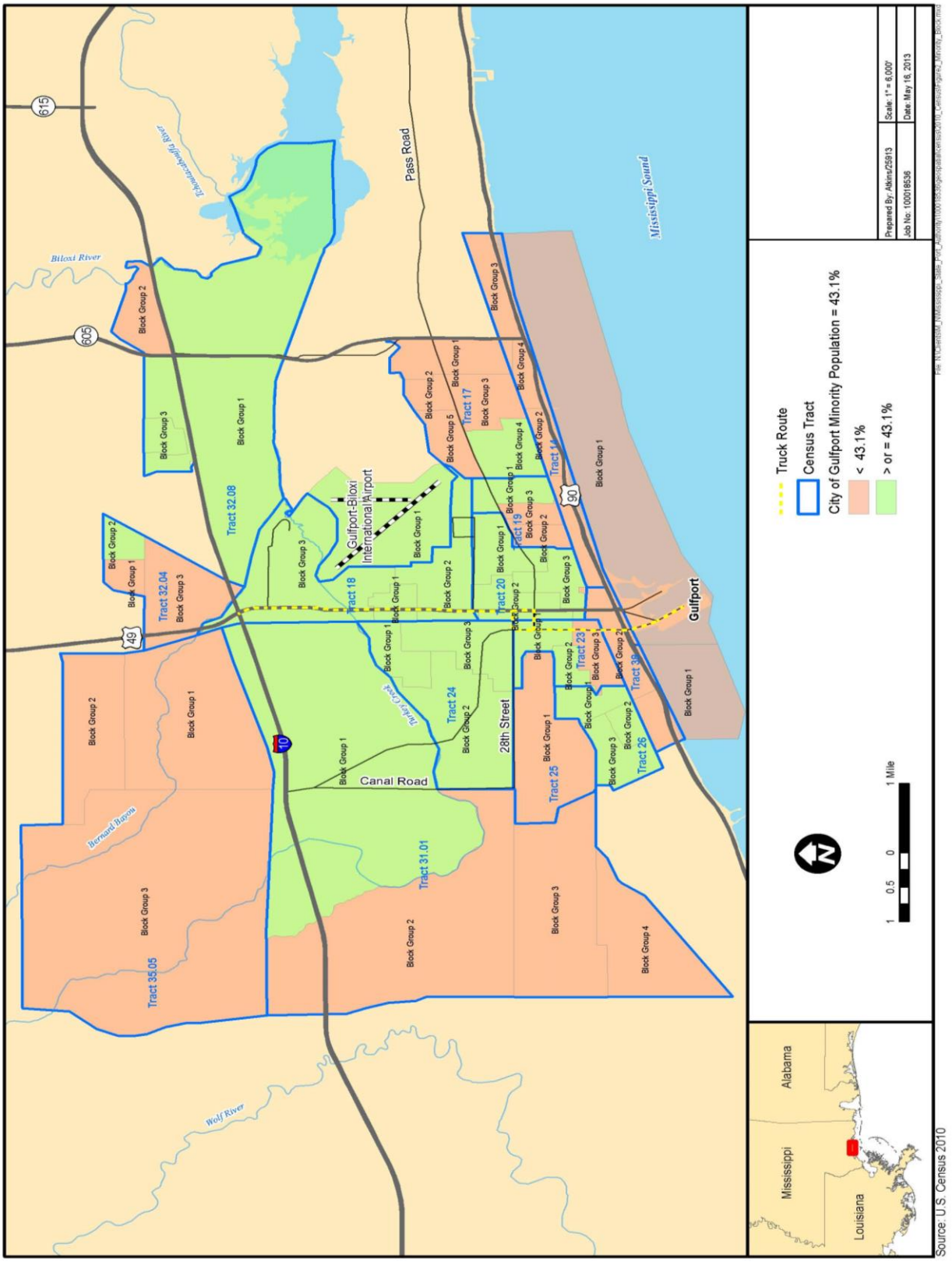

Figure 4: 2010 Percentage Minority by Census Block Group

5.2.2 Potential Mitigation Recommendations

This section organizes the list of roadway improvements to identify those that might be a direct result of new traffic generated by the three action alternatives. Those improvements that are a product of background traffic growth in the Gulf Coast urbanized area and growth in shipping activity constrained by previously approved expansion actions are initially identified so that those explicitly resulting from the proposed Port expansion alternatives can be separated.

5.2.2.1 Traffic Mitigation – No-Action Alternative

Even if Port expansion is limited to previously approved actions, Port traffic demand is still expected to grow, but at a lower rate than the action alternatives. Table 18 summarizes which road network improvements would be needed regardless of any action alternatives.

Table 18
Roadway Improvement Needs – No-Action Alternative

Year Needed	Corridor Name	Location	Potential Improvement	Comments
2020	28th Street	Canal Road Intersection	Eastbound Channelized Through Lane	Could be included with the committed Long-Range Plan (LRP) project to add two-way left-turn lane (TWLTL) to 28th Street from Canal Road to 30th Avenue
2040	28th Street	West of Canal Road to 30th Avenue	Widen 28th Street to 4 lanes with TWLTL	New project needed to handle regional traffic growth beyond 2035 Gulf Regional Planning Commission (GRPC) LRP
2040	Canal Road	28th Street Intersection	Add second southbound left-turn lane	Could be included with uncommitted LRP project to add TWLTL to Canal Road from south of I-10 to 28th Street
2060	US 49	25th Street to south of 28th Street	Eliminate on-street parking, restripe existing roadway from 4 to 6 lanes	Low cost project
2060	I-10/US 49 Interchange	Westbound to southbound loop ramp	Close loop ramp, construct left turn lanes on existing westbound to northbound ramp, add traffic signal to US 49 for left turn lanes	New project needed to handle regional traffic growth beyond 2035 GRPC LRP if planned new I-10 interchanges are not built (Airport Road or I-310)

5.2.2.2 Traffic Mitigation – Alternative 1

Added traffic resulting from Alternative 1, expansion of the Port area, does not result in the need for additional improvements beyond those required to sustain background traffic growth and Port traffic growth associated with the No-Action Alternative (see Table 18).

5.2.2.3 Traffic Mitigation – Alternative 2

Table 19 summarizes the roadway improvements that would result from the implementation of Alternative 2. These improvements would be in addition to the No-Action Alternative improvements (see Table 18).

Table 19 17
Roadway Improvement Needs – Alternative 2

Year Needed	Corridor Name	Location	Potential Improvement	Comments
2060	30th Avenue	Northbound at 25th Street	Add northbound right-turn bay	Low cost project
2060	US 49	Southbound at Creosote Road	Widen roadway to add second southbound left-turn lane	Depends on uncommitted GRPC LRP project to widen Creosote Road to 4 lanes from US 49 to Three Rivers Road

5.2.2.4 Traffic Mitigation – Alternative 3

Table 20 summarizes the roadway improvements that would result from the implementation of Alternative 3. These improvements would be in addition to the No-Action Alternative (Table 18) and Alternative 2 (Table 19) improvements.

Table 20
Roadway Improvement Needs – Alternative 3

Year Needed	Corridor Name	Location	Potential Improvement	Comments
2060	30th Avenue	Southbound at 19th Street	Evaluate traffic signal timing and turn lane use	Low cost project
2060	Canal Road	South of I-10 to 28th Street	Widen roadway to add TWLTL	TWLTL is an uncommitted GRPC LRP project

5.3 AIR QUALITY

5.3.1 Potential Impacts

No construction or emission sources are associated with the No-Action Alternative, but over time, the Port is projected to achieve an annual throughput of up to 1.0 million TEUs by 2060. Therefore, it is expected that air contaminant emissions associated with Port operations would increase. Temporary increases in air pollution, including emissions of volatile organic compounds, nitrogen oxides, carbon monoxide, sulfur oxides, particulate matter of 10 micrometers or less, and particulate matter less than 2.5 micrometers in diameter, would result from the marine vessels and land-based equipment associated with construction of all action alternatives. However, emissions from these construction activities are not expected to adversely impact the long-term air quality in the area. For Alternative 3, operation of the

expanded Port facilities in combination with the proposed channel modifications is anticipated to result in an increase in throughput projected to reach 2.0 million TEUs by 2060. As such, it is expected that air contaminant emissions would increase due to increased cargo transport to and from the Port. Therefore, in the long term, this alternative is anticipated to have an increase in impacts compared to the No-Action Alternative, Alternative 1, and Alternative 2.

The vehicular air quality study is still being conducted and will be included in the next version of this Community Impact Assessment.

5.3.1.1 Air Quality Environmental Justice Viewpoint

The vehicular air quality study is still being conducted and will be included in the next version of this Community Impact Assessment. The analysis will identify any EJ communities that could be potentially impacted by any of the PGEP Alternatives.

5.3.2 Potential Mitigation Recommendations

Potential mitigation recommendations will be included after the vehicular air quality study is concluded, as applicable.

5.4 NOISE

5.4.1 Potential Noise Impacts

During any construction project, the overall noise levels vary based on the level of construction activity, the types of equipment that are being operated onsite, proximity to construction site, and the types of equipment operated simultaneously. Noise data for the Port were not available; however, noise data from the Port of Los Angeles were adjusted to levels anticipated from operational activities at the Port.

The amplitude of a sound corresponds to the human sensation of loudness. Human reaction to loudness, or sound pressure, is measured in terms of sound pressure levels, and expressed in terms of decibels (dB). Regulatory agencies involved in assessing community noise or establishing noise standards typically require that measurements and analysis of noise be performed using the A-weighted sound level (dBA), which is adjusted in a manner similar to human perception.

Under the No-Action Alternative, an annual throughput of between 250,000 and 400,000 TEUs is anticipated following completion of the Restoration Project, with the potential to reach 1.0 million TEUs by 2060. Most of the increase in Port operations would occur at the existing West Pier, which is located approximately 2,400 feet from the nearest noise-sensitive receptor. Using the operational range from the Port of Los Angeles, which has a throughput of approximately 8.0 million TEUs resulting in an operational noise level of 55 to 70 dBA at 1,100 feet (discussed in Section 3.6.2), noise levels at the noise-sensitive receptor nearest the West Pier Expansion caused by operations at the Port would be in the approximate range of 39 to 54 dBA for year 2060.

The implementation of the PGEP would result in short- and long-term noise in the vicinity of the project area. Short-term noise would be associated with construction activities at the West and East piers, placement of fill in the North Harbor, construction of an eastern breakwater, and dredging associated with the expansion of the Turning Basin. Project-related long-term noise would be associated with increased Port operations.

Evaluation of potential noise sources indicates that 10 pieces of simultaneously operating heavy equipment would have an average noise level of 85 dBA at 50 feet and a combined noise level of 95 dBA. The noise level would be 63 dBA at 2,100 feet (i.e., the distance from the North Harbor to the nearest noise-sensitive receptor). Expansion activities at the East Pier, North Pier, and proposed breakwater would be a greater distance from noise-sensitive receptors, so project-related construction noise at communities would be less when work is underway in those areas.

A dredge with a noise level of 70 dBA at 50 feet would result in a noise level of about 29 dBA at a distance of 5,700 feet (i.e., distance between dredging activities and the nearest noise-sensitive site). Two dredges operating in close proximity to each other would result in a noise level of 32 dBA at a distance of 5,700 feet. The noise generated by dredging activities would not be noticeable in communities and should not generate complaints at noise-sensitive sites.

Besides the short-term noise levels associated with the construction of the PGEP, the projected increase in throughput of the action alternatives would, in turn, increase operational noise at the Port. Alternative 1 would increase TEUs handled at the West Pier to 1.2 million by 2060. Typical noise levels at the noise-sensitive receptor nearest the West Pier caused by operations would be in the approximate range of 40 to 55 dBA for year 2060, an increase of about 1 dBA compared with the No-Action Alternative.

Alternative 2 would increase TEUs handled at the West Pier to 1.7 million by 2060. Typical noise levels at the noise-sensitive receptor nearest the West Pier caused by operations would be in the approximate range of 41 to 56 dBA for year 2060, an increase of about 2.0 dBA compared with the No-Action Alternative.

Alternative 3 would increase TEUs handled at the West Pier to 2.0 million by 2060. Typical noise levels at the noise-sensitive receptor nearest the West Pier caused by operations would be in the approximate range of 42 to 57 dBA, an increase of only 3 dBA compared to the No-Action Alternative.

Considering the distance from the operational noise sources to the nearest sensitive receptor and typical ambient noise levels in communities, the low level of project-related operational noise resulting from the West Pier Expansion should not be noticeable and should not result in noise complaints.

It should be noted that a noise analysis of rail traffic is currently being conducted and will be included in the next version of this Community Impact Assessment.

5.4.1.1 Noise Environmental Justice Viewpoint

The noise study used for PGEP EIS focused on a Return on Investment (ROI) for roadway traffic noise. The ROI used in the noise study extends from Landon Road north of I-10 to US 90 on the south, and from US 49 on the east to Canal Road and 30th Avenue on the west. Roadway traffic includes passenger cars, service trucks, and freight trucks. This covers a few communities with minority populations greater than the city average.

Forecasted increases in 2060 traffic volumes resulting from the No-Action Alternative ranged from a low of 80.4 percent on 25th Street to a high of 97.4 percent on 30th Avenue. Because traffic volume increases would be less than double, we can conservatively estimate a less than 3-dBA increase in traffic noise throughout the ROI. Using the current noise conditions, Port-related roadway traffic noise levels would conservatively increase from 48 dBA to less than 51 dBA in light suburban areas, and from 51 dBA to less than 54 dBA in light urban areas. Changes in noise levels of 3 dBA or less are not typically detectable by the average human ear (FHWA, 2011)

Therefore, based on Federal Transit Administration (2006) transit noise impact parameters, the No-Action Alternative would have a negligible effect on the noise environment. This means that the change in the cumulative noise level within the traffic corridor would result in an insignificant increase in the number of people highly annoyed by the noise increase.

Construction of any of the three action alternatives would require the use of heavy equipment. Noise levels associated with heavy equipment typically used for construction activities associated with the proposed expansion range from approximately 67 to 105 dB at a distance of 50 feet. During any construction project, the overall noise levels vary based on the level of construction activity, the types of equipment that are being operated on-site, and the types of equipment operated simultaneously.

As noted in Section 3.6.2 of the EIS, measured ambient noise levels at noise-sensitive receptors in communities with a similar degree of neighborhood activity ranged between 60.9 and 65.1 day-night sound level (L_{dn}) (HFP Acoustical Consultants, Inc., 2002). Therefore, any noise generated by dredging activities would not be noticeable in communities and should not generate complaints at noise-sensitive sites in closest proximity to the project. In addition, any noise occurring from the PGEP and dredging operations would be temporary and could be restricted to daylight hours. Considering the distance between Port expansion or dredging operations and the noise-sensitive sites (between 2,100 and 5,700+ feet), the exposure to existing noise from the much closer Port/industrial activities, as well as existing neighborhood sources (i.e., traffic, common neighborhood activities, etc.), project-related short-term noise associated with Alternative 1 would be anticipated to be insignificant.

Forecasted changes in traffic volume resulting from the implementation of Alternative 1 would result in very small increases in traffic volumes within the ROI. The increase would range from 0.1 percent on 25th Street to 2.6 percent on 30th Avenue (see Table 4.6-2 in the EIS). The change in noise resulting from

this small increase in traffic when compared to the No-Action Alternative would not be perceptible to the human ear.

Alternative 2 and Alternative 3 would have similar noise affects as Alternative 1. Overall noise from any of the alternatives would not impact any EJ communities. A study of rail traffic noise is being concluded and will be included in the next version of this CIA.

5.4.2 Potential Mitigation Recommendation

Any potential mitigation recommendations will be included after the noise analysis of rail traffic is concluded, as applicable.

When considering the potential for disproportionate impacts on minority, low-income, or LEP populations for the CIA, census data were used to evaluate Gulfport relative to Harrison County. Based on that data there is no disproportionate impact on minority, low-income, or LEP populations. Information presented in Tables 2, 3, and 16, in conjunction with field observations made during the CIA process, demonstrate there would be no appreciable difference between the potential impacts to EJ communities. Additionally there would be beneficial impacts to all communities in the form of increased jobs and economic growth.

5.5 COMMUNITY COHESION

Community cohesion is generally characterized by interaction amongst neighbors and friends, participation in community activities and organizations, and involvement in local government and politics. Cohesive communities may also have several generations of families, extended families, and strong informal (nongovernmental) social support networks that can provide for childcare, emergency assistance, and spiritual guidance, among other possibilities. Transportation and land use changes can have effects on community cohesion. People and relationships can be separated by barriers and greater distances, affecting their ability to see and communicate with one another easily. Alternatively, transportation facilities can tie the communities more closely together, making it easier for people to interact.

Community cohesion can be defined in many ways, but primarily it is identified as those things that allow shared perceptions and attitudes about a specific place. According to the FHWA, Office of Environment and Planning, it is generally expressed through "identification with, commitment to, and attitude toward a particular identifiable area" (FHWA, 1996). Consequently, it is usually defined in terms of spatial relationships, but can also be based on common characteristic, interest, or economic status. In assessing impacts to community cohesion in the City of Gulfport, a qualitative methodology was utilized, which was based on field observation within the community, discussions with community leaders, and review of project comments from past public involvement activities (see Section 2.0).

5.5.1 Community Cohesion Environmental Justice Viewpoint

While some of the residents of the City of Gulfport walk and bike to access various parts of the city, as observed during field investigations, residents do rely heavily on vehicular transportation for access to work sites, schools, recreational opportunities, places of worship, medical facilities/services, and other community activities. As identified in the U.S. Census Bureau and by interviews conducted for this CIA, the City of Gulfport has an aging population and a high concentration of minority population.

According to one interviewee, "Growth and lack of growth each have their problems. We can work with the growing pains. It is an inconvenience but a good inconvenience… Growth can provide opportunities for people to get along with each other." The PGEP would be primarily situated in an industrial area, but it would affect the whole community of Gulfport. The Port is one of Gulfport's largest employers and is one of Gulfport's economic pillars; in fact, the Port predates the City of Gulfport. The PGEP would increase the viability of the Port, which according to one of the interviewees would help increase community cohesion. The Port would not change the community's overall sense of place; however, increased traffic could cause neighborhoods to feel more isolated and difficult to navigate for motorist and pedestrians. However, the traffic analysis presented earlier indicates that potential impacts to area traffic would be largely a result of background traffic, though the Port would be one of many contributors to the overall roadway traffic of Gulfport. Additionally, the potential effects of traffic would not occur until 2020. This added traffic would ramp up gradually over the course of years, which would give the community time to adapt, plan, and prepare.

Furthermore, induced growth from the PGEP would occur that would also increase the local economy. However, rail traffic associated with increased Port capacity would need to be addressed. An analysis of the rail traffic is being conducted and will be included in the next update of this CIA.

The alternatives of the PGEP would change the face of the Port but not the sense of community. The City of Gulfport's EJ communities would be able to continue as they have and would not be adversely or disproportionately affected by the PGEP.

5.5.2 Potential Mitigation Impacts

A recurring concern from the interviewees was the lack of dialogue between community leaders and the Port. Each of the interviewees understood the importance of economic growth and job creation for the people of Gulfport, and they also wanted the Port to involve them in any measures taken to mitigate any potential impacts from growth at the Port. One interviewee said, "People feel like they have been betrayed, lied to, and mistreated because of the way the data was presented." Therefore, it is important to have community involved in a significant way in any implementation of mitigation.

Regardless of which alternative is advanced for the Port, the Port is still expected to grow. The degree of change would be the only difference among the four project alternatives. As a result, the mitigation discussion for community cohesion is the same regardless of the alternative advanced.

An interviewee stressed the importance of flexible scheduling for work hours at the Port: "Changing the schedule would make it easier for parents to have day jobs at the Port, jobs that could be done by single mothers." This sentiment was also echoed by other interviewees.

A recurring topic from the interviews was entrepreneurship. Many of the interviewees felt that entrepreneurship was lacking in the community. That lack of entrepreneurship was creating an attitude of negativity. Projects like the PGEP would have the opportunity to change that by providing a dialogue and mechanism for involving the community and local vendors in the PGEP and ultimately supporting entrepreneurial activities.

Another recurring topic of discussion was about community improvements. Many felt that the Port was not doing its best at visual beautification along US 90 when the community was making efforts in this area. Suggestions were made to include public art, mosaics, and context sensitive design to beautify the area around the Port and create a sense of place for the community. The interviewees felt that any activity undertaken to meet the community needs would greatly enhance community cohesion and make local residents prouder of Gulfport.

Recommended potential mitigation measures to address community involvement based on this CIA would be to develop a plan of continuous outreach between the Port and community leaders. This measure would work with community leaders to allow them to voice their needs, beyond that of flexible work scheduling and promoting entrepreneurship, and identify mechanisms through which the Port and community could work together to enhance the cohesion within the community. Another mitigation measure to address community involvement would be implemented by a beautification program around the Port. Through input from local residents and community leaders, the Port could undertake actions that would greatly aide in community cohesion.

6.0 SUMMARY AND RECOMMENDATIONS

The alternatives analysis presented in the EIS (sections 2 and 4) provides information necessary to identify the environmentally preferable alternative, i.e., the one with the least overall negative impacts to the environment. In general, the selected alternative should minimize damage to the biological and physical environment while protecting, preserving, and enhancing historic, cultural, and natural resources (40 CFR 1508.14).

Three action alternatives were evaluated in this EIS and compared to the No-Action Alternative. The three action alternatives evaluated are Alternative 1 (expansion with no channel modification), Alternative 2 (expansion with channel modification 1), and Alternative 3 (expansion with Applicant's preferred channel modification). As discussed in Section 2.4 of the EIS, potential impacts associated with the action alternatives are very similar for most resources. The majority of differences are associated with the addition of the channel modification in alternatives 2 and 3 compared to Alternative 1 and the changes associated with increased throughput. For the most part, differences associated with the channel are the result of increased dredging during construction and potentially during maintenance activities. These increases would be short term and do not significantly affect the resources long term. The primary differences between the alternatives are show in Table 21.

Table 18
Primary Alternative Differences

Criteria	No-Action	Alternative 1	Alternative 2	Alternative 3
Dredged Volume (construction)	0	7.4 mcy	59.2 mcy	61.2 mcy
Potential Annual TEU Throughput (2060)	1.0 million	1.2 million	1.7 million	2.0 million
Job Creation (full-time equivalent jobs by 2060)	4,758	5,710	8,089	9,516
Traffic (Roadways/Intersections with Unacceptable LOS in 2060)	2/3	2/3	3/3	3/3 with additional signal issue at one intersection
Traffic (Number of Potential Rail Crossing Delays per Day)	9	9	15	17
Vessel Trips (Daily Vessel Trips in 2060)	4.6	5.5	3.1	3.7

The MSPA identified Alternative 3 as their preferred alternative because the additional changes to the FNC would potentially allow increased throughput compared to the other alternatives. As can be seen in Table 10.0-1 in the EIS, the number of full-time equivalent jobs created by 2060 would be expected to be approximately 1,427 higher under Alternative 3 compared to Alternative 2.

The largest negative impact associated with alternatives 2 and 3 is the number of daily train trips. The number of trips would almost double by 2060 compared to the No-Action Alternative and Alternative 1.

There must be a balance with potential beneficial impacts outweighing potential negative impacts. Since the EIS looks at actions today affecting decades into the future, there are actions that could be taken to mitigate for traffic delays at rail crossings (Section 6 of EIS).

Additional negative effects associated with alternatives 2 and 3 compared to Alternative 1 would be either short term or potentially mitigated, and the jobs created and resulting boost to the local economy, as well as the reduced risk of spills, are long-term benefits.

This CIA concurs with the MSPA findings; Alternative 3 is the most beneficial alternative when compared to all other alternatives. Increased throughput potential associated with alternatives 2 and 3 would equate to increase in beneficial impacts such as increased jobs, increased revenue, and associated economic benefits in the area. It was stated in conversations with community members that economic growth is needed in the city. Alternative 3 would lead to the greatest economic growth.

This CIA also suggests implementing mitigation measures even if the No-Action Alternative is selected. Suggested mitigation measures include:

- A job training program, as outlined in Section 5 would not only benefit the community but also provide the Port with a capable, qualified, and competitive workforce. This mitigation measure ensures that the PGEP would meet its potential to beneficially impact the EJ community.
- Roadway improvements listed in Section 5.2 would ensure that minority neighborhoods would not be adversely impacted.
- Flexible work schedules for work hours at the Port would allow greater participation from not only the EJ communities but also the City of Gulfport.
- The Port could promote entrepreneurship in the community. Projects like the PGEP could have the opportunity to involve local vendors and ultimately support entrepreneurial activities. Again, this measure would allow greater participation from not only the EJ communities but also the City of Gulfport.
- The Port could engage in additional visual beautification along US 90. Providing public art, mosaics, and context sensitive design to beautify the area around the Port and create a sense of place for the community.
- The Port could engage in a plan of continuous outreach between the Port and community leaders. This measure would work with community leaders to hear their needs and identify areas where the community could work together.

Finally, census data were used in the CIA to evaluate the City of Gulfport relative to Harrison County so as to assess the potential for disproportionate impacts on minority, low-income, or LEP populations from the proposed alternatives. Based on that data, no disproportionate impact on minority, low-income, or LEP populations would be anticipated. Information presented in this CIA, in conjunction with field observations made during the CIA process, demonstrate there would be no appreciable difference between the potential impacts to EJ communities and the general communities. Additionally, there would be beneficial impacts to all communities in the form of increased jobs and economic growth. The

mitigation measures presented for income, employment, and community cohesion are designed to provide a forum for greater involvement between the Port and the community. The mitigation measures presented for traffic impacts must be implemented to ensure adequate roadway capacity and to lessen any potential future impacts from the PGEP.

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Attachment A

Summary of Community Impact Assessment Interview Contact

Attachment A: Summary of Community Impact Assessment Interview Contact

Interview Entity	Contact Person	Result of Contact Efforts	Interview Held Date/Time/Location
Service Organizations			
N. Gulfport Senior Center		Called 10-22-13 and left message. Called 10-23-13 and left another message.	NO INTERVIEW MADE
Gulfport School District	Velma Johnson, Coordinator	Called 10-22-13 and left message. Received return call offered interview, was told to expect a return call. Did not hear back.	NO INTERVIEW MADE
Rotary Club of Gulfport	Edwin Allen, Community Service Chairman	Sent message via Rotary website.	NO INTERVIEW MADE
Mississippi City Lions Club	Billy Bragg, President	Called 10-22-13.Wrong number listed. Could not find the correct number.	NO INTERVIEW MADE
PEO Sisterhood, Chapter B, Gulfport	Carol Reeves	Called on 10-23-2013. Declined to be interviewed.	NO INTERVIEW MADE
America Business Women's Association	Liz Hoop, Secretary	Sent email, no response.	NO INTERVIEW MADE
National Association of Retired Federal Employees (NARFE)	Norman, Member	Called 10-22-13. Wrong number listed.	NO INTERVIEW MADE
Coast Young Professionals	Kelsey Blum, Communications Director	Left message 1-3-2014. Blum called back, denied request.	NO INTERVIEW MADE
Boys and Girls Club	Tawana Banks	Left message 1-3-14. Left message 1-31-14.	NO INTERVIEW MADE
Coastal Family Health Center	Cathy Dumal, Project Director	Left message 1-3-14. Left message 1-31-14.	NO INTERVIEW MADE
Coastal Women For Change	Latanya Winn	Left message 1-3-14. Phone didn't connect after three attempts on 1-31-14.	NO INTERVIEW MADE
Disability Connection		Called 1-3-14. Called 1-7-14 and left message. Called 1-31-14 and left message.	NO INTERVIEW MADE
Gaston Point Community/Development Corporation	Brillia Hudson, Program Coordinator	Left message 1-3-14. Tentative yes. Sent information on 1-31-14. Called on 2-7-14 to follow up and confirm appointment time on 2-20, left message.	2-20-14 at 2:00 pm
Habitat For Humanity	Lindsay Freise Adele Lyons	Tentative yes, email info pack. Agreed to participate. Emailed to set up interview for morning of 2-20-14	2-20-14 at 9:00 am.

Attachment A: Summary of Community Impact Assessment Interview Contact

Interview Entity	Contact Person	Result of Contact Efforts	Interview Held Date/Time/Location
Gulf Coast Community Ministries	Amelia Bordeaux, Volunteer Coordinator	Left message 1-3-14. Left message 1-31-14.	NO INTERVIEW MADE
Gulf Coast Community Foundation	Lisa Schonewitz	Left message 1-3-14. Left message 1-31-14.	NO INTERVIEW MADE
Gulf Coast Community Action Agency, Inc.	Erica Hollimon	Left message 1-3-14. Left message 1-31-14.	NO INTERVIEW MADE
Hands on Mississippi	Holly Gibbs, Executive Director	Agreed on 1-3-14. Called on 2-7-14 to follow up and confirm appointment time on 2-20, left message.	~~2-20 at 11:00 am~~. Cancelled
Gulf Coast Heritage Trails Partnership	Geneva Drummer, Assistant	Denied request 1-3-14.	NO INTERVIEW MADE
HOPE Adult Learning	Donna Daulton, Program Director	Tentative yes, emailed info pack. Decided to not participate on 1-31-14. Emailed on 2-13 to see if we would do a telephone interview.	~~Week of 2-17-14~~ NO INTERVIEW MADE
Land Trust for the Mississippi Coastal Plain	Connie Thrift, Operations Manager	Denied request 1-3-14.	NO INTERVIEW MADE
International Relief and Development- Youth Build	Thomas Patten	No longer operational.	NO INTERVIEW MADE
Open Doors Homeless Coalition	Brandi Clarke, Project Homeless Connect	Left message 1-3-14. Left message	NO INTERVIEW MADE
The Nourishing Place	Brenda Boothe, Associate Director	Call the Rev Jane Stanley (228) 596-1186. Called 1-31-14 agreed to interview. Confirmed interview on 2-17	2-20 at 1:00 pm.
Presbytery of MS Disaster Recovery	Virginia Stewart	Disconnected number.	NO INTERVIEW MADE
The Village El Pueblo	Jennie Searcy, Executive Director	Closed on Fridays. Called on 1-7 and left message.	NO INTERVIEW MADE
United Way of South Mississippi	Aletha Burge, Director Community Impact	Agreed. Left message 1-3-14. Spoke later in day 1-3-14. She would confirm with her boss. She left message on 1-6-14 to say they could do it on 1-17-14. I confirmed on 1-9-14 that we will interview week of 2-17-14. Called on 2-7-14 to follow up and confirm appointment time on 2-20, left message.	2-20 at 1:00 pm.

Attachment A: Summary of Community Impact Assessment Interview Contact

Interview Entity	Contact Person	Result of Contact Efforts	Interview Held Date/Time/Location
Southern Mississippi Planning and Development District - Area Agency on Aging	Cynthia Caldwell	Left message 1-3-14. Left message 1-31-14.	NO INTERVIEW MADE
South Mississippi Housing & Development Corp	Vicky Richardson, Volunteer Coordinator Judith Moran	Tentative yes, email info pack to Judith Moran. Called on 2-7-14 to follow up and confirm appointment time on 2-20, left message. Confirmed appointment.	~~2-20 at 3:00 pm.~~ Canceled interview
Salvation Army	Zach Rhodes, Volunteer Coordinator	Left message 1-3-14. Left message 1-31-14.	NO INTERVIEW MADE
Gulfport Branch NAACP	Ruth Story?	Emailed group on 1-31-14, asked for response by 2-5-14, none received as of 2-6-14	NO INTERVIEW MADE
Center for Fair Housing	Teresa Bettis	tfbettissacfh.org. Emailed group on 1-31-14, asked for response by 2-5-14, none received as of 2-6-14.	NO INTERVIEW MADE
Center for Environmental and Economic Justice	Bishop James Black, Executive Director	Emailed on 1-31-14, asked for response by 2-5-14, none received as of 2-6-14	NO INTERVIEW MADE
Religious Groups			
The Tabernacle of Faith Ministries	Bishop Anthony Thompson	Verbally agreed on 1-3-14. Called on 2-7-14 to follow up and confirm appointment time on 2-20. Opted for 10 am meeting time.	2-20 at 10:00 am.
Little Rock Missionary Baptist Church	Pastor James Beal	Verbally agreed on 1-3-14 Called on 2-7-14 to follow up and confirm appointment time on 2-20, couldn't leave message. Will send email. Sent email set interview.	~~2-20 at 11:00 am~~. Canceled interview
Christian Worship Holy Ministries	Pastor Cora Walker	Verbally agreed on 1-3-14. Called on 2-7-14 to follow up and confirm appointment time she was unable to speak due to death in family. She urged me to call back next week. Called back and left message 2-10.	NO INTERVIEW MADE
Christian Missionary Baptist Church	Pastor Alphonso P Butler	Left message 1-3-14. Called on 2-7-14, he is a tentative yes. Will email him an info pack and ask for response by 2-12-14. Wrong email	~~2-20 at 2:00 pm.~~ Cancelled interview.

Attachment A: Summary of Community Impact Assessment Interview Contact

Interview Entity	Contact Person	Result of Contact Efforts	Interview Held Date/Time/Location
		address. Called to correct address and left message on 2-10.	
Rivers of Living Waters	Bishop B.R. Jackson	Verbally agreed on 1-3-14. Called on 2-7-14 to follow up and confirm appointment time on 2-20. Opted for 1 pm meeting time.	~~2-20-14 at 1:00 pm.~~ Cancelled interview.
Cornerstone Baptist Church	Pastor B. Simpson	Verbally agreed on 1-3-14. Called on 2-7-14 to follow up and confirm appointment time on 2-20. Opted for 10 am meeting time.	~~2-20-14 at 10:00 am~~. Cancelled interview.
Mt. Calvary M.B church	Pastor Fred Harper	Left message 1-31-14. Called back on 2-7-14 to agree to meeting.	~~2-20-14 at 2:00~~ Cancelled interview.
Family of Life Christian Center	Pastor Darnel Turner	Tentative yes 1-31-14. Sent info pack. Unsure if he can attend, wants me to put him down as a maybe for the 1:00 pm session.	~~Maybe 2-20-14 at 1:00 pm.~~ Cancelled interview.
Greater Mount Rest	Pastor Charles Miskell	Left message 1-31-14. Left message 2-7-14.	NO INTERVIEW MADE
Mount Pleasant United Methodist Church	Flower White (POC) Pastor Lindsey Robinson	Left message 1-31-14. Called on 2-7-14. Tentative yes. Will email info pack. Sent info pack and scheduled interview.	~~2-20 at 10:00 AM~~ Cancelled interview.
The following individuals spoke at the last scoping meeting			
Harrison County Development Commission	John "Shorty" Sneed	Called on 10-22-13 and left message. Called again on 10-23-13.	NO INTERVIEW MADE
Steps Coalition	Howard Paige	Spoke with Mr. Paige, asked him to join meeting. He is going to coordinate with Mr. Morse about number of people to bring. He will return with a number or Wednesday the 12th.	2-20-14 at 2:00 pm
Turkey Creek Community	Lettie Evans Caldwell	Called number on sign in sheet was not able to connect.	NO INTERVIEW MADE
Services International Gulfport	William Davis	Called on 10-22-13 no message machine.	NO INTERVIEW MADE
MS Center for Justice	Reilly Morse	Spoke with Mr. Morse, asked him to join meeting. He is going to coordinate with Mr. Paige about number of people to bring. He will	~~2-20-14 at 1:00 pm~~

Attachment A: Summary of Community Impact Assessment Interview Contact

Interview Entity	Contact Person	Result of Contact Efforts	Interview Held Date/Time/Location
		return with a number or Wednesday the 12th. Emailed on 2-12 to say that they would not be able to make it that day.	
North Gulfport Community Land Trust	Rose Johnson	Called 10-22-2013 mailbox full, unable to leave message. Called 2-7-14, mailbox is still full.	NO INTERVIEW MADE
Port Campaign Coalition	Glenn Cobb	Mr. Paige offered to contact the Port Campaign Coalition and bring them to the meeting.	~~2-20-14 at 2:00 pm~~ Cancelled.
Gulfport Towing	Michael Vitt	Called 10-22-13 and 10-23-13. Left messages.	NO INTERVIEW MADE

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Attachment B

Interview Questions

Date: Location:

Interviewee: Adele Lyons, Habitat for Humanity

Interviewer: Alex Amponsah and Munther Sahawneh

Open questions about their entity:

(These questions are intended as an icebreaker to get the interviewee talking and comfortable)

Baseline Information

1. How long have you been in the Gulfport area? _____
2. How would you best describe Gulfport?
3. What changes have you noticed during your time in Gulfport?
4. How have these changes affected Gulfport?
5. How have the changes affected your organization?
6. Where/Who are the major employers for Gulfport citizens?

Attachment B: Interview Questions

Questions about the proposed expansion:

1. How do you see the proposed Port Expansions project affecting Gulfport overall?

2. What specific changes do you anticipate?

3. How do you think it will affect employment opportunities?

4. How do you think it would affect access to and within town?

5. How do you think the project would affect interaction by the citizens?

6. What changes in land use and development would you anticipate overall for these options?

7. Could the project be improved to better represent the needs of Gulfport? If so, how would that be accomplished?

General comments:

Appendix L

Air Quality Summary Tables

Annual Construction Emissions Summary
Port of Gulfport Expansion Project
Gulfport, Harrison County, Mississippi

PROPOSED PROJECT ALTERNATIVE

TONS PER YEAR

Year 2016	**VOC**	**PM10**	**PM2.5**	**CO**	**NOx**	**CO2**	**SO2**	**CH4**	**N20**	**CO2e**	**Total HAPs**
Dredge & Support Equipment	11.77	11.25	10.91	218.01	296.50	30,086	0.283	3.924	0.872	30,444	3.21
Non-Road Construction Equipment	0.42	0.26	0.25	2.77	3.70	784	0.006	0.049	0.055	802	0.01
On-Road and Employee Vehicles	0.31	0.03	0.03	4.80	0.89	344	0.015	0.013	0.007	347	0.02
Maintenance Dredging	0.00	0.00	0.00	0.00	0.00	0	0.000	0.000	0.000	0	0.00
Subtotal	**12.51**	**11.54**	**11.19**	**225.58**	**301.09**	**31,215**	**0.305**	**3.987**	**0.934**	**31,593**	**3.24**
Year 2017	**VOC**	**PM10**	**PM2.5**	**CO**	**NOx**	**CO2**	**SO2**	**CH4**	**N20**	**CO2e**	**Total HAPs**
Dredge & Support Equipment	12.36	11.81	11.46	228.96	311.39	31,597	0.298	4.121	0.916	31,973	3.34
Non-Road Construction Equipment	1.81	1.12	1.09	11.52	16.03	3,453	0.028	0.215	0.241	3,530	0.04
On-Road and Employee Vehicles	0.53	0.07	0.06	7.61	1.85	618	0.026	0.029	0.011	622	0.05
Maintenance Dredging	1.20	1.15	1.12	22.29	30.31	3,076	0.029	0.401	0.089	3,112	0.21
Subtotal	**15.91**	**14.15**	**13.73**	**270.37**	**359.58**	**38,743**	**0.380**	**4.766**	**1.257**	**39,237**	**3.65**
Year 2018	**VOC**	**PM10**	**PM2.5**	**CO**	**NOx**	**CO2**	**SO2**	**CH4**	**N20**	**CO2e**	**Total HAPs**
Dredge & Support Equipment	6.82	6.52	6.33	126.38	171.88	17,441	0.164	2.275	0.506	17,648	1.83
Non-Road Construction Equipment	1.27	0.70	0.68	7.92	9.97	2,747	0.021	0.171	0.191	2,808	0.04
On-Road and Employee Vehicles	0.25	0.04	0.04	3.14	1.06	299	0.012	0.016	0.005	301	0.03
Maintenance Dredging	1.18	1.13	1.09	21.83	29.69	3,013	0.028	0.393	0.087	3,049	0.21
Subtotal	**9.52**	**8.39**	**8.14**	**159.28**	**212.60**	**23,500**	**0.226**	**2.855**	**0.789**	**23806**	**2.11**
Year 2019	**VOC**	**PM10**	**PM2.5**	**CO**	**NOx**	**CO2**	**SO2**	**CH4**	**N20**	**CO2e**	**Total HAPs**
Dredge & Support Equipment	0.22	0.21	0.21	4.13	5.61	569	0.005	0.074	0.017	576	0.06
Non-Road Construction Equipment	0.24	0.12	0.12	2.67	1.67	531	0.004	0.033	0.037	543	0.01
On-Road and Employee Vehicles	0.12	0.005	0.004	1.81	0.26	122	0.006	0.004	0.003	123	0.01
Maintenance Dredging	2.24	2.14	2.07	41.39	56.29	5,712	0.054	0.745	0.166	5,780	0.40
Subtotal	**2.82**	**2.48**	**2.40**	**50.00**	**63.84**	**6,935**	**0.069**	**0.856**	**0.222**	**7022**	**0.47**
Year 2020	**VOC**	**PM10**	**PM2.5**	**CO**	**NOx**	**CO2**	**SO2**	**CH4**	**N20**	**CO2e**	**Total HAPs**
Dredge & Support Equipment	0.00	0.00	0.00	0.00	0.00	0	0.000	0.000	0.000	0	0.00
Non-Road Construction Equipment	0.44	0.33	0.32	1.68	4.00	1,188	0.009	0.074	0.083	1,215	0.02
On-Road and Employee Vehicles	0.22	0.01	0.01	2.91	0.46	208	0.010	0.007	0.005	210	0.01
Maintenance Dredging	1.20	1.15	1.12	22.29	30.31	3,076	0.029	0.401	0.089	3,112	0.21
Subtotal	**1.86**	**1.48**	**1.44**	**26.87**	**34.78**	**4,472**	**0.048**	**0.482**	**0.177**	**4536**	**0.24**
Year 2021	**VOC**	**PM10**	**PM2.5**	**CO**	**NOx**	**CO2**	**SO2**	**CH4**	**N20**	**CO2e**	**Total HAPs**
Dredge & Support Equipment	0.00	0.00	0.00	0.00	0.00	0	0.000	0.000	0.000	0	0.00
Non-Road Construction Equipment	0.06	0.03	0.03	0.18	0.53	136	0.001	0.008	0.009	139	0.002
On-Road and Employee Vehicles	0.54	0.28	0.27	4.23	5.28	1,018	0.034	0.059	0.006	1,021	0.01
Maintenance Dredging	1.15	1.10	1.07	21.38	29.07	2,950	0.028	0.385	0.086	2,985	0.20
Subtotal	**1.75**	**1.41**	**1.37**	**25.79**	**34.88**	**4,104**	**0.063**	**0.453**	**0.101**	**4146**	**0.21**

TOTAL (ALL YEARS)	**VOC**	**PM10**	**PM2.5**	**CO**	**NOx**	**CO2**	**SO2**	**CH4**	**N20**	CO2e	**Total HAPs**
Dredge & Support Equipment	31.18	29.80	28.90	577.48	785.38	79,693	0.751	10.395	2.310	80,641	8.44
Non-Road Construction Equipment	4.25	2.57	2.49	26.75	35.90	8,839	0.069	0.551	0.616	9,037	0.11
On-Road and Employee Vehicles	1.97	0.42	0.41	24.50	9.81	2,610	0.103	0.128	0.036	2,624	0.13
Maintenance Dredging	6.98	6.67	6.47	129.17	175.68	17,826	0.168	2.325	0.517	18,038	1.23
	44.38	**39.46**	**38.27**	**757.90**	**1,006.76**	**108,968**	**1.090**	**13.398**	**3.479**	**110,340**	**9.92**
Peak Annual Emissions	**15.91**	**14.15**	**13.73**	**270.37**	**359.58**	**38,743**	**0.38**	**4.77**	**1.26**	**39,237**	**3.65**

CONSTRUCTION EQUIPMENT / HOURS OF OPERATION
PORT OF GULFPORT EXPANSIONPROJECT
GULFPORT, HARRISON COUNTY MISSISSIPPI

Hrs/Day: 24
Day/Week: 7
Week/Month:

West & East Pier Dredging
Turning Basin Dredging
East Pier
North Harbor
West Pier
West Pier Sheet Pile
Wick Drains
Rail
Utilities

Hrs/Day: 24
Day/Week: 7
Week/Mont
Hours of Operation

EQUIPMENT TYPE	Quantity	2016												2017												2018											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
DAYS PER MONTH		31	29	31	30	31	30	31	31	30	31	30	31	31	28	31	30	31	30	31	31	30	31	30	31	31	28	31	30	31	30	31	31	30	31	30	31
MECHANICAL DREDGING EQUIPMENT																																					
BUCKET DREDGE	2							1488	1344	1488	1440	1488	1440	1488	1488																						
DREDGE AUXILLARY ENGINES	2							1572	1344	1572	1524	1488	1440	1488	1572																						
MULTIPURPOSE VESSEL	1							456	336	456	84	372	360	372	456																						
MEDIUM DUTY TRUCK	1							124	112	124	120	124	120	124	124																						
BUS	1							62	56	62	60	62	60	62	62																						
TWIN SCREW TUGBOAT (PRIMARY HAULER)	3							1944	1680	1944	1884	1860	1800	1860	1944																						
AUXILLARY ENGINES	3							2316	2232	2244	2400	2160	2232	2232	2100																						
SINGLE SCREW TUGBOAT (TENDER)	1							372	336	372	444	372	360	372	456																						
AUXILLARY ENGINES	1							828	744	804	828	720	744	744	756																						
SINGLE SCREW TUGBOAT	1							456	336	456	444	372	360	372	456																						
AUXILLARY ENGINES	1							828	744	804	828	720	744	744	756																						
MAINTENANCE DREDGING EQUIPMENT (MECH)																																					
BUCKET DREDGE																					744	273												744	249			
DREDGE AUXILLARY ENGINES	1																				828	357												828	333			
MULTIPURPOSE VESSEL																					456	220												456	208			
MEDIUM DUTY TRUCK																					124	45												124	41			
BUS																					62	23												62	21			
TWIN SCREW TUGBOAT (PRIMARY HAULER)																					704	311												704	291			
AUXILLARY ENGINES	1																				828	357												828	333			
SINGLE SCREW TUGBOAT (TENDER)																					456	220												456	208			
AUXILLARY ENGINES	1																				828	357												828	333			
SINGLE SCREW TUGBOAT																					456	220												456	208			
AUXILLARY ENGINES	1																				828	357												828	333			
FILL EQUIPMENT																																					
TWIN SCREW TUGBOAT											1440	1488	1440	1488	1488	1440	1488	1440	1488	1488	1392	1488	1440	1488	1440	1488	1488	1440	1488	1440	1488	1488	1344	1488			
AUXILLARY ENGINES	4										2976	2880	2976	2976	2688	2976	2880	2976	2880	2976	2976	2880	2976	2880	2976	2976	2688	2976	2880	2976	2880	2976	2880	2976	2976	2880		
SINGLE SCREW TUGBOAT											360	372	360	372	372	360	372	360	372	372	348	372	360	372	360	372	372	360	372	360	372	360	372	336	372			
AUXILLARY ENGINES	1										744	720	744	744	672	744	720	744	720	744	744	720	744	720	744	744	672	744	720	744	720	744	744	720			
CAT 973 3.8CY, 210 HP (placing)											360	372	360	372	372	360	372	360	372	372	348	372	360	372	360	372	372	360	372	360	372	360	372	336	372			
CAT 973 3.8CY, 210 HP (wick)											360	372	360	372	372	360	372	360	372	372	348	372	360	372	360	372	372	360	372	360	372	360	372	336	372			
CAT 980GN, 7.0, 300HP(rip rap)											360	372	360	372	372	360	372	360	372	372	348	372	360	372	360	372	372	360	372	360	372	360	372	336	372			
CAT D4C 80HP, 8MT											360	372	360	372	372	360	372	360	372	372	348	372	360	372	360	372	372	360	372	360	372	360	372	336	372			
CAT D7R 230 HP, 25MT											360	372	360	372	372	360	372	360	372	372	348	372	360	372	360	372	372	360	372	360	372	360	372	336	372			
Gen Set 100 KW, DSL											360	372	360	372	372	360	372	360	372	372	348	372	360	372	360	372	372	360	372	360	372	360	372	336	372			
4 TON EXT.BOOM FORKLIFT											240	248	240	248	248	240	248	240	248	248	232	248	240	248	240	248	248	240	248	240	248	248	224	248			
MULE KAWASAKI 550 W/TOPS											240	248	240	248	248	240	248	240	248	248	232	248	240	248	240	248	248	240	248	240	248	248	224	248			
CAT 563CP, 145 HP											300	310	300	310	310	300	310	300	310	310	290	310	300	310	300	310	310	300	310	300	310	310	280	310			
CAT 563CS, 145 HP											300	310	300	310	310	300	310	300	310	310	290	310	300	310	300	310	310	300	310	300	310	310	280	310			
18 WHEEL WITH FLATBED											120	124	120	124	124	120	124	120	124	124	116	124	120	124	120	124	124	120	124	120	124	124	112	124			
DUMP TRUCKS											960	992	960	992	992	960	992	960	992	992	928	992	960	992	960	992	992	960	992	960	992	992	896	992			
BOOSTER PUMP											360	372	360	372	372	360	372	360	372	372	348	372	360	372	360	372	372	360	372	360	372	372	336	372			
CRANE BARGES WITH FILL											720	744	720	744	744	720	744	720	744	744	696	744	720	744	720	744	744	720	744	720	744	744	672	744			
CRANE BARGES WITH ROCK											720	744	720	744	744	720	744	720	744	744	696	744	720	744	720	744	744	720	744	720	744	744	672	744			
1500 GLN WATER TRUCK, 4×2											300	310	300	310	310	300	310	300	310	310	290	310	300	310	300	310	310	300	310	300	310	310	280	310			
WHARF CONSTRUCTION EQUIPMENT																																					
WORK BARGES																																					
SINGLE SCREW TUGBOAT																																		310	310	300	
AUXILLARY ENGINES																																		744	744	744	
PILING																																					
150 TN CRWLER CRANE																																		310	310	300	
EXCAVATOR-JD 330LC 2.3 CY																																		310	310	300	
PICKUP TRUCKS																																		124	124	120	
ATE D46-32 DIESEL HAMMER																																		310	310	300	
AIR COMPRESSORS																																					
375 CFM, PORT.DSL																																		248	248	240	
WELDING EQUIPMENT																																					
300 AMP DC DIESEL																																		248	248	240	
MISC JOB EQUIPMENT																																					
REG SRVC TRUCK, W/EQUIPMENT																																		124	124	120	
GEN SET 6-10 KW, DSL																																		248	248	240	
TRAILERS																																					
PICKUP TRUCKS																																		124	124	120	
CENT TRASH PUMP 4" W/TRL																																		248	248	240	
CUTTING EQUIPMENT																																					
Torch Cutting Machine																																		124	124	120	
CONCRETE EQUIPMENT																																					
TAMPER (JAMPING JACK) WAC																																		124	124	120	
TROWEL MARCH 48"																																		248	248	240	
VIBRATOR CONCRETE ELEC.2																																					
WICK DRAIN INSTALLATION																																					
EXCAVATOR-JD 330LC 2.3 CY																	310	310	280	310	300	310	300			310	310	300	310	300	310	310	280	310			
PICKUP TRUCKS																	124	124	112	124	120	124	120			124	124	120	124	120	124	124	112	124			
ATE D46-32 DIESEL HAMMER																	310	310	280	310	300	310	300			310	310	300	310	300	310	310	280	310			

CONSTRUCTION EQUIPMENT / HOURS OF OPERATION
PORT OF GULFPORT EXPANSIONPROJECT
GULFPORT, HARRISON COUNTY MISSISSIPPI

Hrs/Day: 24
Day/Week: 7
Week/Month:

West & East Pier Dredging
Turning Basin Dredging
East Pier
North Harbor
West Pier
West Pier Sheet Pile
Wick Drains
Rail
Utilities

Hrs/Day: 24
Day/Week: 7
Week/Mont
Hours of Operation

EQUIPMENT TYPE	Quantity	2016	2017	2018	2019	2020	2021
ROAD CONSTRUCTION EQUIPMENT							
PAVER					300 310 300	310 310 300 310 300 310 280 310 300	
SOIL COMPACTOR					300 310 300	310 310 300 310 300 310 280 310 300	
HYDRAULIC SWEEPER					300 310 300	310 310 300 310 300 310 280 310 300	
DUMP TRUCK					600 620 600	620 620 600 620 600 620 560 620 600	
ROLLER					300 310 300	310 310 300 310 300 310 280 310 300	
BULLDOZER					300 310 300	310 310 300 310 300 310 280 310 300	
GRADER					300 310 300	310 310 300 310 300 310 280 310 300	
MIXER					300 310 300	310 310 300 310 300 310 280 310 300	
BATCHING PLANT					300 310 300	310 310 300 310 300 310 280 310 300	
RAIL CONSTRUCTION EQUIPMENT							
GRADERS						310	
BULLDOZERS						310	
ROLLER						310	
GANTRY CRANES						310	
SWING LOADER						310	
RAIL THREADER						310	
18 WHEELER						310	
UNDER CUTTER						310	
UTILITY INFRASTRUCTURE EQUIPMENT							
EXCAVATOR						300 150	
DUMP TRUCK						300 150	
BACKHOE						300 150	
PIPE LAYER						300 150	
TERMINAL/FACILITIES EQUIPMENT							
CRANE 80 TON CRLR,LS138							240 248 240 248 248 224 248
18 WHEEL WITH FLATBED							
30' SCISSOR LIFT							
4 TON EXT. BOOM FORKLIFT							
BULLDOZER CAT D4C							
DELIVERY VEHICLES							
DUMP TRUCK							0 0 0 0 0 0 0
18 WHEEL WITH FLATBED							225 233 225 233 233 210 233
TRACTOR							120 124 120 124 124 112 124
WATER TRUCK							0 0 0 0 0 0 0
BUS							0 0 0 0 0 0 0
EMPLOYEE VEHICLES							153 158 153 158 158 143 158

Proposed Project Alternative - Dredging Emissions Summary 2016

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Equipment Type	Operating Load (%)	Emission Factors (grams per horsepower hour)										Air Contaminant Emissions (tons per year)									
		Primary Engine				VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs	VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs
MECHANICAL DREDGING EQUIPMENT																									
BUCKET DREDGE	1742	diesel	48	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	2.6872	2.5677	2.4907	49.7621	67.6764	6867	0.0647	0.8957	0.1990	0.9097
AUXILLARY ENGINES	600	diesel	48		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.9524	0.9101	0.8828	17.6368	23.9860	2434	0.0229	0.3175	0.0705	0.0337
MULTIPURPOSE VESSEL (Crew & Survey)	300	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.1099	0.1051	0.1019	2.0359	2.7689	281	0.0026	0.0366	0.0081	0.0039
TWIN SCREW TUGBOAT (PRIMARY HAULER)	2000	diesel	20	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	3.9459	3.7705	3.6574	73.0723	99.3783	10084	0.0950	1.3153	0.2923	1.3358
AUXILLARY ENGINES	300	diesel	20		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.7236	0.6914	0.6707	13.3992	18.2229	1849	0.0174	0.2412	0.0536	0.0256
SINGLE SCREW TUGBOAT (TENDER)	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.4006	0.3828	0.3713	7.4177	10.0881	1024	0.0096	0.1335	0.0297	0.1356
AUXILLARY ENGINES	150	diesel	12		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.1243	0.1188	0.1152	2.3023	3.1311	318	0.0030	0.0414	0.0092	0.0044
SINGLE SCREW TUGBOAT	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.4304	0.4113	0.3989	7.9701	10.8393	1100	0.0104	0.1435	0.0319	0.1457
AUXILLARY ENGINES	150	diesel	12		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.1243	0.1188	0.1152	2.3023	3.1311	318	0.0030	0.0414	0.0092	0.0044
MAINTENANCE DREDGING EQUIPMENT (MECH)																									
BUCKET DREDGE	1,742	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
DREDGE AUXILLARY ENGINES	600	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
MULTIPURPOSE VESSEL	300	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
TWIN SCREW TUGBOAT (PRIMARY HAULER)	2,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	300	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
SINGLE SCREW TUGBOAT (TENDER)	1,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
SINGLE SCREW TUGBOAT	1,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
FILL EQUIPMENT																									
TWIN SCREW TUGBOAT	2000	diesel (4)	48	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	1.5511	1.4822	1.4377	28.7239	39.0645	3963.8967	0.0373	0.5170	0.1149	0.5251
AUXILLARY ENGINES	300	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.4704	0.4495	0.4360	8.7119	11.8481	1202.2368	0.0113	0.1568	0.0348	0.0166
SINGLE SCREW TUGBOAT	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1939	0.1853	0.1797	3.5905	4.8831	495.4871	0.0047	0.0646	0.0144	0.0656
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0588	0.0562	0.0545	1.0890	1.4810	150.2796	0.0014	0.0196	0.0044	0.0021
WHARF CONSTRUCTION EQUIPMENT																									
WORK BARGES	NA	NA	0																						
SINGLE SCREW TUGBOAT	1000	diesel	10		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
															Totals	**11.77**	**11.25**	**10.91**	**218.01**	**296.50**	**30085.91**	**0.28**	**3.92**	**0.87**	**3.21**

Proposed Project Alternative - Dredging Emissions Summary 2017

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Equipment Type	Operating Load (%)	Emission Factors (grams per horsepower hour)										Air Contaminant Emissions (tons per year)										
		Primary Engine				VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs	VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs
MECHANICAL DREDGING EQUIPMENT																										
BUCKET DREDGE	1742	diesel	48	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.9205	0.8796	0.8532	17.0456	23.1820	2352	0.0222	0.3068	0.0682	0.3116
AUXILLARY ENGINES	600	diesel	48		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.3260	0.3115	0.3022	6.0368	8.2100	833	0.0078	0.1087	0.0241	0.0115
MULTIPURPOSE VESSEL (Crew & Survey)	300	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0441	0.0421	0.0409	0.8167	1.1108	113	0.0011	0.0147	0.0033	0.0016
TWIN SCREW TUGBOAT (PRIMARY HAULER)	2000	diesel	20	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	1.3508	1.2908	1.2521	25.0150	34.0204	3452	0.0325	0.4503	0.1001	0.4573
AUXILLARY ENGINES	300	diesel	20		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.2307	0.2205	0.2139	4.2731	5.8114	590	0.0056	0.0769	0.0171	0.0082
SINGLE SCREW TUGBOAT (TENDER)	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1470	0.1405	0.1363	2.7225	3.7025	376	0.0035	0.0490	0.0109	0.0498
AUXILLARY ENGINES	150	diesel	12		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0399	0.0382	0.0370	0.7398	1.0061	102	0.0010	0.0133	0.0030	0.0014
SINGLE SCREW TUGBOAT	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1470	0.1405	0.1363	2.7225	3.7025	376	0.0035	0.0490	0.0109	0.0498
AUXILLARY ENGINES	150	diesel	12		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0399	0.0382	0.0370	0.7398	1.0061	102	0.0010	0.0133	0.0030	0.0014
MAINTENANCE DREDGING EQUIPMENT (MECH)																										
BUCKET DREDGE	1,742	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.3144	0.3005	0.2914	5.8227	7.9189	804	0.0076	0.1048	0.0233	0.1064
DREDGE AUXILLARY ENGINES	600	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.1262	0.1206	0.1170	2.3370	3.1783	323	0.0030	0.0421	0.0093	0.0045
MULTIPURPOSE VESSEL	300	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0360	0.0344	0.0334	0.6671	0.9073	92	0.0009	0.0120	0.0027	0.0013
TWIN SCREW TUGBOAT (PRIMARY HAULER)	2,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.3605	0.3445	0.3341	6.6757	9.0789	921	0.0087	0.1202	0.0267	0.0127
AUXILLARY ENGINES	300	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0631	0.0603	0.0585	1.1685	1.5891	161	0.0015	0.0210	0.0047	0.0022
SINGLE SCREW TUGBOAT (TENDER)	1,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1201	0.1147	0.1113	2.2237	3.0242	307	0.0029	0.0400	0.0089	0.0406
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0315	0.0301	0.0292	0.5842	0.7946	81	0.0008	0.0105	0.0023	0.0011
SINGLE SCREW TUGBOAT	1,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1201	0.1147	0.1113	2.2237	3.0242	307	0.0029	0.0400	0.0089	0.0406
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0315	0.0301	0.0292	0.5842	0.7946	81	0.0008	0.0105	0.0023	0.0011
FILL EQUIPMENT																										
TWIN SCREW TUGBOAT	2000	diesel (4)	48	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	6.2385	5.9612	5.7824	115.5269	157.1165	15942.7056	0.1502	2.0795	0.4621	2.1119
AUXILLARY ENGINES	300	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	1.8664	1.7835	1.7300	34.5634	47.0062	4769.7439	0.0449	0.6221	0.1383	0.0659
SINGLE SCREW TUGBOAT	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.7798	0.7451	0.7228	14.4409	19.6396	1992.8382	0.0188	0.2599	0.0578	0.2640
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.2333	0.2229	0.2162	4.3204	5.8758	596.2180	0.0056	0.0778	0.0173	0.0082
WHARF CONSTRUCTION EQUIPMENT																										
WORK BARGES	NA	NA	0																							
SINGLE SCREW TUGBOAT	1000	diesel	10		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
															Totals	**13.57**	**12.96**	**12.58**	**251.25**	**341.70**	**34672.49**	**0.33**	**4.52**	**1.00**	**3.55**

Proposed Project Alternative - Dredging Emissions Summary 2018

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Equipment Type	Operating Load (%)	Emission Factors (grams per horsepower hour)										Air Contaminant Emissions (tons per year)									
		Primary Engine				VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs	VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs
MECHANICAL DREDGING EQUIPMENT																									
BUCKET DREDGE	1742	diesel	48	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	600	diesel	48		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
MULTIPURPOSE VESSEL (Crew & Survey)	300	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
TWIN SCREW TUGBOAT (PRIMARY HAULER)	2000	diesel	20	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	300	diesel	20		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
SINGLE SCREW TUGBOAT (TENDER)	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel	12		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
SINGLE SCREW TUGBOAT	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel	12		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
MAINTENANCE DREDGING EQUIPMENT (MECH)																									
BUCKET DREDGE	1,742	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.3070	0.2934	0.2846	5.6853	7.7319	785	0.0074	0.1023	0.0227	0.1039
DREDGE AUXILLARY ENGINES	600	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.1236	0.1181	0.1146	2.2896	3.1139	316	0.0030	0.0412	0.0092	0.0044
MULTIPURPOSE VESSEL	300	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0354	0.0338	0.0328	0.6553	0.8912	90	0.0009	0.0118	0.0026	0.0013
TWIN SCREW TUGBOAT (PRIMARY HAULER)	2,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.3534	0.3377	0.3275	6.5442	8.9001	903	0.0085	0.1178	0.0262	0.0125
AUXILLARY ENGINES	300	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0618	0.0591	0.0573	1.1448	1.5569	158	0.0015	0.0206	0.0046	0.0022
SINGLE SCREW TUGBOAT (TENDER)	1,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1179	0.1127	0.1093	2.1842	2.9705	301	0.0028	0.0393	0.0087	0.0399
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0309	0.0295	0.0286	0.5724	0.7785	79	0.0007	0.0103	0.0023	0.0011
SINGLE SCREW TUGBOAT	1,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1179	0.1127	0.1093	2.1842	2.9705	301	0.0028	0.0393	0.0087	0.0399
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0309	0.0295	0.0286	0.5724	0.7785	79	0.0007	0.0103	0.0023	0.0011
FILL EQUIPMENT																									
TWIN SCREW TUGBOAT	2000	diesel (4)	48	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	4.6703	4.4627	4.3289	86.4873	117.6227	11935.2495	0.1124	1.5568	0.3459	1.5810
AUXILLARY ENGINES	300	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	1.3960	1.3339	1.2939	25.8515	35.1580	3567.5071	0.0336	0.4653	0.1034	0.0493
SINGLE SCREW TUGBOAT	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.5838	0.5578	0.5411	10.8109	14.7028	1491.9062	0.0141	0.1946	0.0432	0.1976
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.1745	0.1667	0.1617	3.2314	4.3948	445.9384	0.0042	0.0582	0.0129	0.0062
WHARF CONSTRUCTION EQUIPMENT																									
WORK BARGES	NA	NA	0																						
SINGLE SCREW TUGBOAT	1000	diesel	10		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
															Totals	**8.00**	**7.65**	**7.42**	**148.21**	**201.57**	**20453.46**	**0.19**	**2.67**	**0.59**	**2.04**

Proposed Project Alternative - Dredging Emissions Summary 2019

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Equipment Type	Operating Load (%)	Emission Factors (grams per horsepower hour)										Air Contaminant Emissions (tons per year)									
		Primary Engine				VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs	VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs
MECHANICAL DREDGING EQUIPMENT																									
BUCKET DREDGE	1742	diesel	48	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	600	diesel	48		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
MULTIPURPOSE VESSEL (Crew & Survey)	300	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
TWIN SCREW TUGBOAT (PRIMARY HAULER)	2000	diesel	20	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	300	diesel	20		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
SINGLE SCREW TUGBOAT (TENDER)	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel	12		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
SINGLE SCREW TUGBOAT	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel	12		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
MAINTENANCE DREDGING EQUIPMENT (MECH)																									
BUCKET DREDGE	1,742	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.6707	0.6409	0.6217	12.4210	16.8926	1714	0.0161	0.2236	0.0497	0.2271
DREDGE AUXILLARY ENGINES	600	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.3026	0.2892	0.2805	5.6039	7.6213	773	0.0073	0.1009	0.0224	0.0107
MULTIPURPOSE VESSEL	300	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0597	0.0570	0.0553	1.1051	1.5029	152	0.0014	0.0199	0.0044	0.0021
TWIN SCREW TUGBOAT (PRIMARY HAULER)	2,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.5835	0.5576	0.5408	10.8054	14.6953	1491	0.0140	0.1945	0.0432	0.0206
AUXILLARY ENGINES	300	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.1104	0.1055	0.1023	2.0444	2.7804	282	0.0027	0.0368	0.0082	0.0039
SINGLE SCREW TUGBOAT (TENDER)	1,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1989	0.1901	0.1844	3.6835	5.0096	508	0.0048	0.0663	0.0147	0.0673
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0552	0.0527	0.0512	1.0222	1.3902	141	0.0013	0.0184	0.0041	0.0020
SINGLE SCREW TUGBOAT	1,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1989	0.1901	0.1844	3.6835	5.0096	508	0.0048	0.0663	0.0147	0.0673
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0552	0.0527	0.0512	1.0222	1.3902	141	0.0013	0.0184	0.0041	0.0020
FILL EQUIPMENT																									
TWIN SCREW TUGBOAT	2000	diesel (4)	48	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	300	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SINGLE SCREW TUGBOAT	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WHARF CONSTRUCTION EQUIPMENT																									
WORK BARGES	NA	NA	0																						
SINGLE SCREW TUGBOAT	1000	diesel	10		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1633	0.1561	0.1514	3.0250	4.1139	417.4433	0.0039	0.0544	0.0121	0.0553
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0594	0.0568	0.0551	1.1008	1.4971	151.9131	0.0014	0.0198	0.0044	0.0021
															Totals	**2.46**	**2.35**	**2.28**	**45.52**	**61.90**	**6281.34**	**0.06**	**0.82**	**0.18**	**0.46**

Proposed Project Alternative - Dredging Emissions Summary 2020

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Equipment Type	Operating Load (%)	Emission Factors (grams per horsepower hour)										Air Contaminant Emissions (tons per year)									
		Primary Engine				VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs	VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs
MECHANICAL DREDGING EQUIPMENT																									
BUCKET DREDGE	1742	diesel	48	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	600	diesel	48		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
MULTIPURPOSE VESSEL (Crew & Survey)	300	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
TWIN SCREW TUGBOAT (PRIMARY HAULER)	2000	diesel	20	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	300	diesel	20		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
SINGLE SCREW TUGBOAT (TENDER)	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel	12		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
SINGLE SCREW TUGBOAT	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel	12		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
MAINTENANCE DREDGING EQUIPMENT (MECH)																									
BUCKET DREDGE	1,742	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.3144	0.3005	0.2914	5.8227	7.9189	804	0.0076	0.1048	0.0233	0.1064
DREDGE AUXILLARY ENGINES	600	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.1262	0.1206	0.1170	2.3370	3.1783	323	0.0030	0.0421	0.0093	0.0045
MULTIPURPOSE VESSEL	300	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0360	0.0344	0.0334	0.6671	0.9073	92	0.0009	0.0120	0.0027	0.0013
TWIN SCREW TUGBOAT (PRIMARY HAULER)	2,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.3605	0.3445	0.3341	6.6757	9.0789	921	0.0087	0.1202	0.0267	0.0127
AUXILLARY ENGINES	300	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0631	0.0603	0.0585	1.1685	1.5891	161	0.0015	0.0210	0.0047	0.0022
SINGLE SCREW TUGBOAT (TENDER)	1,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1201	0.1147	0.1113	2.2237	3.0242	307	0.0029	0.0400	0.0089	0.0406
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0315	0.0301	0.0292	0.5842	0.7946	81	0.0008	0.0105	0.0023	0.0011
SINGLE SCREW TUGBOAT	1,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1201	0.1147	0.1113	2.2237	3.0242	307	0.0029	0.0400	0.0089	0.0406
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0315	0.0301	0.0292	0.5842	0.7946	81	0.0008	0.0105	0.0023	0.0011
FILL EQUIPMENT																									
TWIN SCREW TUGBOAT	2000	diesel (4)	48	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	300	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SINGLE SCREW TUGBOAT	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WHARF CONSTRUCTION EQUIPMENT																									
WORK BARGES	NA	NA	0																						
SINGLE SCREW TUGBOAT	1000	diesel	10		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
															Totals	**1.20**	**1.15**	**1.12**	**22.29**	**30.31**	**3075.57**	**0.03**	**0.40**	**0.09**	**0.21**

Proposed Project Alternative - Dredging Emissions Summary 2021

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Equipment Type	Operating Load (%)	Emission Factors (grams per horsepower hour)										Air Contaminant Emissions (tons per year)									
		Primary Engine				VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs	VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs
MECHANICAL DREDGING EQUIPMENT																									
BUCKET DREDGE	1742	diesel	48	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	600	diesel	48		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
MULTIPURPOSE VESSEL (Crew & Survey)	300	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
TWIN SCREW TUGBOAT (PRIMARY HAULER)	2000	diesel	20	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	300	diesel	20		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
SINGLE SCREW TUGBOAT (TENDER)	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel	12		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
SINGLE SCREW TUGBOAT	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel	12		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
MAINTENANCE DREDGING EQUIPMENT (MECH)																									
BUCKET DREDGE	1,742	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.2996	0.2863	0.2777	5.5478	7.5450	766	0.0072	0.0999	0.0222	0.1014
DREDGE AUXILLARY ENGINES	600	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.1211	0.1157	0.1122	2.2423	3.0495	309	0.0029	0.0404	0.0090	0.0043
MULTIPURPOSE VESSEL	300	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0347	0.0332	0.0322	0.6434	0.8751	89	0.0008	0.0116	0.0026	0.0012
TWIN SCREW TUGBOAT (PRIMARY HAULER)	2,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.3463	0.3309	0.3210	6.4126	8.7212	885	0.0083	0.1154	0.0257	0.0122
AUXILLARY ENGINES	300	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0605	0.0579	0.0561	1.1211	1.5247	155	0.0015	0.0202	0.0045	0.0021
SINGLE SCREW TUGBOAT (TENDER)	1,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1158	0.1107	0.1073	2.1447	2.9169	296	0.0028	0.0386	0.0086	0.0392
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0303	0.0289	0.0281	0.5606	0.7624	77	0.0007	0.0101	0.0022	0.0011
SINGLE SCREW TUGBOAT	1,000	diesel		Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.1158	0.1107	0.1073	2.1447	2.9169	296	0.0028	0.0386	0.0086	0.0392
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0303	0.0289	0.0281	0.5606	0.7624	77	0.0007	0.0101	0.0022	0.0011
FILL EQUIPMENT																									
TWIN SCREW TUGBOAT	2000	diesel (4)	48	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	300	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SINGLE SCREW TUGBOAT	1000	diesel	12	Type 2	0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WHARF CONSTRUCTION EQUIPMENT																									
WORK BARGES	NA	NA	0																						
SINGLE SCREW TUGBOAT	1000	diesel	10		0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0681589	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AUXILLARY ENGINES	150	diesel			0.8	0.20	0.19	0.19	3.73	5.07	515	0.005	0.067	0.015	0.0071139	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
															Totals	**1.15**	**1.10**	**1.07**	**21.38**	**29.07**	**2950.15**	**0.03**	**0.38**	**0.09**	**0.20**

Proposed Project Alternative - Nonroad Construction Equipment Emissions - 2016

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Equipment Type	Operating Load (%)	Emission Factors (grams per horsepower hour)										Air Contaminant Emissions (tons per year)									
		Primary Engine				VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs	VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs
FILL EQUIPMENT																									
CAT 973 3.8CY, 210 HP (placing)	210	diesel	12	Tractors/Loaders/Backhoes	0.21	0.624	0.4	0.388	2.116	4.099	624.7	0.005	0.039	0.044	0.0071076	0.0331	0.0212	0.0206	0.1123	0.2176	33	0.0003	0.0021	0.0023	0.0004
CAT 973 3.8CY, 210 HP (wick)	210	diesel	12	Tractors/Loaders/Backhoes	0.21	0.624	0.4	0.388	2.116	4.099	624.7	0.005	0.039	0.044	0.0071076	0.0331	0.0212	0.0206	0.1123	0.2176	33	0.0003	0.0021	0.0023	0.0004
CAT 980GN, 7.0, 300HP(rip rap)	300	diesel	12	Tractors/Loaders/Backhoes	0.21	0.624	0.4	0.388	2.116	4.099	624.7	0.005	0.039	0.044	0.0071076	0.0474	0.0303	0.0294	0.1605	0.3108	47	0.0004	0.0030	0.0033	0.0005
CAT D4C 80HP, 8MT	80	diesel	12	Crawler Tractor/Dozers	0.59	0.229	0.313	0.304	2.351	2.455	595.5	0.005	0.037	0.042	0.0071076	0.0130	0.0178	0.0173	0.1336	0.1395	34	0.0003	0.0021	0.0024	0.0004
CAT D7R 230 HP, 25MT	230	diesel	12	Crawler Tractor/Dozers	0.59	0.182	0.123	0.12	0.63	1.855	536.3	0.004	0.033	0.037	0.0071076	0.0298	0.0202	0.0196	0.1029	0.3030	88	0.0007	0.0055	0.0061	0.0012
Gen Set 100 KW, DSL	100	diesel	12	Gen Set	0.43	0.475	0.389	0.378	2.189	3.974	589	0.005	0.037	0.041	0.0071076	0.0246	0.0202	0.0196	0.1133	0.2057	30	0.0003	0.0019	0.0021	0.0004
4 TON EXT.BOOM FORKLIFT	99	diesel	8	Forklift	0.59	0.144	0.05	0.049	0.624	0.73	595.7	0.004	0.037	0.042	0.0071076	0.0067	0.0024	0.0023	0.0293	0.0342	28	0.0002	0.0017	0.0019	0.0003
MULE KAWASAKI 550 W/TOPS	10	gas	8	Other General Industrial Equipment	0.59	7.03	0.136	0.125	298.6	1.742	1044	0.006	0.065	0.073	0.0071076	0.0333	0.0006	0.0006	1.4138	0.0082	5	0.0000	0.0003	0.0003	0.0000
CAT 563CP, 145 HP	145	diesel	10	Rollers	0.59	0.224	0.226	0.219	0.961	2.376	536.2	0.004	0.033	0.037	0.0071076	0.0192	0.0194	0.0188	0.0825	0.2039	46	0.0004	0.0029	0.0032	0.0006
CAT 563CS, 145 HP	145	diesel	10	Rollers	0.59	0.224	0.226	0.219	0.961	2.376	536.2	0.004	0.033	0.037	0.0071076	0.0192	0.0194	0.0188	0.0825	0.2039	46	0.0004	0.0029	0.0032	0.0006
BOOSTER PUMP	235	diesel	12	Pumps	0.43	0.327	0.202	0.196	0.996	3.66	530.1	0.004	0.033	0.037	0.0071076	0.0397	0.0245	0.0238	0.1211	0.4451	64	0.0005	0.0040	0.0045	0.0009
CRANE BARGES WITH FILL	300	diesel	24	Cranes	0.43	0.201	0.103	0.1	0.491	2.271	530.4	0.004	0.033	0.037	0.0071076	0.0623	0.0319	0.0309	0.1524	0.7053	165	0.0013	0.0103	0.0115	0.0022
CRANE BARGES WITH ROCK	300	diesel	24	Cranes	0.43	0.201	0.103	0.1	0.491	2.271	530.4	0.004	0.033	0.037	0.0071076	0.0623	0.0319	0.0309	0.1524	0.7053	165	0.0013	0.0103	0.0115	0.0022
WHARF CONSTRUCTION EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PILING																0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
150 TN CRWLER CRANE	282	diesel	10	Crane	0.43	0.201	0.103	0.1	0.491	2.271	530.4	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
EXCAVATOR-JD 330LC 2.3 CY	235	diesel	10	Excavators	0.59	0.173	0.107	0.104	0.555	1.656	536.3	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
ATE D46-32 DIESEL HAMMER	230	diesel	10	Other Construction Equipment	0.43	0.232	0.169	0.164	0.862	2.626	536.1	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
AIR COMPRESSORS																0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
375 CFM, PORT.DSL	115	diesel	8	Air Compressors	0.43	0.25	0.178	0.173	0.724	2.884	530.3	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
WELDING EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
300 AMP DC DIESEL	32.7	diesel	8	Welders	0.21	1.156	0.732	0.71	4.619	5.123	692.6	0.006	0.043	0.048	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
MISC JOB EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
GEN SET 6-10 KW, DSL	11	diesel	8	Gen Set	0.43	0.824	0.574	0.556	4.593	5.527	587.9	0.005	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
CENT TRASH PUMP 4" W/TRL	16	gas	8	Pumps	0.43	0.618	0.403	0.391	2.65	4.896	588.5	0.005	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
CUTTING EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
Torch Cutting Machine	70	MAPP	4	AP-42 Emission Factors-LPG		0.0102	0.0091	0.0091	0.0951	0.1699	162	0.0010	0.01	0.011	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
CONCRETE EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
TAMPER (JAMPING JACK) WAC	6	diesel	4	Tampers/Rammers	0.43	0.703	0.486	0.472	4.483	4.882	588.3	0.005	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
TROWEL MARCH 48"	55	gas	8	Other General Industrial Equipment	0.48	1.305	0.072	0.066	28.83	1.881	708.4	0.013	0.044	0.049	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
VIBRATOR CONCRETE ELEC.2	3	none	8	Electric												0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
WICK DRAIN INSTALLATION																0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
EXCAVATOR-JD 330LC 2.3 CY	235	diesel	10	Excavators	0.59	0.173	0.107	0.104	0.555	1.656	536.3	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
ATE D46-32 DIESEL HAMMER	230	diesel	10	Other Construction Equipment	0.43	0.232	0.169	0.164	0.862	2.626	536.1	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
ROAD CONSTRUCTION EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
PAVER	142	diesel	10	Pavers	0.59	0.213	0.22	0.213	0.92	2.232	536.2	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
SOIL COMPACTOR	232	diesel	10	Plate Compactors	0.43	0.232	0.169	0.164	0.862	2.626	536.1	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
HYDRAULIC SWEEPER	100	diesel	10	Hydro Power Units	0.43	0.327	0.304	0.295	1.884	3.367	589.4	0.005	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
ROLLER	175	diesel	10	Rollers	0.59	0.201	0.144	0.139	0.723	2.173	536.2	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
BULLDOZER	105	diesel	10	Crawler Dozers/Tractor	0.59	0.197	0.211	0.205	0.867	2.022	536.2	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
GRADER	215	diesel	10	Graders	0.59	0.181	0.121	0.118	0.62	1.823	536.3	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
MIXER	25	diesel	10	Cement & Mortar Mixers	0.43	0.882	0.548	0.532	3.278	5.672	587.7	0.005	0.037	0.0410	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
RAIL CONSTRUCTION EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
GRADERS	215	diesel	10	Graders	0.59	0.181	0.121	0.118	0.62	1.823	536.3	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
BULLDOZERS	105	diesel	10	Crawler Dozers/Tractor	0.59	0.197	0.211	0.205	0.867	2.022	536.2	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
ROLLER	175	diesel	10	Rollers	0.59	0.201	0.144	0.139	0.723	2.173	536.2	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
GANTRY CRANES		na	10													0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
SWING LOADER	300	diesel	10	Rubber Tire Loader	0.59	0.201	0.143	0.139	0.723	2.172	536.2	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
RAIL THREADER	300	diesel	10	Other Construction Equipment	0.59	0.232	0.169	0.164	0.862	2.626	536.1	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
UNDER CUTTER	600	diesel	10	Excavators	0.59	0.169	0.137	0.133	0.886	2.219	536.3	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
UTILITY INFRASTRUCTURE EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
EXCAVATOR	17.4	diesel	10	Excavators	0.59	0.472	0.358	0.347	2.377	4.464	594.7	0.005	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
BACKHOES	75	diesel	10	Tractor/Loader/Backhoe	0.21	0.942	0.738	0.716	5.028	4.998	693.2	0.006	0.043	0.048	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
PIPE LAYER	366	diesel	10	Other Construction Equipment	0.59	0.244	0.218	0.212	1.56	3.581	536.1	0.005	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
TERMINAL/FACILITIES EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0	0.0000	0.0000	0.0000	0.0000
CRANE 80 TON CRLR,LS138	230	diesel	8	Crane	0.43								0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30' SCISSOR LIFT	NA	NA	0										0	0											
4 TON EXT. BOOM FORKLIFT	NA	NA	0										0	0											
BULLDOZER CAT D4C	80	diesel	12	Crawler Tractor/Dozers	0.59								0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DELIVERY VEHICLES																									
TRACTOR	130	diesel	4	Tractor/Loader/Backhoe	0.21								0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
															Totals	**0.4239**	**0.2611**	**0.2532**	**2.7690**	**3.7002**	**784.4495**	**0.0063**	**0.0489**	**0.0547**	**0.0101**

Proposed Project Alternative - Nonroad Construction Equipment Emissions - 2017

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Equipment Type	Operating Load (%)	Emission Factors (grams per horsepower hour)										Air Contaminant Emissions (tons per year)									
		Primary Engine				VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs	VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs
FILL EQUIPMENT																									
CAT 973 3.8CY, 210 HP (placing)	210	diesel	12	Tractors/Loaders/Backhoes	0.21	0.624	0.4	0.388	2.116	4.099	624.7	0.005	0.039	0.044	0.0071076	0.1333	0.0854	0.0829	0.4518	0.8751	133.3736	0.0011	0.0083	0.0093	0.0015
CAT 973 3.8CY, 210 HP (wick)	210	diesel	12	Tractors/Loaders/Backhoes	0.21	0.624	0.4	0.388	2.116	4.099	624.7	0.005	0.039	0.044	0.0071076	0.1333	0.0854	0.0829	0.4518	0.8751	133.3736	0.0011	0.0083	0.0093	0.0015
CAT 980GN, 7.0, 300HP(rip rap)	300	diesel	12	Tractors/Loaders/Backhoes	0.21	0.624	0.4	0.388	2.116	4.099	624.7	0.005	0.039	0.044	0.0071076	0.1904	0.1220	0.1184	0.6455	1.2502	190.5338	0.0016	0.0119	0.0133	0.0022
CAT D4C 80HP, 8MT	80	diesel	12	Crawler Tractor/Dozers	0.59	0.229	0.313	0.304	2.351	2.455	595.5	0.005	0.037	0.042	0.0071076	0.0523	0.0716	0.0694	0.5372	0.5609	136.0735	0.0011	0.0085	0.0095	0.0016
CAT D7R 230 HP, 25MT	230	diesel	12	Crawler Tractor/Dozers	0.59	0.182	0.123	0.12	0.63	1.855	536.3	0.004	0.033	0.037	0.0071076	0.1199	0.0811	0.0787	0.4140	1.2186	352.3254	0.0027	0.0219	0.0246	0.0047
Gen Set 100 KW, DSL	100	diesel	12	Gen Set	0.43	0.475	0.389	0.378	2.189	3.974	589	0.005	0.037	0.041	0.0071076	0.0989	0.0811	0.0786	0.4557	0.8273	122.6085	0.0010	0.0076	0.0085	0.0015
4 TON EXT.BOOM FORKLIFT	99	diesel	8	Forklift	0.59	0.144	0.05	0.049	0.624	0.73	595.7	0.004	0.037	0.042	0.0071076	0.0271	0.0095	0.0092	0.1177	0.1376	112.3074	0.0008	0.0070	0.0078	0.0013
MULE KAWASAKI 550 W/TOPS	10	gas	8	Other General Industrial Equipment	0.59	7.03	0.136	0.125	298.6	1.742	1044	0.006	0.065	0.073	0.0071076	0.1339	0.0026	0.0024	5.6863	0.0332	19.8816	0.0001	0.0012	0.0014	0.0001
CAT 563CP, 145 HP	145	diesel	10	Rollers	0.59	0.224	0.226	0.219	0.961	2.376	536.2	0.004	0.033	0.037	0.0071076	0.0774	0.0780	0.0757	0.3317	0.8202	185.0562	0.0015	0.0115	0.0129	0.0025
CAT 563CS, 145 HP	145	diesel	10	Rollers	0.59	0.224	0.226	0.219	0.961	2.376	536.2	0.004	0.033	0.037	0.0071076	0.0774	0.0780	0.0757	0.3317	0.8202	185.0562	0.0015	0.0115	0.0129	0.0025
BOOSTER PUMP	235	diesel	12	Pumps	0.43	0.327	0.202	0.196	0.996	3.66	530.1	0.004	0.033	0.037	0.0071076	0.1598	0.0986	0.0957	0.4872	1.7903	259.3214	0.0022	0.0162	0.0181	0.0035
CRANE BARGES WITH FILL	300	diesel	24	Cranes	0.43	0.201	0.103	0.1	0.491	2.271	530.4	0.004	0.033	0.037	0.0071076	0.2506	0.1283	0.1244	0.6130	2.8368	662.5638	0.0053	0.0413	0.0462	0.0089
CRANE BARGES WITH ROCK	300	diesel	24	Cranes	0.43	0.201	0.103	0.1	0.491	2.271	530.4	0.004	0.033	0.037	0.0071076	0.2506	0.1283	0.1244	0.6130	2.8368	662.5638	0.0053	0.0413	0.0462	0.0089
WHARF CONSTRUCTION EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PILING																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
150 TN CRWLER CRANE	282	diesel	10	Crane	0.43	0.201	0.103	0.1	0.491	2.271	530.4	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EXCAVATOR-JD 330LC 2.3 CY	235	diesel	10	Excavators	0.59	0.173	0.107	0.104	0.555	1.656	536.3	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ATE D46-32 DIESEL HAMMER	230	diesel	10	Other Construction Equipment	0.43	0.232	0.169	0.164	0.862	2.626	536.1	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AIR COMPRESSORS																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
375 CFM, PORT.DSL	115	diesel	8	Air Compressors	0.43	0.25	0.178	0.173	0.724	2.884	530.3	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WELDING EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
300 AMP DC DIESEL	32.7	diesel	8	Welders	0.21	1.156	0.732	0.71	4.619	5.123	692.6	0.006	0.043	0.048	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MISC JOB EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GEN SET 6-10 KW, DSL	11	diesel	8	Gen Set	0.43	0.824	0.574	0.556	4.593	5.527	587.9	0.005	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CENT TRASH PUMP 4" W/TRL	16	gas	8	Pumps	0.43	0.618	0.403	0.391	2.65	4.896	588.5	0.005	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CUTTING EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Torch Cutting Machine	70	MAPP	4	AP-42 Emission Factors-LPG		0.0102	0.0091	0.0091	0.0951	0.1699	162	0.0010	0.01	0.011	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CONCRETE EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TAMPER (JAMPING JACK) WAC	6	diesel	4	Tampers/Rammers	0.43	0.703	0.486	0.472	4.483	4.882	588.3	0.005	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TROWEL MARCH 48"	55	gas	8	Other General Industrial Equipment	0.48	1.305	0.072	0.066	28.83	1.881	708.4	0.013	0.044	0.049	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
VIBRATOR CONCRETE ELEC.2	3	none	8	Electric												0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WICK DRAIN INSTALLATION																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EXCAVATOR-JD 330LC 2.3 CY	235	diesel	10	Excavators	0.59	0.173	0.107	0.104	0.555	1.656	536.3	0.004	0.033	0.037	0.0071076	0.0559	0.0346	0.0336	0.1798	0.5365	173.7725	0.0013	0.0108	0.0121	0.0023
ATE D46-32 DIESEL HAMMER	230	diesel	10	Other Construction Equipment	0.43	0.232	0.169	0.164	0.862	2.626	536.1	0.004	0.033	0.037	0.0071076	0.0535	0.0391	0.0379	0.1993	0.6070	123.9129	0.0010	0.0077	0.0086	0.0016
ROAD CONSTRUCTION EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PAVER	142	diesel	10	Pavers	0.59	0.213	0.22	0.213	0.92	2.232	536.2	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SOIL COMPACTOR	232	diesel	10	Plate Compactors	0.43	0.232	0.169	0.164	0.862	2.626	536.1	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
HYDRAULIC SWEEPER	100	diesel	10	Hydro Power Units	0.43	0.327	0.304	0.295	1.884	3.367	589.4	0.005	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ROLLER	175	diesel	10	Rollers	0.59	0.201	0.144	0.139	0.723	2.173	536.2	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BULLDOZER	105	diesel	10	Crawler Dozers/Tractor	0.59	0.197	0.211	0.205	0.867	2.022	536.2	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GRADER	215	diesel	10	Graders	0.59	0.181	0.121	0.118	0.62	1.823	536.3	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MIXER	25	diesel	10	Cement & Mortar Mixers	0.43	0.882	0.548	0.532	3.278	5.672	587.7	0.005	0.037	0.0410	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
RAIL CONSTRUCTION EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GRADERS	215	diesel	10	Graders	0.59	0.181	0.121	0.118	0.62	1.823	536.3	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BULLDOZERS	105	diesel	10	Crawler Dozers/Tractor	0.59	0.197	0.211	0.205	0.867	2.022	536.2	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ROLLER	175	diesel	10	Rollers	0.59	0.201	0.144	0.139	0.723	2.173	536.2	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GANTRY CRANES		na	10													0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SWING LOADER	300	diesel	10	Rubber Tire Loader	0.59	0.201	0.143	0.139	0.723	2.172	536.2	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
RAIL THREADER	300	diesel	10	Other Construction Equipment	0.59	0.232	0.169	0.164	0.862	2.626	536.1	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UNDER CUTTER	600	diesel	10	Excavators	0.59	0.169	0.137	0.133	0.886	2.219	536.3	0.004	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UTILITY INFRASTRUCTURE EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EXCAVATOR	17.4	diesel	10	Excavators	0.59	0.472	0.358	0.347	2.377	4.464	594.7	0.005	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BACKHOES	75	diesel	10	Tractor/Loader/Backhoe	0.21	0.942	0.738	0.716	5.028	4.998	693.2	0.006	0.043	0.048	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PIPE LAYER	366	diesel	10	Other Construction Equipment	0.59	0.244	0.218	0.212	1.56	3.581	536.1	0.005	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TERMINAL/FACILITIES EQUIPMENT																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CRANE 80 TON CRLR,LS138	230	diesel	8	Crane	0.43								0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30' SCISSOR LIFT	NA	NA	0										0	0											
4 TON EXT. BOOM FORKLIFT	NA	NA	0										0	0											
BULLDOZER CAT D4C	80	diesel	12	Crawler Tractor/Dozers	0.59	0.229	0.313	0.304	2.351	2.455	595.5	0.005	0.037	0.042	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DELIVERY VEHICLES																0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TRACTOR	130	diesel	4	Tractor/Loader/Backhoe	0.21								0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
															Totals	**1.8144**	**1.1236**	**1.0898**	**11.5159**	**16.0258**	**3452.7242**	**0.0277**	**0.2151**	**0.2407**	**0.0445**

Proposed Project Alternative - Nonroad Construction Equipment Emissions - 2018

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Equipment Type	Operating Load (%)	Emission Factors (grams per horsepower hour)										Air Contaminant Emissions (tons per year)									
		Primary Engine				VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs	VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs
FILL EQUIPMENT																									
CAT 973 3.8CY, 210 HP (placing)	210	diesel	12	Tractors/Loaders/Backhoes	0.21	0.5337	0.3374	0.3273	1.7653	3.4469	625	0.0051	0.039	0.044	0.0071076	0.0853	0.0539	0.0523	0.2822	0.5509	99.8910	0.0008	0.0062	0.0070	0.0011
CAT 973 3.8CY, 210 HP (wick)	210	diesel	12	Tractors/Loaders/Backhoes	0.21	0.5337	0.3374	0.3273	1.7653	3.4469	625	0.0051	0.039	0.044	0.0071076	0.0853	0.0539	0.0523	0.2822	0.5509	99.8910	0.0008	0.0062	0.0070	0.0011
CAT 980GN, 7.0, 300HP(rip rap)	300	diesel	12	Tractors/Loaders/Backhoes	0.21	0.5337	0.3374	0.3273	1.7653	3.4469	625	0.0051	0.039	0.044	0.0071076	0.1219	0.0770	0.0747	0.4031	0.7871	142.7014	0.0012	0.0089	0.0099	0.0016
CAT D4C 80HP, 8MT	80	diesel	12	Crawler Tractor/Dozers	0.59	0.1856	0.2158	0.2093	1.6657	1.6829	596	0.0045	0.037	0.042	0.0071076	0.0318	0.0369	0.0358	0.2850	0.2879	101.8909	0.0008	0.0063	0.0071	0.0012
CAT D7R 230 HP, 25MT	230	diesel	12	Crawler Tractor/Dozers	0.59	0.1626	0.0779	0.0756	0.4200	1.2784	536	0.0039	0.033	0.037	0.0071076	0.0800	0.0383	0.0372	0.2066	0.6288	263.7910	0.0019	0.0164	0.0184	0.0035
Gen Set 100 KW, DSL	100	diesel	12	Gen Set	0.43	0.4749	0.3895	0.3778	2.1891	3.9739	589	0.0050	0.037	0.041	0.0071076	0.0740	0.0607	0.0589	0.3412	0.6193	91.7889	0.0008	0.0057	0.0064	0.0011
4 TON EXT.BOOM FORKLIFT	99	diesel	8	Forklift	0.59	0.1440	0.0502	0.0487	0.6242	0.7297	596	0.0040	0.037	0.042	0.0071076	0.0203	0.0071	0.0069	0.0881	0.1030	84.0772	0.0006	0.0052	0.0059	0.0010
MULE KAWASAKI 550 W/TOPS	10	gas	8	Other General Industrial Equipment	0.59	7.0301	0.1364	0.1255	298.61	1.7423	1044	0.0063	0.065	0.073	0.0071076	0.1002	0.0019	0.0018	4.2570	0.0248	14.8841	0.0001	0.0009	0.0010	0.0001
CAT 563CP, 145 HP	145	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0489	0.0458	0.0444	0.1906	0.4484	138.5657	0.0011	0.0086	0.0097	0.0018
CAT 563CS, 145 HP	145	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0489	0.0458	0.0444	0.1906	0.4484	138.5657	0.0011	0.0086	0.0097	0.0018
BOOSTER PUMP	235	diesel	12	Pumps	0.43	0.3267	0.2016	0.1956	0.9960	3.6596	530	0.0044	0.033	0.037	0.0071076	0.1197	0.0738	0.0716	0.3648	1.3403	194.1368	0.0016	0.0121	0.0135	0.0026
CRANE BARGES WITH FILL	300	diesel	24	Cranes	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.1648	0.0716	0.0694	0.3467	1.5634	496.0840	0.0038	0.0309	0.0346	0.0066
CRANE BARGES WITH ROCK	300	diesel	24	Cranes	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.1648	0.0716	0.0694	0.3467	1.5634	496.0840	0.0038	0.0309	0.0346	0.0066
WHARF CONSTRUCTION EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PILING													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
150 TN CRWLER CRANE	282	diesel	10	Crane	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EXCAVATOR-JD 330LC 2.3 CY	235	diesel	10	Excavators	0.59	0.1537	0.0566	0.0549	0.3238	1.0696	536	0.0038	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ATE D46-32 DIESEL HAMMER	230	diesel	10	Other Construction Equipment	0.43	0.2024	0.1334	0.1294	0.6816	2.0264	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AIR COMPRESSORS													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
375 CFM, PORT.DSL	115	diesel	8	Air Compressors	0.43	0.2177	0.1449	0.1405	0.5844	2.2292	530	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WELDING EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
300 AMP DC DIESEL	32.7	diesel	8	Welders	0.21	0.8602	0.5832	0.5657	3.5890	4.7214	693	0.0058	0.043	0.048	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MISC JOB EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GEN SET 6-10 KW, DSL	11	diesel	8	Gen Set	0.43	0.7482	0.5093	0.4940	4.5176	5.1249	588	0.0054	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CENT TRASH PUMP 4" W/TRL	16	gas	8	Pumps	0.43	6.3377	0.1181	0.1087	292.7707	1.6485	1046	0.0064	0.065	0.073	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CUTTING EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Torch Cutting Machine	70	MAPP	4	AP-42 Emission Factors-LPG		0.0102	0.0091	0.0091	0.0951	0.1699	162	0.0010	0.01	0.011	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CONCRETE EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TAMPER (JAMPING JACK) WAC	6	diesel	4	Tampers/Rammers	0.43	0.6526	0.4426	0.4294	4.4611	4.6352	588	0.0054	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TROWEL MARCH 48"	55	gas	8	Other General Industrial Equipment	0.48	0.9144	0.0713	0.0656	19.7008	1.3501	702	0.0043	0.044	0.049	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
VIBRATOR CONCRETE ELEC.2	3	none	8	Electric									0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WICK DRAIN INSTALLATION													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EXCAVATOR-JD 330LC 2.3 CY	235	diesel	10	Excavators	0.59	0.1537	0.0566	0.0549	0.3238	1.0696	536	0.0038	0.033	0.037	0.0071076	0.0644	0.0237	0.0230	0.1356	0.4479	224.6154	0.0016	0.0140	0.0157	0.0030
ATE D46-32 DIESEL HAMMER	230	diesel	10	Other Construction Equipment	0.43	0.2024	0.1334	0.1294	0.6816	2.0264	536	0.0042	0.033	0.037	0.0071076	0.0605	0.0398	0.0386	0.2036	0.6053	160.1772	0.0013	0.0100	0.0112	0.0021
ROAD CONSTRUCTION EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PAVER	142	diesel	10	Pavers	0.59	0.1827	0.1651	0.1602	0.6903	1.6069	536	0.0041	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SOIL COMPACTOR	232	diesel	10	Plate Compactors	0.43	0.2024	0.1334	0.1294	0.6816	2.0264	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
HYDRAULIC SWEEPER	100	diesel	10	Hydro Power Units	0.43	0.2706	0.2388	0.2316	1.5563	2.6585	590	0.0047	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ROLLER	175	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BULLDOZER	105	diesel	10	Crawler Dozers/Tractor	0.59	0.1727	0.1451	0.1407	0.6122	1.4113	536	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GRADER	215	diesel	10	Graders	0.59	0.1611	0.0751	0.0728	0.4072	1.2459	536	0.0039	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MIXER	25	diesel	10	Cement & Mortar Mixers	0.43	0.7869	0.4990	0.4841	3.0554	5.3916	588	0.0054	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
RAIL CONSTRUCTION EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GRADERS	215	diesel	10	Graders	0.59	0.1611	0.0751	0.0728	0.4072	1.2459	536	0.0039	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BULLDOZERS	105	diesel	10	Crawler Dozers/Tractor	0.59	0.1727	0.1451	0.1407	0.6122	1.4113	536	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ROLLER	175	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GANTRY CRANES		na	10										0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SWING LOADER	300	diesel	10	Rubber Tire Loader	0.59	0.1769	0.1060	0.1028	0.5420	1.5998	536	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
RAIL THREADER	300	diesel	10	Other Construction Equipment	0.59	0.2187	0.1829	0.1774	1.2900	3.0035	536	0.0044	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UNDER CUTTER	600	diesel	10	Excavators	0.59	0.1582	0.1041	0.1010	0.6610	1.6317	536	0.0041	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UTILITY INFRASTRUCTURE EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EXCAVATOR	17.4	diesel	10	Excavators	0.59	0.4716	0.3618	0.3510	2.3768	4.4636	595	0.0055	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BACKHOES	75	diesel	10	Tractor/Loader/Backhoe	0.21	0.7673	0.6063	0.5881	4.2541	4.5973	694	0.0059	0.043	0.048	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PIPE LAYER	366	diesel	10	Other Construction Equipment	0.59	0.2187	0.1829	0.1774	1.2900	3.0035	536	0.0044	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TERMINAL/FACILITIES EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CRANE 80 TON CRLR,LS138	230	diesel	8	Crane	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30' SCISSOR LIFT	NA	NA	0																						
4 TON EXT. BOOM FORKLIFT	NA	NA	0																						
BULLDOZER CAT D4C	80	diesel	12	Crawler Tractor/Dozers	0.59	0.1856	0.2158	0.2093	1.6657	1.6829	596	0.0045	0.037	0.042	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DELIVERY VEHICLES																									
TRACTOR	130	diesel	4	Tractor/Loader/Backhoe	0.21	0.6012	0.4361	0.4230	2.1342	3.6584	625	0.0052	0.039	0.044	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
															Totals	**1.2708**	**0.7019**	**0.6807**	**7.9237**	**9.9699**	**2747**	**0.0210**	**0.1711**	**0.1915**	**0.0355**

Proposed Project Alternative - Nonroad Construction Equipment Emissions - 2019

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Equipment Type	Operating Load (%)	Emission Factors (grams per horsepower hour)										Air Contaminant Emissions (tons per year)									
		Primary Engine				VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs	VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs
FILL EQUIPMENT																									
CAT 973 3.8CY, 210 HP (placing)	210	diesel	12	Tractors/Loaders/Backhoes	0.21	0.5337	0.3374	0.3273	1.7653	3.4469	625	0.0051	0.039	0.044	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT 973 3.8CY, 210 HP (wick)	210	diesel	12	Tractors/Loaders/Backhoes	0.21	0.5337	0.3374	0.3273	1.7653	3.4469	625	0.0051	0.039	0.044	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT 980GN, 7.0, 300HP(rip rap)	300	diesel	12	Tractors/Loaders/Backhoes	0.21	0.5337	0.3374	0.3273	1.7653	3.4469	625	0.0051	0.039	0.044	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT D4C 80HP, 8MT	80	diesel	12	Crawler Tractor/Dozers	0.59	0.1856	0.2158	0.2093	1.6657	1.6829	596	0.0045	0.037	0.042	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT D7R 230 HP, 25MT	230	diesel	12	Crawler Tractor/Dozers	0.59	0.1626	0.0779	0.0756	0.4200	1.2784	536	0.0039	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Gen Set 100 KW, DSL	100	diesel	12	Gen Set	0.43	0.4749	0.3895	0.3778	2.1891	3.9739	589	0.0050	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4 TON EXT.BOOM FORKLIFT	99	diesel	8	Forklift	0.59	0.1440	0.0502	0.0487	0.6242	0.7297	596	0.0040	0.037	0.042	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MULE KAWASAKI 550 W/TOPS	10	gas	8	Other General Industrial Equipment	0.59	7.0301	0.1364	0.1255	298.61	1.7423	1044	0.0063	0.065	0.073	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT 563CP, 145 HP	145	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT 563CS, 145 HP	145	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BOOSTER PUMP	235	diesel	12	Pumps	0.43	0.3267	0.2016	0.1956	0.9960	3.6596	530	0.0044	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CRANE BARGES WITH FILL	300	diesel	24	Cranes	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CRANE BARGES WITH ROCK	300	diesel	24	Cranes	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WHARF CONSTRUCTION EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PILING													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
150 TN CRWLER CRANE	282	diesel	10	Crane	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0217	0.0094	0.0091	0.0456	0.2056	65.2393	0.0005	0.0041	0.0045	0.0009
EXCAVATOR-JD 330LC 2.3 CY	235	diesel	10	Excavators	0.59	0.1537	0.0566	0.0549	0.3238	1.0696	536	0.0038	0.033	0.037	0.0071076	0.0216	0.0080	0.0077	0.0455	0.1504	75.4183	0.0005	0.0047	0.0053	0.0010
ATE D46-32 DIESEL HAMMER	230	diesel	10	Other Construction Equipment	0.43	0.2024	0.1334	0.1294	0.6816	2.0264	536	0.0042	0.033	0.037	0.0071076	0.0203	0.0134	0.0130	0.0684	0.2032	53.7821	0.0004	0.0034	0.0037	0.0007
AIR COMPRESSORS													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
375 CFM, PORT.DSL	115	diesel	8	Air Compressors	0.43	0.2177	0.1449	0.1405	0.5844	2.2292	530	0.0042	0.033	0.037	0.0071076	0.0087	0.0058	0.0056	0.0234	0.0894	21.2789	0.0002	0.0013	0.0015	0.0003
WELDING EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
300 AMP DC DIESEL	32.7	diesel	8	Welders	0.21	0.8602	0.5832	0.5657	3.5890	4.7214	693	0.0058	0.043	0.048	0.0071076	0.0048	0.0032	0.0032	0.0200	0.0263	3.8633	0.0000	0.0002	0.0003	0.0000
MISC JOB EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GEN SET 6-10 KW, DSL	11	diesel	8	Gen Set	0.43	0.7482	0.5093	0.4940	4.5176	5.1249	588	0.0054	0.037	0.041	0.0071076	0.0029	0.0020	0.0019	0.0173	0.0197	2.2569	0.0000	0.0001	0.0002	0.0000
CENT TRASH PUMP 4" W/TRL	16	gas	8	Pumps	0.43	6.3377	0.1181	0.1087	292.7707	1.6485	1046	0.0064	0.065	0.073	0.0071076	0.0354	0.0007	0.0006	1.6342	0.0092	5.8400	0.0000	0.0004	0.0004	0.0000
CUTTING EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Torch Cutting Machine	70	MAPP	4	AP-42 Emission Factors-LPG		0.0102	0.0091	0.0091	0.0951	0.1699	162	0.0010	0.01	0.011	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CONCRETE EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TAMPER (JAMPING JACK) WAC	6	diesel	4	Tampers/Rammers	0.43	0.6526	0.4426	0.4294	4.4611	4.6352	588	0.0054	0.037	0.041	0.0071076	0.0007	0.0005	0.0004	0.0047	0.0049	0.6158	0.0000	0.0000	0.0000	0.0000
TROWEL MARCH 48"	55	gas	8	Other General Industrial Equipment	0.48	0.9144	0.0713	0.0656	19.7008	1.3501	702	0.0043	0.044	0.049	0.0071076	0.0196	0.0015	0.0014	0.4220	0.0289	15.0309	0.0001	0.0009	0.0010	0.0002
VIBRATOR CONCRETE ELEC.2	3	none	8	Electric									0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WICK DRAIN INSTALLATION													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EXCAVATOR-JD 330LC 2.3 CY	235	diesel	10	Excavators	0.59	0.1537	0.0566	0.0549	0.3238	1.0696	536	0.0038	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ATE D46-32 DIESEL HAMMER	230	diesel	10	Other Construction Equipment	0.43	0.2024	0.1334	0.1294	0.6816	2.0264	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ROAD CONSTRUCTION EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PAVER	142	diesel	10	Pavers	0.59	0.1827	0.1651	0.1602	0.6903	1.6069	536	0.0041	0.033	0.037	0.0071076	0.0154	0.0139	0.0135	0.0580	0.1350	45.0695	0.0003	0.0028	0.0031	0.0006
SOIL COMPACTOR	232	diesel	10	Plate Compactors	0.43	0.2024	0.1334	0.1294	0.6816	2.0264	536	0.0042	0.033	0.037	0.0071076	0.0203	0.0133	0.0129	0.0682	0.2028	53.6601	0.0004	0.0033	0.0037	0.0007
HYDRAULIC SWEEPER	100	diesel	10	Hydro Power Units	0.43	0.2706	0.2388	0.2316	1.5563	2.6585	590	0.0047	0.037	0.041	0.0071076	0.0117	0.0103	0.0100	0.0671	0.1147	25.4300	0.0002	0.0016	0.0018	0.0003
ROLLER	175	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0196	0.0183	0.0178	0.0764	0.1797	55.5414	0.0004	0.0035	0.0039	0.0007
BULLDOZER	105	diesel	10	Crawler Dozers/Tractor	0.59	0.1727	0.1451	0.1407	0.6122	1.4113	536	0.0040	0.033	0.037	0.0071076	0.0107	0.0090	0.0087	0.0380	0.0877	33.3279	0.0002	0.0021	0.0023	0.0004
GRADER	215	diesel	10	Graders	0.59	0.1611	0.0751	0.0728	0.4072	1.2459	536	0.0039	0.033	0.037	0.0071076	0.0205	0.0096	0.0093	0.0518	0.1585	68.2470	0.0005	0.0043	0.0048	0.0009
MIXER	25	diesel	10	Cement & Mortar Mixers	0.43	0.7869	0.4990	0.4841	3.0554	5.3916	588	0.0054	0.037	0.041	0.0071076	0.0085	0.0054	0.0052	0.0329	0.0581	6.3408	0.0001	0.0004	0.0004	0.0001
RAIL CONSTRUCTION EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GRADERS	215	diesel	10	Graders	0.59	0.1611	0.0751	0.0728	0.4072	1.2459	536	0.0039	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BULLDOZERS	105	diesel	10	Crawler Dozers/Tractor	0.59	0.1727	0.1451	0.1407	0.6122	1.4113	536	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ROLLER	175	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GANTRY CRANES		na	10										0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SWING LOADER	300	diesel	10	Rubber Tire Loader	0.59	0.1769	0.1060	0.1028	0.5420	1.5998	536	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
RAIL THREADER	300	diesel	10	Other Construction Equipment	0.59	0.2187	0.1829	0.1774	1.2900	3.0035	536	0.0044	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UNDER CUTTER	600	diesel	10	Excavators	0.59	0.1582	0.1041	0.1010	0.6610	1.6317	536	0.0041	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UTILITY INFRASTRUCTURE EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EXCAVATOR	17.4	diesel	10	Excavators	0.59	0.4716	0.3618	0.3510	2.3768	4.4636	595	0.0055	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BACKHOES	75	diesel	10	Tractor/Loader/Backhoe	0.21	0.7673	0.6063	0.5881	4.2541	4.5973	694	0.0059	0.043	0.048	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PIPE LAYER	366	diesel	10	Other Construction Equipment	0.59	0.2187	0.1829	0.1774	1.2900	3.0035	536	0.0044	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TERMINAL/FACILITIES EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CRANE 80 TON CRLR,LS138	230	diesel	8	Crane	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30' SCISSOR LIFT	NA	NA	0																						
4 TON EXT. BOOM FORKLIFT	NA	NA	0																						
BULLDOZER CAT D4C	80	diesel	12	Crawler Tractor/Dozers	0.59	0.1856	0.2158	0.2093	1.6657	1.6829	596	0.0045	0.037	0.042	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DELIVERY VEHICLES																									
TRACTOR	130	diesel	4	Tractor/Loader/Backhoe	0.21	0.6012	0.4361	0.4230	2.1342	3.6584	625	0.0052	0.039	0.044	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
															Totals	**0.2422**	**0.1242**	**0.1204**	**2.6736**	**1.6742**	**530.9422**	**0.0040**	**0.0331**	**0.0370**	**0.0069**

Proposed Project Alternative - Nonroad Construction Equipment Emissions - 2020

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Equipment Type	Operating Load (%)	Emission Factors (grams per horsepower hour)										Air Contaminant Emissions (tons per year)									
		Primary Engine				VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs	VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs
FILL EQUIPMENT																									
CAT 973 3.8CY, 210 HP (placing)	210	diesel	12	Tractors/Loaders/Backhoes	0.21	0.5337	0.3374	0.3273	1.7653	3.4469	625	0.0051	0.039	0.044	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT 973 3.8CY, 210 HP (wick)	210	diesel	12	Tractors/Loaders/Backhoes	0.21	0.5337	0.3374	0.3273	1.7653	3.4469	625	0.0051	0.039	0.044	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT 980GN, 7.0, 300HP(rip rap)	300	diesel	12	Tractors/Loaders/Backhoes	0.21	0.5337	0.3374	0.3273	1.7653	3.4469	625	0.0051	0.039	0.044	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT D4C 80HP, 8MT	80	diesel	12	Crawler Tractor/Dozers	0.59	0.1856	0.2158	0.2093	1.6657	1.6829	596	0.0045	0.037	0.042	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT D7R 230 HP, 25MT	230	diesel	12	Crawler Tractor/Dozers	0.59	0.1626	0.0779	0.0756	0.4200	1.2784	536	0.0039	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Gen Set 100 KW, DSL	100	diesel	12	Gen Set	0.43	0.4749	0.3895	0.3778	2.1891	3.9739	589	0.0050	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4 TON EXT.BOOM FORKLIFT	99	diesel	8	Forklift	0.59	0.1440	0.0502	0.0487	0.6242	0.7297	596	0.0040	0.037	0.042	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MULE KAWASAKI 550 W/TOPS	10	gas	8	Other General Industrial Equipment	0.59	7.0301	0.1364	0.1255	298.61	1.7423	1044	0.0063	0.065	0.073	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT 563CP, 145 HP	145	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT 563CS, 145 HP	145	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BOOSTER PUMP	235	diesel	12	Pumps	0.43	0.3267	0.2016	0.1956	0.9960	3.6596	530	0.0044	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CRANE BARGES WITH FILL	300	diesel	24	Cranes	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CRANE BARGES WITH ROCK	300	diesel	24	Cranes	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WHARF CONSTRUCTION EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PILING													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
150 TN CRWLER CRANE	282	diesel	10	Crane	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EXCAVATOR-JD 330LC 2.3 CY	235	diesel	10	Excavators	0.59	0.1537	0.0566	0.0549	0.3238	1.0696	536	0.0038	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ATE D46-32 DIESEL HAMMER	230	diesel	10	Other Construction Equipment	0.43	0.2024	0.1334	0.1294	0.6816	2.0264	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AIR COMPRESSORS													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
375 CFM, PORT.DSL	115	diesel	8	Air Compressors	0.43	0.2177	0.1449	0.1405	0.5844	2.2292	530	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WELDING EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
300 AMP DC DIESEL	32.7	diesel	8	Welders	0.21	0.8602	0.5832	0.5657	3.5890	4.7214	693	0.0058	0.043	0.048	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MISC JOB EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GEN SET 6-10 KW, DSL	11	diesel	8	Gen Set	0.43	0.7482	0.5093	0.4940	4.5176	5.1249	588	0.0054	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CENT TRASH PUMP 4" W/TRL	16	gas	8	Pumps	0.43	6.3377	0.1181	0.1087	292.7707	1.6485	1046	0.0064	0.065	0.073	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CUTTING EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Torch Cutting Machine	70	MAPP	4	AP-42 Emission Factors-LPG		0.0102	0.0091	0.0091	0.0951	0.1699	162	0.0010	0.01	0.011	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CONCRETE EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TAMPER (JAMPING JACK) WAC	6	diesel	4	Tampers/Rammers	0.43	0.6526	0.4426	0.4294	4.4611	4.6352	588	0.0054	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TROWEL MARCH 48"	55	gas	8	Other General Industrial Equipment	0.48	0.9144	0.0713	0.0656	19.7008	1.3501	702	0.0043	0.044	0.049	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
VIBRATOR CONCRETE ELEC.2	3	none	8	Electric									0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WICK DRAIN INSTALLATION													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EXCAVATOR-JD 330LC 2.3 CY	235	diesel	10	Excavators	0.59	0.1537	0.0566	0.0549	0.3238	1.0696	536	0.0038	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ATE D46-32 DIESEL HAMMER	230	diesel	10	Other Construction Equipment	0.43	0.2024	0.1334	0.1294	0.6816	2.0264	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ROAD CONSTRUCTION EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
PAVER	142	diesel	10	Pavers	0.59	0.1827	0.1651	0.1602	0.6903	1.6069	536	0.0041	0.033	0.037	0.0071076	0.0513	0.0464	0.0450	0.1938	0.4511	150.5619	0.0012	0.0094	0.0105	0.0020
SOIL COMPACTOR	232	diesel	10	Plate Compactors	0.43	0.2024	0.1334	0.1294	0.6816	2.0264	536	0.0042	0.033	0.037	0.0071076	0.0677	0.0446	0.0432	0.2278	0.6774	179.2602	0.0014	0.0112	0.0125	0.0024
HYDRAULIC SWEEPER	100	diesel	10	Hydro Power Units	0.43	0.2706	0.2388	0.2316	1.5563	2.6585	590	0.0047	0.037	0.041	0.0071076	0.0390	0.0344	0.0334	0.2242	0.3831	84.9528	0.0007	0.0053	0.0059	0.0010
ROLLER	175	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0655	0.0613	0.0594	0.2552	0.6004	185.5448	0.0014	0.0116	0.0129	0.0025
BULLDOZER	105	diesel	10	Crawler Dozers/Tractor	0.59	0.1727	0.1451	0.1407	0.6122	1.4113	536	0.0040	0.033	0.037	0.0071076	0.0359	0.0301	0.0292	0.1271	0.2930	111.3370	0.0008	0.0069	0.0078	0.0015
GRADER	215	diesel	10	Graders	0.59	0.1611	0.0751	0.0728	0.4072	1.2459	536	0.0039	0.033	0.037	0.0071076	0.0685	0.0319	0.0309	0.1731	0.5296	227.9900	0.0016	0.0142	0.0159	0.0030
MIXER	25	diesel	10	Cement & Mortar Mixers	0.43	0.7869	0.4990	0.4841	3.0554	5.3916	588	0.0054	0.037	0.041	0.0071076	0.0283	0.0180	0.0174	0.1101	0.1942	21.1826	0.0002	0.0013	0.0015	0.0003
RAIL CONSTRUCTION EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GRADERS	215	diesel	10	Graders	0.59	0.1611	0.0751	0.0728	0.4072	1.2459	536	0.0039	0.033	0.037	0.0071076	0.0070	0.0033	0.0032	0.0177	0.0540	23.2490	0.0002	0.0014	0.0016	0.0003
BULLDOZERS	105	diesel	10	Crawler Dozers/Tractor	0.59	0.1727	0.1451	0.1407	0.6122	1.4113	536	0.0040	0.033	0.037	0.0071076	0.0037	0.0031	0.0030	0.0130	0.0299	11.3534	0.0001	0.0007	0.0008	0.0002
ROLLER	175	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0067	0.0062	0.0061	0.0260	0.0612	18.9207	0.0001	0.0012	0.0013	0.0003
GANTRY CRANES		na	10										0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SWING LOADER	300	diesel	10	Rubber Tire Loader	0.59	0.1769	0.1060	0.1028	0.5420	1.5998	536	0.0040	0.033	0.037	0.0071076	0.0107	0.0064	0.0062	0.0328	0.0968	32.4377	0.0002	0.0020	0.0023	0.0004
RAIL THREADER	300	diesel	10	Other Construction Equipment	0.59	0.2187	0.1829	0.1774	1.2900	3.0035	536	0.0044	0.033	0.037	0.0071076	0.0132	0.0111	0.0107	0.0780	0.1817	32.4303	0.0003	0.0020	0.0023	0.0004
UNDER CUTTER	600	diesel	10	Excavators	0.59	0.1582	0.1041	0.1010	0.6610	1.6317	536	0.0041	0.033	0.037	0.0071076	0.0191	0.0126	0.0122	0.0800	0.1974	64.8820	0.0005	0.0040	0.0045	0.0009
UTILITY INFRASTRUCTURE EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EXCAVATOR	17.4	diesel	10	Excavators	0.59	0.4716	0.3618	0.3510	2.3768	4.4636	595	0.0055	0.037	0.041	0.0071076	0.0016	0.0012	0.0012	0.0081	0.0152	2.0191	0.0000	0.0001	0.0001	0.0000
BACKHOES	75	diesel	10	Tractor/Loader/Backhoe	0.21	0.7673	0.6063	0.5881	4.2541	4.5973	694	0.0059	0.043	0.048	0.0071076	0.0040	0.0032	0.0031	0.0222	0.0239	3.6132	0.0000	0.0002	0.0003	0.0000
PIPE LAYER	366	diesel	10	Other Construction Equipment	0.59	0.2187	0.1829	0.1774	1.2900	3.0035	536	0.0044	0.033	0.037	0.0071076	0.0156	0.0131	0.0127	0.0921	0.2145	38.2887	0.0003	0.0024	0.0027	0.0005
TERMINAL/FACILITIES EQUIPMENT													0	0	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CRANE 80 TON CRLR,LS138	230	diesel	8	Crane	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30' SCISSOR LIFT	NA	NA	0																						
4 TON EXT. BOOM FORKLIFT	NA	NA	0																						
BULLDOZER CAT D4C	80	diesel	12	Crawler Tractor/Dozers	0.59	0.1856	0.2158	0.2093	1.6657	1.6829	596	0.0045	0.037	0.042	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DELIVERY VEHICLES																									
TRACTOR	130	diesel	4	Tractor/Loader/Backhoe	0.21	0.6012	0.4361	0.4230	2.1342	3.6584	625	0.0052	0.039	0.044	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
															Totals	**0.4378**	**0.3267**	**0.3169**	**1.6811**	**4.0033**	**1188**	**0.0091**	**0.0740**	**0.0828**	**0.0156**

Proposed Project Alternative - Nonroad Construction Equipment Emissions - 2021

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Equipment Type	Operating Load (%)	Emission Factors (grams per horsepower hour)										Air Contaminant Emissions (tons per year)									
		Primary Engine				VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs	VOC	PM10	PM2.5	CO	NOx	CO2	SO2	CH4	N20	Total HAPs
FILL EQUIPMENT																									
CAT 973 3.8CY, 210 HP (placing)	210	diesel	12	Tractors/Loaders/Backhoes	0.21	0.5337	0.3374	0.3273	1.7653	3.4469	625	0.0051	0.039	0.044	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT 973 3.8CY, 210 HP (wick)	210	diesel	12	Tractors/Loaders/Backhoes	0.21	0.5337	0.3374	0.3273	1.7653	3.4469	625	0.0051	0.039	0.044	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT 980GN, 7.0, 300HP(rip rap)	300	diesel	12	Tractors/Loaders/Backhoes	0.21	0.5337	0.3374	0.3273	1.7653	3.4469	625	0.0051	0.039	0.044	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT D4C 80HP, 8MT	80	diesel	12	Crawler Tractor/Dozers	0.59	0.1856	0.2158	0.2093	1.6657	1.6829	596	0.0045	0.037	0.042	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT D7R 230 HP, 25MT	230	diesel	12	Crawler Tractor/Dozers	0.59	0.1626	0.0779	0.0756	0.4200	1.2784	536	0.0039	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Gen Set 100 KW, DSL	100	diesel	12	Gen Set	0.43	0.4749	0.3895	0.3778	2.1891	3.9739	589	0.0050	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
4 TON EXT.BOOM FORKLIFT	99	diesel	8	Forklift	0.59	0.1440	0.0502	0.0487	0.6242	0.7297	596	0.0040	0.037	0.042	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MULE KAWASAKI 550 W/TOPS	10	gas	8	Other General Industrial Equipment	0.59	7.0301	0.1364	0.1255	298.61	1.7423	1044	0.0063	0.065	0.073	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT 563CP, 145 HP	145	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CAT 563CS, 145 HP	145	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BOOSTER PUMP	235	diesel	12	Pumps	0.43	0.3267	0.2016	0.1956	0.9960	3.6596	530	0.0044	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CRANE BARGES WITH FILL	300	diesel	24	Cranes	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CRANE BARGES WITH ROCK	300	diesel	24	Cranes	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WHARF CONSTRUCTION EQUIPMENT																									
PILING																									
150 TN CRWLER CRANE	282	diesel	10	Crane	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EXCAVATOR-JD 330LC 2.3 CY	235	diesel	10	Excavators	0.59	0.1537	0.0566	0.0549	0.3238	1.0696	536	0.0038	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ATE D46-32 DIESEL HAMMER	230	diesel	10	Other Construction Equipment	0.43	0.2024	0.1334	0.1294	0.6816	2.0264	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
AIR COMPRESSORS																									
375 CFM, PORT.DSL	115	diesel	8	Air Compressors	0.43	0.2177	0.1449	0.1405	0.5844	2.2292	530	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WELDING EQUIPMENT																									
300 AMP DC DIESEL	32.7	diesel	8	Welders	0.21	0.8602	0.5832	0.5657	3.5890	4.7214	693	0.0058	0.043	0.048	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MISC JOB EQUIPMENT																									
GEN SET 6-10 KW, DSL	11	diesel	8	Gen Set	0.43	0.7482	0.5093	0.4940	4.5176	5.1249	588	0.0054	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CENT TRASH PUMP 4" W/TRL	16	gas	8	Pumps	0.43	6.3377	0.1181	0.1087	292.7707	1.6485	1046	0.0064	0.065	0.073	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CUTTING EQUIPMENT																									
Torch Cutting Machine	70	MAPP	4	AP-42 Emission Factors-LPG		0.0102	0.0091	0.0091	0.0951	0.1699	162	0.0010	0.01	0.011	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CONCRETE EQUIPMENT																									
TAMPER (JAMPING JACK) WAC	6	diesel	4	Tampers/Rammers	0.43	0.6526	0.4426	0.4294	4.4611	4.6352	588	0.0054	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TROWEL MARCH 48"	55	gas	8	Other General Industrial Equipment	0.48	0.9144	0.0713	0.0656	19.7008	1.3501	702	0.0043	0.044	0.049	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
VIBRATOR CONCRETE ELEC.2	3	none	8	Electric									0	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WICK DRAIN INSTALLATION																									
EXCAVATOR-JD 330LC 2.3 CY	235	diesel	10	Excavators	0.59	0.1537	0.0566	0.0549	0.3238	1.0696	536	0.0038	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ATE D46-32 DIESEL HAMMER	230	diesel	10	Other Construction Equipment	0.43	0.2024	0.1334	0.1294	0.6816	2.0264	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ROAD CONSTRUCTION EQUIPMENT																									
PAVER	142	diesel	10	Pavers	0.59	0.1827	0.1651	0.1602	0.6903	1.6069	536	0.0041	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SOIL COMPACTOR	232	diesel	10	Plate Compactors	0.43	0.2024	0.1334	0.1294	0.6816	2.0264	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
HYDRAULIC SWEEPER	100	diesel	10	Hydro Power Units	0.43	0.2706	0.2388	0.2316	1.5563	2.6585	590	0.0047	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ROLLER	175	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BULLDOZER	105	diesel	10	Crawler Dozers/Tractor	0.59	0.1727	0.1451	0.1407	0.6122	1.4113	536	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GRADER	215	diesel	10	Graders	0.59	0.1611	0.0751	0.0728	0.4072	1.2459	536	0.0039	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MIXER	25	diesel	10	Cement & Mortar Mixers	0.43	0.7869	0.4990	0.4841	3.0554	5.3916	588	0.0054	0.037	0.041	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
RAIL CONSTRUCTION EQUIPMENT																									
GRADERS	215	diesel	10	Graders	0.59	0.1611	0.0751	0.0728	0.4072	1.2459	536	0.0039	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BULLDOZERS	105	diesel	10	Crawler Dozers/Tractor	0.59	0.1727	0.1451	0.1407	0.6122	1.4113	536	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ROLLER	175	diesel	10	Rollers	0.59	0.1894	0.1771	0.1718	0.7376	1.7354	536	0.0042	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
GANTRY CRANES		na	10																						
SWING LOADER	300	diesel	10	Rubber Tire Loader	0.59	0.1769	0.1060	0.1028	0.5420	1.5998	536	0.0040	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
RAIL THREADER	300	diesel	10	Other Construction Equipment	0.59	0.2187	0.1829	0.1774	1.2900	3.0035	536	0.0044	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UNDER CUTTER	600	diesel	10	Excavators	0.59	0.1582	0.1041	0.1010	0.6610	1.6317	536	0.0041	0.033	0.037	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UTILITY INFRASTRUCTURE EQUIPMENT																									
EXCAVATOR	17.4	diesel	10	Excavators	0.59	0.4716	0.3618	0.3510	2.3768	4.4636	595	0.0055	0.037	0.041	0.0071076	0.0008	0.0006	0.0006	0.0040	0.0076	1.0095	0.0000	0.0001	0.0001	0.0000
BACKHOES	75	diesel	10	Tractor/Loader/Backhoe	0.21	0.7673	0.6063	0.5881	4.2541	4.5973	694	0.0059	0.043	0.048	0.0071076	0.0020	0.0016	0.0015	0.0111	0.0120	1.8066	0.0000	0.0001	0.0001	0.0000
PIPE LAYER	366	diesel	10	Other Construction Equipment	0.59	0.2187	0.1829	0.1774	1.2900	3.0035	536	0.0044	0.033	0.037	0.0071076	0.0078	0.0065	0.0063	0.0461	0.1072	19.1443	0.0002	0.0012	0.0013	0.0003
TERMINAL/FACILITIES EQUIPMENT																									
CRANE 80 TON CRLR,LS138	230	diesel	8	Crane	0.43	0.1763	0.0765	0.0742	0.3707	1.6719	531	0.0040	0.033	0.037	0.0071076	0.0326	0.0142	0.0137	0.0685	0.3091	98.0902	0.0007	0.0061	0.0068	0.0013
30' SCISSOR LIFT	NA	NA	0																						
4 TON EXT. BOOM FORKLIFT	NA	NA	0																						
BULLDOZER CAT D4C	80	diesel	12	Crawler Tractor/Dozers	0.59	0.1856	0.2158	0.2093	1.6657	1.6829	596	0.0045	0.037	0.042	0.0071076	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DELIVERY VEHICLES																									
TRACTOR	130	diesel	4	Tractor/Loader/Backhoe	0.21	0.6012	0.4361	0.4230	2.1342	3.6584	625	0.0052	0.039	0.044	0.0071076	0.0153	0.0111	0.0108	0.0545	0.0934	15.9432	0.0001	0.0010	0.0011	0.0002
															Totals	**0.0585**	**0.0340**	**0.0330**	**0.1842**	**0.5293**	**135.9939**	**0.0011**	**0.0085**	**0.0095**	**0.0018**

Proposed Project Alternative - On-Road Construction Equipment Emissions 2016

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Number of Vehicles per Day	Daily Travel Per Vehicle	Number of Travel Days per year	Annual Vehicle Miles Traveled	Air Contaminant Emissions (tons per year)										
		Primary Engine						NO_x	VOC	CO	SO_2	$PM_{2.5}$	PM_{10}	PM	CO_2	CH_4	N_2O	HAPs
DREDGING EQUIPMENT																		
BUCKET DREDGE																		
MEDIUM DUTY TRUCK	250	diesel	4	1	50	181	9050	0.0439	0.0090	0.0306	0.0001	0.0022	0.0022	0.0022	4.8496	0.0004	0.0000	0.0016
BUS (CREW)	210	diesel	3	1	50	121	6033.333	0.0693	0.0060	0.0268	0.0002	0.0033	0.0034	0.0034	5.8505	0.0004	0.0000	0.0019
SUPERINTENDENT (Truck)		gasoline	3	1	50	26	1314	0.0011	0.0005	0.0087	0.0000	0.0000	0.0000	0.0000	0.4946	0.0000	0.0000	0.0000
MAINTENANCE DREDGING EQUIPMENT (MECH)																		
MEDIUM DUTY TRUCK	250	diesel	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BUS	210	diesel	3	1	10	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SUPERINTENDENT (Truck)		gasoline	3	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
FILL EQUIPMENT																		
18 WHEEL WITH FLATBED	335	diesel	4	1	160	91	14560	0.1430	0.0112	0.0463	0.0007	0.0075	0.0078	0.0078	23.9157	0.0015	0.0001	0.0029
DUMP TRUCKS	550	diesel	32	4	50	91	4550	0.0865	0.0131	0.0359	0.0005	0.0042	0.0044	0.0044	17.0306	0.0020	0.0001	0.0036
1500 GLN WATER TRUCK, 4×2	410	gas	10	1	50	91	4550	0.0192	0.0081	0.1057	0.0002	0.0000	0.0000	0.0000	3.7055	0.0001	0.0001	0.0006
2- 7 passenger van		gasoline	0.17/3	2	20/50	99	12964	0.0254	0.0116	0.1815	0.0005	0.0003	0.0003	0.0003	9.7391	0.0004	0.0003	0.0007
8- cars		gasoline	0.17/3	8	20/50	99	51857	0.1470	0.0786	1.5619	0.0055	0.0035	0.0038	0.0038	118.2424	0.0032	0.0017	0.0034
8- trucks		gasoline	0.17/3	8	20/50	99	51857	0.3433	0.1680	2.7341	0.0073	0.0047	0.0051	0.0051	156.1266	0.0052	0.0043	0.0094
WHARF CONSTRUCTION EQUIPMENT																		
PILING																		
PICKUP TRUCKS	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MISC JOB EQUIPMENT																		
REG SRVC TRUCK, W/EQUIPMENT	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TRAILERS	NA	NA	0				0											
PICKUP TRUCKS	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6- cars		gasoline	0.17/3	6	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6- trucks		gasoline	0.17/3	6	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WICK DRAIN INSTALLATION																		
PICKUP TRUCKS	350	gasoline	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3- cars		gasoline	0.17/3	3	20/50	0	2192	0.0023	0.0012	0.0248	0.0001	0.0001	0.0001	0.0001	1.8744	0.0001	0.0000	0.0001
3- trucks		gasoline	0.17/3	3	20/50	0	2192	0.0054	0.0027	0.0433	0.0001	0.0001	0.0001	0.0001	2.4750	0.0001	0.0001	0.0001
ROAD CONSTRUCTION EQUIPMENT																		
DUMP TRUCKS	550	diesel	10	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- cars		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- trucks		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
RAIL CONSTRUCTION EQUIPMENT																		
18 WHEELER	300	diesel	10	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- cars		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- trucks		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UTILITY INFRASTRUCTURE EQUIPMENT																		
DUMP TRUCKS	550	diesel	10	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3- cars		gasoline	0.17/3	3	20/50	0	0											
3- trucks		gasoline	0.17/3	3	20/50	0	0											
TERMINAL/FACILITIES EQUIPMENT																		
18 WHEEL WITH FLATBED	NA	NA	0	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8- cars		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8- trucks		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DELIVERY VEHICLES																		
DUMP TRUCKS	NA	NA	0	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18 WHEEL WITH FLATBED	400	diesel	7.5	15	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WATER TRUCK	NA	NA	0	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BUS		diesel	0	1	10	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EMPLOYEE VEHICLES	350	gasoline	5.1	30	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
							Totals	**0.88653**	**0.31009**	**4.79963**	**0.01524**	**0.02592**	**0.0271968**	**0.0272**	**344.304**	**0.01339**	**0.00681**	**0.024**

Proposed Project Alternative - On-Road Construction Equipment Emissions 2017

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Number of Vehicles per Day	Daily Travel Per Vehicle	Number of Travel Days per year	Annual Vehicle Miles Traveled	Air Contaminant Emissions (tons per year)										
		Primary Engine						NO_x	VOC	CO	SO_2	$PM_{2.5}$	PM_{10}	PM	CO_2	CH_4	N_2O	HAPs
DREDGING EQUIPMENT																		
BUCKET DREDGE																		
MEDIUM DUTY TRUCK	250	diesel	4	1	50	62	3100	0.0150	0.0031	0.0105	0.0001	0.0007	0.0008	0.0008	1.6612	0.0001	0.0000	0.0005
BUS (CREW)	210	diesel	2	1	50	62	3100	0.0356	0.0031	0.0138	0.0001	0.0017	0.0018	0.0018	3.0060	0.0002	0.0000	0.0010
SUPERINTENDENT (Truck)		gasoline	3	1	50	8	421	0.0003	0.0002	0.0028	0.0000	0.0000	0.0000	0.0000	0.1586	0.0000	0.0000	0.0000
MAINTENANCE DREDGING EQUIPMENT (MECH)																		
MEDIUM DUTY TRUCK	250	diesel	4	1	50	42	2118	0.0103	0.0021	0.0072	0.0000	0.0005	0.0005	0.0005	1.1349	0.0001	0.0000	0.0004
BUS	210	diesel	3	1	10	28	282	0.0032	0.0003	0.0013	0.0000	0.0002	0.0002	0.0002	0.2738	0.0000	0.0000	0.0001
SUPERINTENDENT (Truck)		gasoline	3	1	50	6	295	0.0002	0.0001	0.0019	0.0000	0.0000	0.0000	0.0000	0.1112	0.0000	0.0000	0.0000
FILL EQUIPMENT																		
18 WHEEL WITH FLATBED	335	diesel	4	1	160	366	58560	0.5753	0.0452	0.1861	0.0029	0.0303	0.0312	0.0312	96.1885	0.0062	0.0004	0.0118
DUMP TRUCKS	550	diesel	32	4	50	366	18300	0.3480	0.0525	0.1446	0.0021	0.0171	0.0176	0.0176	68.4966	0.0079	0.0004	0.0143
1500 GLN WATER TRUCK, 4×2	410	gas	10	1	50	366	18300	0.0774	0.0327	0.4252	0.0007	0.0002	0.0002	0.0002	14.9035	0.0006	0.0005	0.0025
2- 7 passenger van		gasoline	0.17/3	2	20/50	391	17207	0.0337	0.0154	0.2409	0.0006	0.0004	0.0004	0.0004	12.9264	0.0005	0.0004	0.0009
8- cars		gasoline	0.17/3	8	20/50	391	68829	0.1952	0.1043	2.0730	0.0073	0.0046	0.0050	0.0050	156.9399	0.0043	0.0022	0.0046
8- trucks		gasoline	0.17/3	8	20/50	391	68829	0.4557	0.2229	3.6290	0.0097	0.0063	0.0068	0.0068	207.2226	0.0069	0.0057	0.0125
WHARF CONSTRUCTION EQUIPMENT																		
PILING																		
PICKUP TRUCKS	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MISC JOB EQUIPMENT																		
REG SRVC TRUCK, W/EQUIPMENT	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TRAILERS	NA	NA	0				0											
PICKUP TRUCKS	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6- cars		gasoline	0.17/3	6	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6- trucks		gasoline	0.17/3	6	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WICK DRAIN INSTALLATION																		
PICKUP TRUCKS	350	gas	4	1	50	212	10600	0.0088	0.0043	0.0699	0.0002	0.0001	0.0001	0.0001	3.9892	0.0001	0.0001	0.0002
3- cars		gasoline	0.17/3	3	20/50	229	25811	0.0274	0.0147	0.2915	0.0010	0.0006	0.0007	0.0007	22.0697	0.0006	0.0003	0.0006
3- trucks		gasoline	0.17/3	3	20/50	229	25811	0.0641	0.0313	0.5103	0.0014	0.0009	0.0010	0.0010	29.1407	0.0010	0.0008	0.0018
ROAD CONSTRUCTION EQUIPMENT																		
DUMP TRUCKS	550	diesel	10	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- cars		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- trucks		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
RAIL CONSTRUCTION EQUIPMENT																		
18 WHEELER	300	diesel	10	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- cars		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- trucks		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UTILITY INFRASTRUCTURE EQUIPMENT																		
DUMP TRUCKS	550	diesel	10	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3- cars		gasoline	0.17/3	3	20/50	0	0											
3- trucks		gasoline	0.17/3	3	20/50	0	0											
TERMINAL/FACILITIES EQUIPMENT																		
18 WHEEL WITH FLATBED	NA	NA	0	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8- cars		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8- trucks		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DELIVERY VEHICLES																		
DUMP TRUCKS	NA	NA	0	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18 WHEEL WITH FLATBED	400	diesel	7.5	15	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WATER TRUCK	NA	NA	0	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BUS			0	1	10	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EMPLOYEE VEHICLES	350	gas	5.1	30	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
							Totals	**1.85022**	**0.53226**	**7.60787**	**0.02608**	**0.06355**	**0.0662354**	**0.06624**	**618.223**	**0.02852**	**0.01093**	**0.051**

Proposed Project Alternative - On-Road Construction Equipment Emissions 2018

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Number of Vehicles per Day	Daily Travel Per Vehicle	Number of Travel Days per year	Annual Vehicle Miles Traveled	Air Contaminant Emissions (tons per year)										
		Primary Engine						NO_x	VOC	CO	SO_2	$PM_{2.5}$	PM_{10}	PM	CO_2	CH_4	N_2O	HAPs
DREDGING EQUIPMENT																		
BUCKET DREDGE																		
MEDIUM DUTY TRUCK	250	diesel	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BUS (CREW)	210	diesel	2	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SUPERINTENDENT (Truck)		gasoline	3	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINTENANCE DREDGING EQUIPMENT (MECH)																		
MEDIUM DUTY TRUCK	250	diesel	4	1	50	41	2068	0.0100	0.0021	0.0070	0.0000	0.0005	0.0005	0.0005	1.1081	0.0001	0.0000	0.0004
BUS	210	diesel	3	1	10	83	827.1605	0.0095	0.0008	0.0037	0.0000	0.0005	0.0005	0.0005	0.8021	0.0001	0.0000	0.0003
SUPERINTENDENT (Truck)		gasoline	3	1	50	9	443	0.0004	0.0002	0.0029	0.0000	0.0000	0.0000	0.0000	0.1668	0.0000	0.0000	0.0000
FILL EQUIPMENT																		
18 WHEEL WITH FLATBED	335	diesel	4	1	160	274	43840	0.4307	0.0338	0.1393	0.0022	0.0227	0.0234	0.0234	72.0100	0.0046	0.0003	0.0088
DUMP TRUCKS	550	diesel	32	4	50	274	13700	0.2605	0.0393	0.1082	0.0016	0.0128	0.0132	0.0132	51.2789	0.0059	0.0003	0.0107
1500 GLN WATER TRUCK, 4×2	410	gas	10	1	50	274	13700	0.0580	0.0245	0.3183	0.0005	0.0001	0.0001	0.0001	11.1572	0.0004	0.0004	0.0019
2- 7 passenger van		gasoline	0.17/3	2	20/50	293	4243	0.0083	0.0038	0.0594	0.0001	0.0001	0.0001	0.0001	3.1873	0.0001	0.0001	0.0002
8- cars		gasoline	0.17/3	8	20/50	293	16971	0.0481	0.0257	0.5112	0.0018	0.0011	0.0012	0.0012	38.6975	0.0010	0.0006	0.0011
8- trucks		gasoline	0.17/3	8	20/50	293	16971	0.1124	0.0550	0.8948	0.0024	0.0015	0.0017	0.0017	51.0960	0.0017	0.0014	0.0031
WHARF CONSTRUCTION EQUIPMENT																		
PILING																		
PICKUP TRUCKS	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MISC JOB EQUIPMENT																		
REG SRVC TRUCK, W/EQUIPMENT	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TRAILERS	NA	NA	0				0											
PICKUP TRUCKS	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6- cars		gasoline	0.17/3	6	20/50	0	13011	0.0277	0.0148	0.2939	0.0010	0.0007	0.0007	0.0007	22.2511	0.0006	0.0003	0.0006
6- trucks		gasoline	0.17/3	6	20/50	0	13011	0.0646	0.0316	0.5145	0.0014	0.0009	0.0010	0.0010	29.3802	0.0010	0.0008	0.0018
WICK DRAIN INSTALLATION																		
PICKUP TRUCKS	350	gas	4	1	50	274	13700	0.0113	0.0055	0.0903	0.0002	0.0002	0.0002	0.0002	5.1558	0.0002	0.0001	0.0003
3- cars		gasoline	0.17/3	3	20/50	293	6364	0.0068	0.0036	0.0719	0.0003	0.0002	0.0002	0.0002	5.4418	0.0001	0.0001	0.0002
3- trucks		gasoline	0.17/3	3	20/50	293	6364	0.0158	0.0077	0.1258	0.0003	0.0002	0.0002	0.0002	7.1854	0.0002	0.0002	0.0004
ROAD CONSTRUCTION EQUIPMENT																		
DUMP TRUCKS	550	diesel	10	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- cars		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- trucks		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
RAIL CONSTRUCTION EQUIPMENT																		
18 WHEELER	300	diesel	10	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- cars		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- trucks		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UTILITY INFRASTRUCTURE EQUIPMENT																		
DUMP TRUCKS	550	diesel	10	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3- cars		gasoline	0.17/3	3	20/50	0	0											
3- trucks		gasoline	0.17/3	3	20/50	0	0											
TERMINAL/FACILITIES EQUIPMENT																		
18 WHEEL WITH FLATBED	NA	NA	0	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8- cars		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8- trucks		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DELIVERY VEHICLES																		
DUMP TRUCKS	NA	NA	0	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18 WHEEL WITH FLATBED	400	diesel	7.5	15	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
WATER TRUCK	NA	NA	0	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BUS			0	1	10	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EMPLOYEE VEHICLES	350	gas	5.1	30	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
							Totals	**1.06401**	**0.24848**	**3.14126**	**0.01192**	**0.04139**	**0.0429426**	**0.04294**	**298.918**	**0.01617**	**0.00459**	**0.03**

Proposed Project Alternative - On-Road Construction Equipment Emissions 2019

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Number of Vehicles per Day	Daily Travel Per Vehicle	Number of Travel Days per year	Annual Vehicle Miles Traveled	Air Contaminant Emissions (tons per year)										
		Primary Engine						NO_x	VOC	CO	SO_2	$PM_{2.5}$	PM_{10}	PM	CO_2	CH_4	N_2O	HAPs
DREDGING EQUIPMENT																		
BUCKET DREDGE																		
MEDIUM DUTY TRUCK	250	diesel	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BUS (CREW)	210	diesel	2	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SUPERINTENDENT (Truck)		gasoline	3	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINTENANCE DREDGING EQUIPMENT (MECH)																		
MEDIUM DUTY TRUCK	250	diesel	4	1	50	65	3268	0.0032	0.0015	0.0110	0.0001	0.0000	0.0000	0.0000	1.2275	0.0000	0.0000	0.0001
BUS	210	diesel	3	1	10	131	1307.16	0.0150	0.0013	0.0058	0.0000	0.0007	0.0007	0.0007	1.2675	0.0001	0.0000	0.0004
SUPERINTENDENT (Truck)		gasoline	3	1	50	9	443	0.0004	0.0002	0.0029	0.0000	0.0000	0.0000	0.0000	0.1668	0.0000	0.0000	0.0000
FILL EQUIPMENT																		
18 WHEEL WITH FLATBED	335	diesel	4	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DUMP TRUCKS	550	diesel	32	4	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1500 GLN WATER TRUCK, 4×2	410	gas	10	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2- 7 passenger van		gasoline	0.17/3	2	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8- cars		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8- trucks		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WHARF CONSTRUCTION EQUIPMENT																		
PILING																		
PICKUP TRUCKS	350	gas	4	1	50	92	4600	0.0038	0.0019	0.0303	0.0001	0.0001	0.0001	0.0001	1.7312	0.0001	0.0000	0.0001
MISC JOB EQUIPMENT																		
REG SRVC TRUCK, W/EQUIPMENT	350	gas	4	1	50	92	4600	0.0045	0.0021	0.0322	0.0001	0.0001	0.0001	0.0001	1.7278	0.0001	0.0001	0.0001
TRAILERS	NA	NA	0				0											
PICKUP TRUCKS	350	gas	4	1	50	92	4600	0.0038	0.0019	0.0303	0.0001	0.0001	0.0001	0.0001	1.7312	0.0001	0.0000	0.0001
6- cars		gasoline	0.17/3	6	20/50	96	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6- trucks		gasoline	0.17/3	6	20/50	96	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WICK DRAIN INSTALLATION																		
PICKUP TRUCKS	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3- cars		gasoline	0.17/3	3	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3- trucks		gasoline	0.17/3	3	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ROAD CONSTRUCTION EQUIPMENT																		
DUMP TRUCKS	550	diesel	10	1	50	182	9100	0.0385	0.0163	0.0180	0.0003	0.0001	0.0001	0.0001	7.4110	0.0003	0.0002	0.0012
5- cars		gasoline	0.17/3	5	20/50	99	32411	0.0574	0.0307	0.6101	0.0022	0.0014	0.0015	0.0015	46.1884	0.0013	0.0007	0.0013
5- trucks		gasoline	0.17/3	5	20/50	99	32411	0.1341	0.0656	1.0680	0.0028	0.0018	0.0020	0.0020	60.9870	0.0020	0.0017	0.0037
RAIL CONSTRUCTION EQUIPMENT																		
18 WHEELER	300	diesel	10	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5- cars		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- trucks		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UTILITY INFRASTRUCTURE EQUIPMENT																		
DUMP TRUCKS	550	diesel	10	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3- cars		gasoline	0.17/3	3	20/50	0	0											
3- trucks		gasoline	0.17/3	3	20/50	0	0											
TERMINAL/FACILITIES EQUIPMENT																		
18 WHEEL WITH FLATBED	NA	NA	0	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8- cars		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8- trucks		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DELIVERY VEHICLES																		
DUMP TRUCKS	NA	NA	0	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18 WHEEL WITH FLATBED	400	diesel	7.5	15	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
WATER TRUCK	NA	NA	0	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BUS			0	1	10	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EMPLOYEE VEHICLES	350	gas	5.1	30	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
							Totals	**0.26073**	**0.12131**	**1.80871**	**0.0057**	**0.00419**	**0.0045134**	**0.00451**	**122.438**	**0.00388**	**0.00278**	**0.007**

Proposed Project Alternative - On-Road Construction Equipment Emissions 2020

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Number of Vehicles per Day	Daily Travel Per Vehicle	Number of Travel Days per year	Annual Vehicle Miles Traveled	Air Contaminant Emissions (tons per year)										
		Primary Engine						NO_x	VOC	CO	SO_2	$PM_{2.5}$	PM_{10}	PM	CO_2	CH_4	N_2O	HAPs
DREDGING EQUIPMENT																		
BUCKET DREDGE																		
MEDIUM DUTY TRUCK	250	diesel	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BUS (CREW)	210	diesel	2	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SUPERINTENDENT (Truck)		gasoline	3	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINTENANCE DREDGING EQUIPMENT (MECH)																		
MEDIUM DUTY TRUCK	250	diesel	4	1	50	42	2118	0.0021	0.0010	0.0072	0.0000	0.0000	0.0000	0.0000	0.7955	0.0000	0.0000	0.0001
BUS	210	diesel	3	1	10	28	282.3868	0.0032	0.0003	0.0013	0.0000	0.0002	0.0002	0.0002	0.2738	0.0000	0.0000	0.0001
SUPERINTENDENT (Truck)		gasoline	3	1	50	6	295	0.0002	0.0001	0.0019	0.0000	0.0000	0.0000	0.0000	0.1112	0.0000	0.0000	0.0000
FILL EQUIPMENT																		
18 WHEEL WITH FLATBED	335	diesel	4	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DUMP TRUCKS	550	diesel	32	4	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1500 GLN WATER TRUCK, 4×2	410	gas	10	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2- 7 passenger van		gasoline	0.17/3	2	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8- cars		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8- trucks		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WHARF CONSTRUCTION EQUIPMENT																		
PILING																		
PICKUP TRUCKS	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MISC JOB EQUIPMENT																		
REG SRVC TRUCK, W/EQUIPMENT	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TRAILERS	NA	NA	0				0											
PICKUP TRUCKS	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6- cars		gasoline	0.17/3	6	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6- trucks		gasoline	0.17/3	6	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WICK DRAIN INSTALLATION																		
PICKUP TRUCKS	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3- cars		gasoline	0.17/3	3	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3- trucks		gasoline	0.17/3	3	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ROAD CONSTRUCTION EQUIPMENT																		
DUMP TRUCKS	550	diesel	10	1	50	608	30400	0.1286	0.0543	0.0600	0.0012	0.0003	0.0003	0.0003	24.7577	0.0009	0.0008	0.0041
5- cars		gasoline	0.17/3	5	20/50	327	14261	0.0253	0.0135	0.2684	0.0009	0.0006	0.0006	0.0006	20.3229	0.0006	0.0003	0.0006
5- trucks		gasoline	0.17/3	5	20/50	327	14261	0.0590	0.0289	0.4699	0.0013	0.0008	0.0009	0.0009	26.8343	0.0009	0.0007	0.0016
RAIL CONSTRUCTION EQUIPMENT																		
18 WHEELER	300	diesel	10	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5- cars		gasoline	0.17/3	5	20/50	32	3654	0.0065	0.0035	0.0688	0.0002	0.0002	0.0002	0.0002	5.2067	0.0001	0.0001	0.0002
5- trucks		gasoline	0.17/3	5	20/50	32	3654	0.0151	0.0074	0.1204	0.0003	0.0002	0.0002	0.0002	6.8749	0.0002	0.0002	0.0004
UTILITY INFRASTRUCTURE EQUIPMENT																		
DUMP TRUCKS	550	diesel	10	1	50	30	1500	0.0063	0.0027	0.0030	0.0001	0.0000	0.0000	0.0000	1.2216	0.0000	0.0000	0.0002
3- cars		gasoline	0.17/3	3	20/50	33	4314											
3- trucks		gasoline	0.17/3	3	20/50	33	4314											
TERMINAL/FACILITIES EQUIPMENT																		
18 WHEEL WITH FLATBED	NA	NA	0	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8- cars		gasoline	0.17/3	8	20/50	0	23006	0.0652	0.0349	0.6929	0.0024	0.0015	0.0017	0.0017	52.4566	0.0014	0.0008	0.0015
8- trucks		gasoline	0.17/3	8	20/50	0	23006	0.1523	0.0745	1.2130	0.0032	0.0021	0.0023	0.0023	69.2634	0.0023	0.0019	0.0042
DELIVERY VEHICLES																		
DUMP TRUCKS	NA	NA	0	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18 WHEEL WITH FLATBED	400	diesel	7.5	15	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
WATER TRUCK	NA	NA	0	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BUS			0	1	10	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EMPLOYEE VEHICLES	350	gas	5.1	30	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
							Totals	**0.46392**	**0.22097**	**2.90678**	**0.00971**	**0.00585**	**0.0063498**	**0.00635**	**208.119**	**0.00656**	**0.00483**	**0.013**

Proposed Project Alternative - On-Road Construction Equipment Emissions 2021

Equipment Type	Engine Horsepower	Type of fuel	Hours/ Day	Number of Vehicles per Day	Daily Travel Per Vehicle	Number of Travel Days per year	Annual Vehicle Miles Traveled	Air Contaminant Emissions (tons per year)										
		Primary Engine						NO_x	VOC	CO	SO_2	$PM_{2.5}$	PM_{10}	PM	CO_2	CH_4	N_2O	HAPs
DREDGING EQUIPMENT																		
BUCKET DREDGE																		
MEDIUM DUTY TRUCK	250	diesel	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BUS (CREW)	210	diesel	2	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
SUPERINTENDENT (Truck)		gasoline	3	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MAINTENANCE DREDGING EQUIPMENT (MECH)																		
MEDIUM DUTY TRUCK	250	diesel	4	1	50	40	2017.901	0.0020	0.0009	0.0068	0.0000	0.0000	0.0000	0.0000	0.7579	0.0000	0.0000	0.0001
BUS	210	diesel	3	1	10	27	269.0535	0.0031	0.0003	0.0012	0.0000	0.0001	0.0002	0.0002	0.2609	0.0000	0.0000	0.0001
SUPERINTENDENT (Truck)		gasoline	3	1	50	6	295	0.0002	0.0001	0.0019	0.0000	0.0000	0.0000	0.0000	0.1112	0.0000	0.0000	0.0000
FILL EQUIPMENT																		
18 WHEEL WITH FLATBED	335	diesel	4	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
DUMP TRUCKS	550	diesel	32	4	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1500 GLN WATER TRUCK, 4×2	410	gas	10	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2- 7 passenger van		gasoline	0.17/3	2	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8- cars		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
8- trucks		gasoline	0.17/3	8	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WHARF CONSTRUCTION EQUIPMENT																		
PILING																		
PICKUP TRUCKS	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
MISC JOB EQUIPMENT																		
REG SRVC TRUCK, W/EQUIPMENT	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
TRAILERS	NA	NA	0				0											
PICKUP TRUCKS	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6- cars		gasoline	0.17/3	6	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
6- trucks		gasoline	0.17/3	6	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
WICK DRAIN INSTALLATION																		
PICKUP TRUCKS	350	gas	4	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3- cars		gasoline	0.17/3	3	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3- trucks		gasoline	0.17/3	3	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ROAD CONSTRUCTION EQUIPMENT																		
DUMP TRUCKS	550	diesel	10	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- cars		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- trucks		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
RAIL CONSTRUCTION EQUIPMENT																		
18 WHEELER	300	diesel	10	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
5- cars		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5- trucks		gasoline	0.17/3	5	20/50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
UTILITY INFRASTRUCTURE EQUIPMENT																		
DUMP TRUCKS	550	diesel	10	1	50	15	750	0.0032	0.0013	0.0015	0.0000	0.0000	0.0000	0.0000	0.6108	0.0000	0.0000	0.0001
3- cars		gasoline	0.17/3	3	20/50	33	0											
3- trucks		gasoline	0.17/3	3	20/50	33	0											
TERMINAL/FACILITIES EQUIPMENT																		
18 WHEEL WITH FLATBED	NA	NA	0	1	160	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	
8- cars		gasoline	0.17/3	8	20/50	229	16971	0.0481	0.0257	0.5112	0.0018	0.0011	0.0012	0.0012	38.6975	0.0010	0.0006	0.0011
8- trucks		gasoline	0.17/3	8	20/50	229	16971	0.1124	0.0550	0.8948	0.0024	0.0015	0.0017	0.0017	51.0960	0.0017	0.0014	0.0031
DELIVERY VEHICLES																		
DUMP TRUCKS	NA	NA	0	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
18 WHEEL WITH FLATBED	400	diesel	7.5	15	160	212	33920	4.9987	0.3928	1.6172	0.0255	0.2632	0.2714	0.2714	835.7364	0.0540	0.0031	
WATER TRUCK	NA	NA	0	1	50	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
BUS			0	1	10	0	0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
EMPLOYEE VEHICLES	350	gas	5.1	30	50	212	10600	0.1127	0.0602	1.1972	0.0042	0.0027	0.0029	0.0029	90.6362	0.0025	0.0013	0.0026
							Totals	**5.28034**	**0.53634**	**4.23183**	**0.03397**	**0.26877**	**0.2773635**	**0.27736**	**1017.91**	**0.05924**	**0.00639**	**0.007**

ON-ROAD FREIGHT AND EMPLOYEE VEHICLE EMISSIONS
PORT OF GULFPORT EXPANSION PROJECT
GULFPORT, HARRISON COUNTY, MISSISSIPPI

No-Action Alternative

Equipment Type	Type of fuel	Projected Daily Vehicle Volume	Number of Vehicles per Year	Daily Travel Per Vehicle*	Annual Vehicle Miles Traveled	Air Contaminant Emissions (tons per year)											
						NO_x	CO	PM_{10}	$PM_{2.5}$	VOC	SO_2	PM	CO_2	CH_4	N_2O	CO2e	HAPs
2020																	
Combination Long-haul Truck	Diesel	508	132,080	160	21,132,800	101.84	28.97	4.30	4.17	7.88	0.66	4.30	69,139	2.63	0.13	69,234	0.80
Passenger Car	Gasoline	1662	432,151	50	21,607,560	3.74	71.90	0.19	0.18	2.51	0.25	0.19	11,435	0.14	0.07	11,458	0.05
Single Unit Short-Haul Truck	Gasoline	525	136,469	50	6,823,440	28.90	154.76	0.06	0.06	11.60	0.25	0.06	11,565	0.16	0.12	11,605	0.49
					Totals	**134.48**	**255.63**	**4.55**	**4.40**	**21.98**	**1.16**	**4.55**	**92,138**	**2.93**	**0.31**	**92,296**	**1.35**
2060																	
Combination Long-haul Truck	Diesel	1235	321,100	160	51,376,000	123.72	35.11	2.84	2.76	9.90	1.57	2.84	168,084	6.43	0.31	168,316	1.14
Passenger Car	Gasoline	6063	1,576,255	50	78,812,760	6.65	209.59	0.68	0.63	6.92	0.24	0.68	36,919	0.42	0.23	36,999	0.11
Single Unit Short-Haul Truck	Gasoline	1914	497,765	50	24,888,240	90.24	473.50	0.21	0.19	37.84	0.27	0.21	42,188	0.11	0.25	42,266	1.54
					Totals	**220.61**	**718.20**	**3.73**	**3.57**	**54.66**	**2.08**	**3.73**	**247,190**	**6.97**	**0.79**	**247,581**	**2.79**

Proposed Project Alternative

Equipment Type	Type of fuel	Number of Vehicles per Year	Number of Vehicles per Year	Daily Travel Per Vehicle	Annual Vehicle Miles Traveled	Air Contaminant Emissions (tons per year)											
						NO_x	CO	PM_{10}	$PM_{2.5}$	VOC	SO_2	PM	CO_2	CH_4	N_2O	CO2e	HAPs
2020																	
Combination Long-haul Truck	Diesel	861	223,860	160	35,817,600	172.60	49.11	7.28	7.07	13.35	1.12	7.28	117,182	4.46	0.22	117,343	1.35
Passenger Car	Gasoline	2817	732,503	50	36,625,160	6.34	121.87	0.33	0.30	4.25	0.42	0.33	19,382	0.23	0.11	19,421	0.09
Single Unit Short-Haul Truck	Gasoline	890	231,317	50	11,565,840	48.99	262.31	0.10	0.10	19.65	0.43	0.10	19,603	0.27	0.20	19,670	0.84
					Totals	**227.94**	**433.29**	**7.71**	**7.46**	**37.26**	**1.97**	**7.71**	**156,167**	**4.96**	**0.53**	**156,434**	**2.28**
2060																	
Combination Long-haul Truck	Diesel	2030	527,800	160	84,448,000	203.36	57.71	4.67	4.53	16.27	2.58	4.67	276,284	10.57	0.51	276,665	1.87
Passenger Car	Gasoline	9965	2,590,931	50	129,546,560	10.94	344.51	1.12	1.03	11.37	0.39	1.12	60,684	0.70	0.38	60,816	0.18
Single Unit Short-Haul Truck	Gasoline	3147	818,189	50	40,909,440	148.32	778.31	0.34	0.31	62.20	0.45	0.34	69,345	0.19	0.40	69,474	2.54
					Totals	**362.63**	**1180.53**	**6.13**	**5.88**	**89.85**	**3.42**	**6.13**	**406,313**	**11.45**	**1.29**	**406,954**	**4.59**

* Assumes Port operates 5 days per week.

EMISSION FACTORS FOR DAILY COMMUTE AND DELIVERY VEHICLES - 2020

			Emission Factor[1] (g/mile)										
Year	**Type of Vehicle**	**SourceType ID**	**NO_x**	**VOC**	**CO**	**SO_2**	**$PM_{2.5}$**	**PM_{10}**	**PM**	**CO_2**	**CH_4**	**N_2O**	**HAPs**
2020	Passenger Car	21	0.157129	0.105387	3.018532	0.010479	0.0075	0.0081	0.0081	480.08	0.0057	0.0028	0.0022
2020	Passenger Truck	31	0.4632	0.21488	4.555511	0.013361	0.0100	0.0109	0.0109	612.08	0.0072	0.0055	0.0067
2020	Single Unit Short-haul Truck	52	3.842687	1.541566	20.57477	0.033564	0.0075	0.0082	0.0082	1537.61	0.0213	0.0154	0.0658
2020	Combination Long-haul Truck	62	4.371616	0.338246	1.243783	0.028359	0.1790	0.1845	0.1845	2967.95	0.1130	0.0055	0.0343

Key:
1. Emission factors derived from EPA's mobile source emission model, MOVES2010b.

EMISSION FACTORS FOR DAILY COMMUTE AND DELIVERY VEHICLES - 2050

			Emission Factor[1] (g/mile)										
Year	**Type of Vehicle**	**SourceType ID**	**NO_x**	**VOC**	**CO**	**SO_2**	**$PM_{2.5}$**	**PM_{10}**	**PM**	**CO_2**	**CH_4**	**N_2O**	**HAPs**
2050	Passenger Car	21	0.0766	0.079648	2.412541	0.002765	0.0072	0.0078	0.0078	424.96	0.0049	0.0026	0.0013
2050	Passenger Truck	31	0.262652	0.126532	3.262481	0.003454	0.0095	0.0103	0.0103	530.75	0.0048	0.0032	0.0034
2050	Single Unit Short-haul Truck	52	3.289127	1.379411	17.25928	0.010007	0.0070	0.0076	0.0076	1537.74	0.0042	0.0089	0.0563
2050	Combination Long-haul Truck	62	2.184623	0.174817	0.61991	0.027696	0.048664	0.050168	0.050168	2967.97	0.113513	0.005504	0.0201

Key:
1. Emission factors derived from EPA's mobile source emission model, MOVES2010b.

PROJECTED LINE HAUL LOCOMOTIVE ACTIVITY
PORT OF GULFPORT EXPANSION PROJECT
GULFPORT, HARRISON COUNTY MISSISSIPPI

Assumptions:

Workdays per Year	250	
Containers per Railcar	4	
Containers per Train	148	
Railcars per Train (US 90 to Gulfport Rail Yard)	37	
Railcars per Train (North of Gulfport Rail Yard)	60	
One-way Distance (US 90 to Gulfport Rail Yard)	1.7	miles
One-way Distance (North of Gulfport Rail Yard to O'Neal Road)	5.6	miles

No Action Alternative

	2020		2060	
	Inbound	**Outbound**	**Inbound**	**Outbound**
Rail Cars per Weekday	72	72	525	525
Trains per Week Day (US 90 to Gulfport Rail Yard)	1.9	1.9	14.2	14.2
Trains per Week Day (North of Gulfport Rail Yard)	1.2	1.2	8.8	8.8
Trains per Year (US 90 to Gulfport Rail Yard)	475	475	3550	3550
Trains per Year (North of Gulfport Rail Yard)	300	300	2200	2200
Trains per Year	775	775	5750	5750
Locomotives per Train	4	4	4	4

Proposed Project Alternative - Port Expansion

	2020		2060	
	Inbound	**Outbound**	**Inbound**	**Outbound**
Rail Cars per Weekday	122	122	865	865
Trains per Week Day (US 90 to Gulfport Rail Yard)	3.3	3.3	23.4	23.4
Trains per Week Day (North of Gulfport Rail Yard)	2.0	2.0	14.4	14.4
Trains per Year (US 90 to Gulfport Rail Yard)	825	825	5850	5850
Trains per Year (North of Gulfport Rail Yard)	500	500	3600	3600
Trains per Year	1325	1325	9450	9450
Locomotives per Train	4	4	4	4

LINE-HAUL LOCOMOTIVE EMISSION ESTIMATES
PORT OF GULFPORT EXPANSION PROJECT
GULFPORT, HARRISON COUNTY MISSISSIPPI

Air Emission Factors, grams per horsepower-hour

Tier	MY	Date	HC	VOC	CO	NOx	PM10	PM2.5	SO2	CO2	CH4	NO2
Tier 0	1973 - 1992	2010	0.30	0.32	1.28	7.20	0.20	0.19	0.0049	487	0.013	0.04
Tier 1	1993 - 2004	2010	0.29	0.31	1.28	6.70	0.20	0.19	0.0049	487	0.013	0.04
Tier 2	2005 - 2011	2013	0.13	0.14	1.28	4.95	0.08	0.08	0.0049	487	0.013	0.04
Tier 3	2012 - 2014	2012	0.13	0.14	1.28	4.95	0.08	0.08	0.0049	487	0.013	0.04
Tier 4	2015 or Later	2015	0.04	0.04	1.28	1.00	0.015	0.01	0.0049	487	0.013	0.04
Surrogate	2015 or Later	2020	0.22	0.23	1.28	6.06	0.14	0.14	0.0049	483	0.013	0.04

Ref: "Current Methodologies in Preparing Mobile Source Port-Related Emissions Inventories", Tables 5-8 and 5-9, U.S. Environmental Protection Agency, April 2009.
Surrogate emission factors were used for estimating 2020 air emissions.
Tier 4 emission factors were used for estimating 2060 air emissions.

No Action Alternative - US 90 to Gulfport Rail Yard

	Engine Tier	Engine Horsepower	Number of Locomotives	Horsepower in Use (Total)	Trains per Year - Inbound	Trains per Year - Outbound	Hours per One-way Trip	Engine Load Factor %
2020	3	4000	4	16000	475	475	0.17	0.28
2060	4	4000	4	16000	3550	3550	0.17	0.28

* Without more specific data, the average line-haul locomotive load factor was taken from "Current Methodologies in Preparing Mobile Source Port-Related Emissions Inventories", Tables 5-2, U.S. Environmental Protection Agency, April 2009.

No Action Alternative - North of Gulfport Rail Yard

	Engine Tier	Engine Horsepower	Number of Locomotives	Horsepower in Use (Total)	Trains per Year - Inbound	Trains per Year - Outbound	Hours per One-way Trip	Engine Load Factor %
2020	3	4000	4	16000	300	300	0.31	0.28
2060	4	4000	4	16000	2200	2200	0.31	0.28

Estimated Air Emissions, tons per year - US 90 to Gulfport Rail Yard

	HC	VOC	CO	NOx	PM10	PM2.5	SO2	CO2	CH4	NO2	CO2e
2020	0.18	0.18	1.02	4.83	0.11	0.11	0.004	385	0.01	0.03	395
2060	0.24	0.25	7.63	5.96	0.09	0.09	0.03	2,903	0.08	0.24	2,976

Estimated Air Emissions, tons per year - North of Gulfport Rail Yard

	HC	VOC	CO	NOx	PM10	PM2.5	SO2	CO2	CH4	NO2	CO2e
2020	0.20	0.21	1.18	5.57	0.13	0.12	0.005	444	0.01	0.04	455
2060	0.27	0.28	8.62	6.74	0.10	0.10	0.03	3,280	0.09	0.27	3,363

Proposed Project Alternative - Port Expansion - US 90 to Gulfport Rail Yard

	Engine Tier	Engine Horsepower	Number of Locomotives	Horsepower in Use (Total)	Trains per Year - Inbound	Trains per Year - Outbound	Hours per One-way Trip	Engine Load Factor %
2020	3	4000	4	16000	825	825	0.17	0.28
2060	4	4000	4	16000	5850	5850	0.17	0.28

Proposed Project Alternative - Port Expansion - North of Gulfport Rail Yard

	Engine Tier	Engine Horsepower	Number of Locomotives	Horsepower in Use (Total)	Trains per Year - Inbound	Trains per Year - Outbound	Hours per One-way Trip	Engine Load Factor %
2020	3	4000	4	16000	500	500	0.31	0.28
2060	4	4000	4	16000	3600	3600	0.31	0.28

Estimated Air Emissions, tons per year - US 90 to Gulfport Rail Yard

	HC	VOC	CO	NOx	PM10	PM2.5	SO2	CO2	CH4	NO2	CO2e
2020	0.30	0.32	1.77	8.39	0.19	0.19	0.01	669	0.02	0.06	686
2060	0.39	0.41	12.57	9.82	0.15	0.14	0.05	4,784	0.13	0.39	4,904

Estimated Air Emissions, tons per year - North of Gulfport Rail Yard

	HC	VOC	CO	NOx	PM10	PM2.5	SO2	CO2	CH4	NO2	CO2e
2020	0.34	0.35	1.96	9.28	0.21	0.21	0.01	739	0.02	0.06	758
2060	0.44	0.46	14.11	11.02	0.17	0.16	0.05	5,368	0.14	0.44	5,503

SUMMARY OF EMISSIONS - CONTAINER VESSEL EMISSIONS INCREASE
NO ACTION ALTERNATIVE - 2020
PORT OF GULFPORT EXPANSION PROJECT
GULFPORT, HARRISON COUNTY MISSISSIPPI

Diesel Engines - Main Propulsion and Auxiliary Power Engines

Mode	Max HP [1]	Load [1] Factor	HP	Hr/Call (average)	NOx		CO		PM10		PM2.5		VOC		SO2		CO2		CH4		N2O		CO_2e		HAPs	
					g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call
Diesel (MDO)																										
Cruise/ RSZ / Maneuvering																										
Cruise (FNC Entrance to RSZ)	41,438	0.83	34,393	0.6	11.28	215,900	1.04	19,978	0.14	2,701	0.13	2,485	0.45	8,562	0.27	5,161	439	8.4E+06	0.0045	86	0.023	443	446	8.5E+06	0.068	1,303
Reduced Speed Zone - Incoming	41,438	0.10	4,112	2.3	11.28	108,847	1.04	10,072	0.14	1,362	0.13	1,253	0.45	4,316	0.27	2,602	439	4.2E+06	0.0045	43	0.023	223	446	4.3E+06	0.068	657
Maneuvering - Inbound	41,438	0.03	1,410	0.5	11.28	7,956	1.04	736	0.14	100	0.13	92	0.45	316	0.27	190	439	3.1E+05	0.0045	3	0.023	16	446	3.1E+05	0.068	48
Loading/Hotelling	41,438	-	-	23.0	11.28	-	1.04	-	0.14	-	0.13	-	0.45	-	0.27	-	439	0.0E+00	0.0045	-	0.023	-	446	0.0E+00	0.068	-
Maneuvering - Outgoing	41,438	0.05	2,105	0.5	11.28	11,876	1.04	1,099	0.14	149	0.13	137	0.45	471	0.27	284	439	4.6E+05	0.0045	5	0.023	24	446	4.7E+05	0.068	72
Reduced Speed Zone - Outbound	41,438	0.10	4,112	2.3	11.28	108,847	1.04	10,072	0.14	1,362	0.13	1,253	0.45	4,316	0.27	2,602	439	4.2E+06	0.0045	43	0.023	223	446	4.3E+06	0.068	657
Cruise (RSZ to FNC Entrance)	41,438	0.83	34,393	0.6	11.28	215,900	1.04	19,978	0.14	2,701	0.13	2,485	0.45	8,562	0.27	5,161	439	8.4E+06	0.0045	86	0.023	443	446	8.5E+06	0.068	1,303
Cruise/ RSZ /Hotelling/ Maneuvering Total				29.8		669,326		61,934		8,373		7,703		26,543		16,000		2.6E+07		266		1,372.4		2.6E+07		4,039.8
Auxiliary Engines (MGO) [2]																										
Cruise/ RSZ / Maneuvering																										
Cruise (9 nautical mile CZB to RSZ)	9,116	0.13	1,185	1.0	9.23	10,933	0.82	972	0.13	159	0.13	150	3.0E-01	354	0.31	371	515	6.1E+05	3.0E-03	4	2.3E-02	27	522	6.2E+05	0.068	81
Reduced Speed Zone - Incoming	9,116	0.25	2,279	2.9	9.23	61,662	0.82	5,483	0.13	897	0.13	847	3.0E-01	1,994	0.31	2,093	515	3.4E+06	3.0E-03	20	2.3E-02	155	522	3.5E+06	0.068	455
Maneuvering - Incoming	9,116	0.48	4,376	0.5	9.23	20,184	0.82	1,795	0.13	294	0.13	277	3.0E-01	653	0.31	685	515	1.1E+06	3.0E-03	7	2.3E-02	51	522	1.1E+06	0.068	149
Loading/Hotelling	9,116	0.19	1,732	23.0	9.23	367,515	0.82	32,679	0.13	5,347	0.13	5,050	3.0E-01	11,883	0.31	12,477	515	2.1E+07	3.0E-03	119	2.3E-02	922	522	2.1E+07	0.068	2,713
Maneuvering - Outgoing	9,116	0.48	4,376	0.5	9.23	20,184	0.82	1,795	0.13	294	0.13	277	3.0E-01	653	0.31	685	515	1.1E+06	3.0E-03	7	2.3E-02	51	522	1.1E+06	0.068	149
Reduced Speed Zone - Outgoing	9,116	0.25	2,279	2.9	9.23	61,662	0.82	5,483	0.13	897	0.13	847	3.0E-01	1,994	0.31	2,093	515	3.4E+06	3.0E-03	20	2.3E-02	155	522	3.5E+06	0.068	455
Cruise (RSZ to FNC Entrance)	9,116	0.13	1,185	1.0	9.23	10,933	0.82	972	0.13	159	0.13	150	3.0E-01	354	0.31	371	515	6.1E+05	3.0E-03	4	2.3E-02	27	522	6.2E+05	0.068	81
Cruise/ RSZ / Maneuvering Total				31.9		553,071		49,178		8,047		7,600		17,883		18,777		3.1E+07		179		1,387.0		3.1E+07		4,082.6
Auxiliary Boiler (MGO)																										
Maneuvering - Incoming	679	0.85	577	0.5	1.49	430	0.15	43	0.13	37	0.11	32	0.07	22	0.43	123	688	2.0E+05	0.001	0	0.060	17	707	2.0E+05	0.068	20
Loading/Hotelling	679	0.85	577	23.0	1.49	19,785	0.15	1,978	0.13	1,682	0.11	1,484	0.07	989	0.43	5,639	688	9.1E+06	0.001	20	0.060	792	707	9.4E+06	0.068	903
Maneuvering - Outgoing	679	0.85	577	0.5	1.49	430	0.15	43	0.13	37	0.11	32	0.07	22	0.43	123	688	2.0E+05	0.001	0	0.060	17	707	2.0E+05	0.068	20
Auxiliary Boiler Total				24.0		20,645		2,065		1,755		1,548		1,032		5,884		9.5E+06		21		826		9.8E+06		943

Assist Activity	Miles	Speed (kn	Time (Hours)
Cruise (FNC Entrance to RSZ)	13	20.3	0.6
Reduced Speed Zone	27	10	2.3
Maneuver (Inbound)	0	7	0.5
Offload/Hotel/Load	0	0	23.0
Maneuver (Outbound)	0	8	0.5
Reduced Speed Zone	27	10	2.3
Cruise (RSZ to FNC Entrance)	13	20.3	0.6
Total			**29.8**

Fuel	% Calls	Mode	Calls/Year	Emissions (Tons Per Year)										
				NOx	CO	PM10	PM2.5	VOC	SO2	CO2	CH4	N2O	CO_2e	HAPs
MDO	100%	Diesel Engine	**192**	141.53	13.10	1.77	1.63	5.61	3.38	5,508	0.06	0.29	5,599	0.85
MGO	100%	Auxiliary Engines	**192**	116.95	10.399	1.70	1.61	3.78	3.97	6,529	0.04	0.29	6,621.14	0.86
MGO	100%	Auxiliary Boiler	**192**	4.37	0.44	0.37	0.33	0.22	1.24	2,015	0.00	0.17	2,068.82	0.20
		Total		**262.84**	**23.93**	**3.84**	**3.56**	**9.61**	**8.60**	**14,052**	**0.10**	**0.76**	**14,289**	**1.92**
		Container Plus Tugboat Emissions Total		**335.26**	**42.15**	**5.78**	**5.44**	**11.61**	**8.65**	**19,151**	**0.76**	**0.91**	**19,448**	**2.59**

Marine Diesel Oil (0.10 % Sulfur)			Marine Gas Oil (0.10% Sulfur)		
Pollutant	g/kw-hr [3]	g/hp-hr	Pollutant	g/kw-hr [4]	g/hp-hr
NOx	15.13	11.28	NOx	12.37	9.23
CO	1.40	1.04	CO	1.10	0.82
PM_{10}	0.19	0.14	PM_{10}	0.18	0.13
$PM_{2.5}$	0.17	0.13	$PM_{2.5}$	0.17	0.13
VOC	0.60	0.45	VOC	0.40	0.30
SO_2	0.36	0.27	SO_2	0.42	0.31
CO_2	589	439	CO_2	691	515
CH_4	0.006	0.0045	CH_4	0.004	0.003
N_2O	0.031	0.023	N_2O	0.031	0.02

Auxiliary Boiler Emission Factors**		
Pollutant	g/kw-hr [5]	g/hp-hr
NOx	2.00	1.49
CO	0.20	0.15
PM_{10}	0.17	0.13
$PM_{2.5}$	0.15	0.11
VOC	0.10	0.07
SO_2	0.57	0.43
CO_2	923	688
CH_4	0.002	0.001
N_2O	0.080	0.06

** Steam Turbine Emission Factors
Marine Gas Oil (0.10% Sulfur)

HAP Emission Factors [6]		
HAP*	lb/MMBtu	g/HP-hr
Benzene	7.76E-04	8.96E-04
Toluene	2.81E-04	3.24E-04
Xylenes	1.93E-04	2.23E-04
Formaldehyd	7.89E-05	9.11E-05
Acetaldehyd	2.52E-05	2.91E-05
Acrolein	7.88E-06	9.09E-06
Naphthalene	1.30E-04	1.50E-04
Total PAH	2.12E-04	2.45E-04
Diesel-PM_{10}	5.73E-02	6.61E-02

*HAP = Hazardous Air Pollutant
PAH = Polycylic Aromatic Hydrocarbons

1. Horsepower rating and load factors for auxiliary engines are based on U. S. Environmental Protection Agency Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF International, April 2009, Tables 2-4 and 2-7.
2. Auxiliary Engine horsepower is assumed to be 22% of main propulsion engine based on U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 2-4.
3. U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Tables 2-9 & 2-13 (assumes Slow Speed Diesel (SSD) engine model year 2000 or later).
4. U. S. Environmental Protection Agency Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF International, April 2009 Tables 2-13 & 2-16
5. U. S. Environmental Protection Agency Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF International, April 2009 Tables 2-9 & 2-13 (emission factor for Steam Turbine).
6. Hazardous Air Pollutant (HAP) emission factors were totals from Tables 3.4-3 and 3.4-4; AP-42, Compilation of Emission Factors, U.S. Environmental Protection Agency, October 1996.

SUMMARY OF EMISSIONS - ASSIST TUGBOAT EMISSIONS
NO ACTION ALTERNATIVE - 2020
PORT OF GULFPORT EXPANSION PROJECT
GULFPORT, HARRISON COUNTY MISSISSIPPI

Diesel Engines - Main Propulsion and Auxiliary Power Engines

Mode	No. of Tugs	Engine /Tug	HP/ Engine [1]	Load Factor[2]	Hr/Call (average)	NOx		CO		PM_{10}		$PM_{2.5}$		VOC		SO_2		CO_2		CH_4		N_2O		CO_2e		HAPs	
						g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call
Main Engines																											
Cruise	-	2	2,065			7.3		1.9		0.19		0.19		0.20		0.005		515		0.07		0.01		521		0.07	
Reduced Speed Zone	2	2	2,065	0.79	2.9	7.3	139,879	1.9	35,683	0.19	3,683	0.19	3,572	0.20	3,854	0.005	93	515	9,848,590	0.07	1,286	0.01	286	521	9,964,148	0.07	1,303
Maneuvering	2	2	2,065	0.79	0.5	7.3	23,847	1.9	6,083	0.19	628	0.19	609	0.20	657	0.005	16	515	1,679,045	0.07	219	0.01	49	521	1,698,745	0.07	222
Maneuvering	2	2	2,065	0.79	0.5	7.3	23,847	1.9	6,083	0.19	628	0.19	609	0.20	657	0.005	16	515	1,679,045	0.07	219	0.01	49	521	1,698,745	0.07	222
Reduced Speed Zone	2	2	2,065	0.79	2.9	7.3	139,879	1.9	35,683	0.19	3,683	0.19	3,572	0.20	3,854	0.005	93	515	9,848,590	0.07	1,286	0.01	286	521	9,964,148	0.07	1,303
Loading/Hotelling		2	2,065			7.3		1.9		0.19		0.19		0.20		0.005		515		0.07		0.01		521		0.07	
Total					6.9		327,452		83,534		8,621		8,362		9,022		217		23,055,270		3,009		669		23,325,786		3,051
Auxiliary Engines																											
Cruise	-	2	134			7.3		1.3		0.26		0.25		0.20		0.00		515		0.07		0.01		521		0.07	
Reduced Speed Zone	2	2	134	0.56	2.9	7.3	6,438	1.3	1,117	0.26	226	0.25	219	0.20	177	0.00	4	515	453,300	0.07	59	0.01	13	521	458,619	0.07	60
Maneuvering	2	2	134	0.56	0.5	7.3	1,098	1.3	190	0.26	39	0.25	37	0.20	30	0.00	1	515	77,281	0.07	10	0.01	2	521	78,188	0.07	10
Maneuvering	2	2	134	0.56	0.5	7.3	1,098	1.3	190	0.26	39	0.25	37	0.20	30	0.00	1	515	77,281	0.07	10	0.01	2	521	78,188	0.07	10
Reduced Speed Zone	2	2	134	0.56	2.9	7.3	6,438	1.3	1,117	0.26	226	0.25	219	0.20	177	0.00	4	515	453,300	0.07	59	0.01	13	521	458,619	0.07	60
Loading/Hotelling		2	134			7.3		1.3		0.26		0.25		0.20		0.00		515		0.07		0.01		521		0.07	
Total					6.9		15,072		2,614		529		513		415		10		1,061,163		139		31		1,073,614		140

Assist Activity		Miles	Speed (knots)	Time (Hours)
	Cruise (FNC Entrance to RSZ)	13		
	Reduced Speed Zone	27	8	2.9
	Maneuver (Inbound)	0	0	0.5
	Offload/Hotel/Load	0	0	23.0
	Maneuver (Outbound)	0	0	0.5
	Reduced Speed Zone	27	8	2.9
	Cruise (RSZ to FNC Entrance)	13		
Total				**29.9**

Pollutant	Main Engines[3]		Auxiliary Engines[3]	
	g/kw-hr	g/hp-hr	g/kw-hr	g/hp-hr
NOx	9.8	7.3	9.8	7.31
CO	2.5	1.9	1.7	1.27
PM_{10}[4]	0.26	0.19	0.34	0.26
$PM_{2.5}$[5]	0.25	0.19	0.33	0.25
VOC	0.27	0.20	0.27	0.20
SO_2[4]	0.01	0.00	0.01	0.005
CO_2	690	515	690	515
CH_4	0.09	0.07	0.09	0.07
N_2O	0.02	0.01	0.02	0.01

Calls/Year	Mode	Emissions (Tons Per Year)										
		NOx	CO	PM_{10}	$PM_{2.5}$	VOC	SO_2	CO_2	CH_4	N_2O	CO_2e	HAPs
192	Main Engines	69.24	17.66	1.82	1.77	1.91	4.6E-02	4,875	6.4E-01	1.4E-01	4,932	6.5E-01
	Auxiliary Engines	3.19	0.55	0.11	0.11	0.09	2.1E-03	224	2.9E-02	6.5E-03	227	3.0E-02
	Total	**72.43**	**18.22**	**1.93**	**1.88**	**2.00**	**0.05**	**5,099**	**0.67**	**0.15**	**5,159**	**0.67**

HAP Emission Factors [6]

HAP*	lb/MMBtu	g/HP-hr
Benzene	7.76E-04	8.96E-04
Toluene	2.81E-04	3.24E-04
Xylenes	1.93E-04	2.23E-04
Formaldehyde	7.89E-05	9.11E-05
Acetaldehyde	2.52E-05	2.91E-05
Acrolein	7.88E-06	9.09E-06
Naphthalene	1.30E-04	1.50E-04
Total PAH	2.12E-04	2.45E-04
Diesel-PM_{10}	5.73E-02	6.61E-02

*HAP = Hazardous Air Pollutant
PAH = Polycylic Aromatic Hydrocarbons

1. Horsepower ratings are based on U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventori* es, ICF International, April 2009, Table 3-10.
2. Load factors are based on U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 3-3.
3. U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 3-8 (assumes the use of Category 1, Tier 1 engines built after 2000).
4. Corrected per U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 3-9 (assumes the use of only ULSD fuel).
5. $PM_{2.5}$ = 0.97 x PM_{10} per U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Page 3-9
6. *Hazardous Air Pollutant (HAP) emission factors were totals from Tables 3.4-3 and 3.4-4; AP-42, Compilation of Emission Factors, U.S. Environmental Protection Agency, October 1996.*

SUMMARY OF EMISSIONS - CONTAINER VESSEL EMISSIONS INCREASE
NO ACTION ALTERNATIVE - 2060
PORT OF GULFPORT EXPANSION PROJECT
GULFPORT, HARRISON COUNTY MISSISSIPPI

Diesel Engines - Main Propulsion and Auxiliary Power Engines

Mode	Max HP [1]	Load [1] Factor	HP	Hr/Call (average)	NOx		CO		PM10		PM2.5		VOC		SO2		CO2		CH4		N2O		CO_2e		HAPs	
					g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call
Diesel (MDO)																										
Cruise/ RSZ / Maneuvering																										
Cruise (FNC Entrance to RSZ)	41,438	0.83	34,393	0.6	7.55	144,532	1.04	19,978	0.14	2,701	0.13	2,485	0.45	8,562	0.27	5,161	439	8.4E+06	0.0045	86	0.023	443	446	8.5E+06	0.068	1,303
Reduced Speed Zone - Incoming	41,438	0.10	4,112	2.3	7.55	72,866	1.04	10,072	0.14	1,362	0.13	1,253	0.45	4,316	0.27	2,602	439	4.2E+06	0.0045	43	0.023	223	446	4.3E+06	0.068	657
Maneuvering - Inbound	41,438	0.03	1,410	0.5	7.55	5,326	1.04	736	0.14	100	0.13	92	0.45	316	0.27	190	439	3.1E+05	0.0045	3	0.023	16	446	3.1E+05	0.068	48
Loading/Hotelling	41,438	-	-	23.0	7.55	-	1.04	-	0.14	-	0.13	-	0.45	-	0.27	-	439	0.0E+00	0.0045	-	0.023	-	446	0.0E+00	0.068	-
Maneuvering - Outgoing	41,438	0.05	2,105	0.5	7.55	7,950	1.04	1,099	0.14	149	0.13	137	0.45	471	0.27	284	439	4.6E+05	0.0045	5	0.023	24	446	4.7E+05	0.068	72
Reduced Speed Zone - Outbound	41,438	0.13	5,473	2.1	7.55	88,168	1.04	12,187	0.14	1,647	0.13	1,516	0.45	5,223	0.27	3,148	439	5.1E+06	0.0045	52	0.023	270	446	5.2E+06	0.068	795
Cruise (RSZ to FNC Entrance)	41,438	0.83	34,393	0.6	7.55	144,532	1.04	19,978	0.14	2,701	0.13	2,485	0.45	8,562	0.27	5,161	439	8.4E+06	0.0045	86	0.023	443	446	8.5E+06	0.068	1,303
Cruise/ RSZ /Hotelling/ Maneuvering Total				29.6		463,374		64,049		8,659		7,966		27,449		16,547		2.7E+07		275		1,419.3		2.7E+07		4,177.8
Auxiliary Engines (MGO) [2]																										
Cruise/ RSZ / Maneuvering																										
Cruise (9 nautical mile CZB to RSZ)	9,116	0.13	1,185	1.0	6.06	7,176	0.82	972	0.13	159	0.13	150	3.0E-01	354	0.31	371	515	6.1E+05	3.0E-03	4	2.3E-02	27	522	6.2E+05	0.068	81
Reduced Speed Zone - Incoming	9,116	0.25	2,279	2.9	6.06	40,475	0.82	5,483	0.13	897	0.13	847	3.0E-01	1,994	0.31	2,093	515	3.4E+06	3.0E-03	20	2.3E-02	155	522	3.5E+06	0.068	455
Maneuvering - Incoming	9,116	0.48	4,376	0.5	6.06	13,249	0.82	1,795	0.13	294	0.13	277	3.0E-01	653	0.31	685	515	1.1E+06	3.0E-03	7	2.3E-02	51	522	1.1E+06	0.068	149
Loading/Hotelling	9,116	0.19	1,732	23.0	6.06	241,238	0.82	32,679	0.13	5,347	0.13	5,050	3.0E-01	11,883	0.31	12,477	515	2.1E+07	3.0E-03	119	2.3E-02	922	522	2.1E+07	0.068	2,713
Maneuvering - Outgoing	9,116	0.48	4,376	0.5	6.06	13,249	0.82	1,795	0.13	294	0.13	277	3.0E-01	653	0.31	685	515	1.1E+06	3.0E-03	7	2.3E-02	51	522	1.1E+06	0.068	149
Reduced Speed Zone - Outgoing	9,116	0.25	2,279	2.9	6.06	40,475	0.82	5,483	0.13	897	0.13	847	3.0E-01	1,994	0.31	2,093	515	3.4E+06	3.0E-03	20	2.3E-02	155	522	3.5E+06	0.068	455
Cruise (RSZ to FNC Entrance)	9,116	0.13	1,185	1.0	6.06	7,176	0.82	972	0.13	159	0.13	150	3.0E-01	354	0.31	371	515	6.1E+05	3.0E-03	4	2.3E-02	27	522	6.2E+05	0.068	81
Cruise/ RSZ / Maneuvering Total				31.9		363,039		49,178		8,047		7,600		17,883		18,777		3.1E+07		179		1,387.0		3.1E+07		4,082.6
Auxiliary Boiler (MGO)																										
Maneuvering - Incoming	679	0.85	577	0.5	1.49	430	0.15	43	0.13	37	0.11	32	0.07	22	0.43	123	688	2.0E+05	0.001	0	0.060	17	707	2.0E+05	0.068	20
Loading/Hotelling	679	0.85	577	23.0	1.49	19,785	0.15	1,978	0.13	1,682	0.11	1,484	0.07	989	0.43	5,639	688	9.1E+06	0.001	20	0.060	792	707	9.4E+06	0.068	903
Maneuvering - Outgoing	679	0.85	577	0.5	1.49	430	0.15	43	0.13	37	0.11	32	0.07	22	0.43	123	688	2.0E+05	0.001	0	0.060	17	707	2.0E+05	0.068	20
Auxiliary Boiler Total				24.0		20,645		2,065		1,755		1,548		1,032		5,884		9.5E+06		21		826		9.8E+06		943

Assist Activity	Miles	Speed (kn	Time (Hours)
Cruise (FNC Entrance to RSZ)	13	20.3	0.6
Reduced Speed Zone	27	10	2.3
Maneuver (Inbound)	0	7	0.5
Offload/Hotel/Load	0	0	23.0
Maneuver (Outbound)	0	8	0.5
Reduced Speed Zone	27	11	2.1
Cruise (RSZ to FNC Entrance)	13	20.3	0.6
Total			**29.6**

Fuel	% Calls	Mode	Calls/Year	Emissions (Tons Per Year)										
				NOx	CO	PM10	PM2.5	VOC	SO2	CO2	CH4	N2O	CO_2e	HAPs
MDO	100%	Diesel Engine	**667**	340.52	47.07	6.36	5.85	20.17	12.16	19,795	0.20	1.04	20,123	3.07
MGO	100%	Auxiliary Engines	**667**	266.79	36.140	5.91	5.59	13.14	13.80	22,693	0.13	1.02	23,011.49	3.00
MGO	100%	Auxiliary Boiler	**667**	15.17	1.52	1.29	1.14	0.76	4.32	7,001	0.02	0.61	7,190.08	0.69
		Total		**622.48**	**84.72**	**13.57**	**12.58**	**34.07**	**30.28**	**49,489**	**0.35**	**2.67**	**50,324**	**6.76**
		Container Plus Tugboat Emissions Total		**797.14**	**213.15**	**20.19**	**19.00**	**41.01**	**30.45**	**67,212**	**2.66**	**3.18**	**68,255**	**9.11**

Marine Diesel Oil (0.10 % Sulfur)			Marine Gas Oil (0.10% Sulfur)		
Pollutant	g/kw-hr [3, 4]	g/hp-hr	Pollutant	g/kw-hr [4, 5]	g/hp-hr
NOx	10.13	7.55	NOx	8.12	6.06
CO	1.40	1.04	CO	1.10	0.82
PM_{10}	0.19	0.14	PM_{10}	0.18	0.13
$PM_{2.5}$	0.17	0.13	$PM_{2.5}$	0.17	0.13
VOC	0.60	0.45	VOC	0.40	0.30
SO_2	0.36	0.27	SO_2	0.42	0.31
CO_2	589	439	CO_2	691	515
CH_4	0.006	0.0045	CH_4	0.004	0.003
N_2O	0.031	0.023	N_2O	0.031	0.02

Auxiliary Boiler Emission Factors**		
Pollutant	g/kw-hr [6]	g/hp-hr
NOx	2.00	1.49
CO	0.20	0.15
PM_{10}	0.17	0.13
$PM_{2.5}$	0.15	0.11
VOC	0.10	0.07
SO_2	0.57	0.43
CO_2	923	688
CH_4	0.002	0.001
N_2O	0.080	0.06

** Steam Turbine Emission Factors
Marine Gas Oil (0.10% Sulfur)

HAP Emission Factors [7]		
HAP*	lb/MMBtu	g/HP-hr
Benzene	7.76E-04	8.96E-04
Toluene	2.81E-04	3.24E-04
Xylenes	1.93E-04	2.23E-04
Formaldehyd	7.89E-05	9.11E-05
Acetaldehyd	2.52E-05	2.91E-05
Acrolein	7.88E-06	9.09E-06
Naphthalene	1.30E-04	1.50E-04
Total PAH	2.12E-04	2.45E-04
Diesel-PM_{10}	5.73E-02	6.61E-02

*HAP = Hazardous Air Pollutant
PAH = Polycylic Aromatic Hydrocarbons

1. Horsepower rating and load factors for auxiliary engines are based on U. S. Environmental Protection Agency Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF International, April 2009, Tables 2-4 and 2-7.
2. Auxiliary Engine horsepower is assumed to be 22% of main propulsion engine based on U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 2-4.
3. U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Tables 2-9 & 2-13 (assumes Slow Speed Diesel (SSD).
4. Corrected for Emission Area Control Standards and International Ship Engine and Fuel Standards (MARPOL Annex VI). Assumes engine model year 2020.
5. U. S. Environmental Protection Agency Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF International, April 2009 Tables 2-13 & 2-16
6. U. S. Environmental Protection Agency Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF International, April 2009 Tables 2-9 & 2-13 (emission factor for Steam Turbine).
7. Hazardous Air Pollutant (HAP) emission factors were totals from Tables 3.4-3 and 3.4-4; AP-42, Compilation of Emission Factors, U.S. Environmental Protection Agency, October 1996.

SUMMARY OF EMISSIONS - ASSIST TUGBOAT EMISSIONS
NO ACTION ALTERNATIVE - 2060
PORT OF GULFPORT EXPANSION PROJECT
GULFPORT, HARRISON COUNTY MISSISSIPPI

Diesel Engines - Main Propulsion and Auxiliary Power Engines

Mode	No. of Tugs	Engine /Tug	HP/ Engine [1]	Load Factor[2]	Hr/Call (average)	NOx		CO		PM_{10}		$PM_{2.5}$		VOC		SO_2		CO_2		CH_4		N_2O		CO_2e		HAPs	
						g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call
Main Engines																											
Cruise	-	2	2,065			5.1		3.7		0.19		0.19		0.20		0.005		515		0.07		0.01		521		0.07	
Reduced Speed Zone	2	2	2,065	0.79	2.9	5.1	97,059	3.7	71,367	0.19	3,683	0.19	3,572	0.20	3,854	0.005	93	515	9,848,590	0.07	1,286	0.01	286	521	9,964,148	0.07	1,303
Maneuvering	2	2	2,065	0.79	0.5	5.1	16,547	3.7	12,167	0.19	628	0.19	609	0.20	657	0.005	16	515	1,679,045	0.07	219	0.01	49	521	1,698,745	0.07	222
Maneuvering	2	2	2,065	0.79	0.5	5.1	16,547	3.7	12,167	0.19	628	0.19	609	0.20	657	0.005	16	515	1,679,045	0.07	219	0.01	49	521	1,698,745	0.07	222
Reduced Speed Zone	2	2	2,065	0.79	2.9	5.1	97,059	3.7	71,367	0.19	3,683	0.19	3,572	0.20	3,854	0.005	93	515	9,848,590	0.07	1,286	0.01	286	521	9,964,148	0.07	1,303
Loading/Hotelling		2	2,065			5.1		3.7		0.19		0.19		0.20		0.005		515		0.07		0.01		521		0.07	
Total					6.9		227,211		167,067		8,621		8,362		9,022		217		23,055,270		3,009		669		23,325,786		3,051
Auxiliary Engines																											
Cruise	-	2	134			5.1		3.7		0.19		0.19		0.20		0.00		515		0.07		0.01		521		0.07	
Reduced Speed Zone	2	2	134	0.56	2.9	5.1	4,467	3.7	3,285	0.19	169	0.19	164	0.20	177	0.00	4	515	453,300	0.07	59	0.01	13	521	458,619	0.07	60
Maneuvering	2	2	134	0.56	0.5	5.1	762	3.7	560	0.19	29	0.19	28	0.20	30	0.00	1	515	77,281	0.07	10	0.01	2	521	78,188	0.07	10
Maneuvering	2	2	134	0.56	0.5	5.1	762	3.7	560	0.19	29	0.19	28	0.20	30	0.00	1	515	77,281	0.07	10	0.01	2	521	78,188	0.07	10
Reduced Speed Zone	2	2	134	0.56	2.9	5.1	4,467	3.7	3,285	0.19	169	0.19	164	0.20	177	0.00	4	515	453,300	0.07	59	0.01	13	521	458,619	0.07	60
Loading/Hotelling		2	134			5.1		3.7		0.19		0.19		0.20		0.00		515		0.07		0.01		521		0.07	
Total					6.9		10,458		7,690		397		385		415		10		1,061,163		139		31		1,073,614		140

Assist Activity	Miles	Speed (knots)	Time (Hours)
Cruise (FNC Entrance to RSZ)	13		
Reduced Speed Zone	27	8	2.9
Maneuver (Inbound)	0	0	0.5
Offload/Hotel/Load	0	0	23.0
Maneuver (Outbound)	0	0	0.5
Reduced Speed Zone	27	8	2.9
Cruise (RSZ to FNC Entrance)	13		
Total			**29.9**

Pollutant	Main Engines[3]		Auxiliary Engines[3]	
	g/kw-hr	g/hp-hr	g/kw-hr	g/hp-hr
NOx	6.8	5.1	6.8	5.07
CO	5.0	3.7	5.0	3.73
PM_{10}[4]	0.26	0.19	0.26	0.19
$PM_{2.5}$[5]	0.25	0.19	0.25	0.19
VOC	0.27	0.20	0.27	0.20
SO_2[4]	0.01	0.00	0.01	0.00
CO_2	690	515	690	515
CH_4	0.09	0.07	0.09	0.07
N_2O	0.02	0.01	0.02	0.01

Calls/Year	Mode	Emissions (Tons Per Year)										
		NOx	CO	PM_{10}	$PM_{2.5}$	VOC	SO_2	CO_2	CH_4	N_2O	CO_2e	HAPs
667	Main Engines	166.97	122.77	6.34	6.15	6.63	1.6E-01	16,943	2.2E+00	4.9E-01	17,142	2.2E+00
	Auxiliary Engines	7.69	5.65	0.29	0.28	0.31	7.3E-03	780	1.0E-01	2.3E-02	789	1.0E-01
	Total	**174.66**	**128.42**	**6.63**	**6.43**	**6.93**	**0.17**	**17,723**	**2.31**	**0.51**	**17,931**	**2.35**

HAP Emission Factors [6]

HAP*	lb/MMBtu	g/HP-hr
Benzene	7.76E-04	8.96E-04
Toluene	2.81E-04	3.24E-04
Xylenes	1.93E-04	2.23E-04
Formaldehyde	7.89E-05	9.11E-05
Acetaldehyde	2.52E-05	2.91E-05
Acrolein	7.88E-06	9.09E-06
Naphthalene	1.30E-04	1.50E-04
Total PAH	2.12E-04	2.45E-04
Diesel-PM_{10}	5.73E-02	6.61E-02

*HAP = Hazardous Air Pollutant
PAH = Polycylic Aromatic Hydrocarbons

1. Horsepower ratings are based on U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventori* es, ICF International, April 2009, Table 3-10.
2. Load factors are based on U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 3-3.
3. U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 3-8 (assumes the use of Category 1, Tier 2 engines).
4. Corrected per U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 3-9 (assumes the use of only ULSD fuel).
5. $PM_{2.5} = 0.97 \times PM_{10}$ per U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Page 3-9
6. *Hazardous Air Pollutant (HAP) emission factors were totals from Tables 3.4-3 and 3.4-4; AP-42, Compilation of Emission Factors, U.S. Environmental Protection Agency, October 1996.*

SUMMARY OF EMISSIONS - CONTAINER VESSEL EMISSIONS INCREASE
PROPOSED PROJECT ALTERNATIVE - 2020
PORT OF GULFPORT EXPANSION PROJECT
GULFPORT, HARRISON COUNTY MISSISSIPPI

Diesel Engines - Main Propulsion and Auxiliary Power Engines

Mode	Max HP [1]	Load [1] Factor	HP	Hr/Call (average)	NOx		CO		PM10		PM2.5		VOC		SO2		CO2		CH4		N2O		CO_2e		HAPs	
					g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call
Diesel (MDO)																										
Cruise/ RSZ / Maneuvering																										
Cruise (FNC Entrance to RSZ)	41,438	0.83	34,393	0.6	11.28	215,900	1.04	19,978	0.14	2,701	0.13	2,485	0.45	8,562	0.27	5,161	439	8.4E+06	0.0045	86	0.023	443	446	8.5E+06	0.068	1,303
Reduced Speed Zone - Incoming	41,438	0.10	4,112	2.3	11.28	108,847	1.04	10,072	0.14	1,362	0.13	1,253	0.45	4,316	0.27	2,602	439	4.2E+06	0.0045	43	0.023	223	446	4.3E+06	0.068	657
Maneuvering - Inbound	41,438	0.03	1,410	0.5	11.28	7,956	1.04	736	0.14	100	0.13	92	0.45	316	0.27	190	439	3.1E+05	0.0045	3	0.023	16	446	3.1E+05	0.068	48
Loading/Hotelling	41,438	-	-	23.0	11.28	-	1.04	-	0.14	-	0.13	-	0.45	-	0.27	-	439	0.0E+00	0.0045	-	0.023	-	446	0.0E+00	0.068	-
Maneuvering - Outgoing	41,438	0.05	2,105	0.5	11.28	11,876	1.04	1,099	0.14	149	0.13	137	0.45	471	0.27	284	439	4.6E+05	0.0045	5	0.023	24	446	4.7E+05	0.068	72
Reduced Speed Zone - Outbound	41,438	0.13	5,473	2.1	11.28	131,704	1.04	12,187	0.14	1,647	0.13	1,516	0.45	5,223	0.27	3,148	439	5.1E+06	0.0045	52	0.023	270	446	5.2E+06	0.068	795
Cruise (RSZ to FNC Entrance)	41,438	0.83	34,393	0.6	11.28	215,900	1.04	19,978	0.14	2,701	0.13	2,485	0.45	8,562	0.27	5,161	439	8.4E+06	0.0045	86	0.023	443	446	8.5E+06	0.068	1,303
Cruise/ RSZ /Hotelling/ Maneuvering Total				29.6		692,184		64,049		8,659		7,966		27,449		16,547		2.7E+07		275		1,419.3		2.7E+07		4,177.8
Auxiliary Engines (MGO) [2]																										
Cruise/ RSZ / Maneuvering																										
Cruise (9 nautical mile CZB to RSZ)	9,116	0.13	1,185	1.0	9.23	10,933	0.82	972	0.13	159	0.13	150	3.0E-01	354	0.31	371	515	6.1E+05	3.0E-03	4	2.3E-02	27	522	6.2E+05	0.068	81
Reduced Speed Zone - Incoming	9,116	0.25	2,279	2.9	9.23	61,662	0.82	5,483	0.13	897	0.13	847	3.0E-01	1,994	0.31	2,093	515	3.4E+06	3.0E-03	20	2.3E-02	155	522	3.5E+06	0.068	455
Maneuvering - Incoming	9,116	0.48	4,376	0.5	9.23	20,184	0.82	1,795	0.13	294	0.13	277	3.0E-01	653	0.31	685	515	1.1E+06	3.0E-03	7	2.3E-02	51	522	1.1E+06	0.068	149
Loading/Hotelling	9,116	0.19	1,732	23.0	9.23	367,515	0.82	32,679	0.13	5,347	0.13	5,050	3.0E-01	11,883	0.31	12,477	515	2.1E+07	3.0E-03	119	2.3E-02	922	522	2.1E+07	0.068	2,713
Maneuvering - Outgoing	9,116	0.48	4,376	0.5	9.23	20,184	0.82	1,795	0.13	294	0.13	277	3.0E-01	653	0.31	685	515	1.1E+06	3.0E-03	7	2.3E-02	51	522	1.1E+06	0.068	149
Reduced Speed Zone - Outgoing	9,116	0.25	2,279	2.9	9.23	61,662	0.82	5,483	0.13	897	0.13	847	3.0E-01	1,994	0.31	2,093	515	3.4E+06	3.0E-03	20	2.3E-02	155	522	3.5E+06	0.068	455
Cruise (RSZ to FNC Entrance)	9,116	0.13	1,185	1.0	9.23	10,933	0.82	972	0.13	159	0.13	150	3.0E-01	354	0.31	371	515	6.1E+05	3.0E-03	4	2.3E-02	27	522	6.2E+05	0.068	81
Cruise/ RSZ / Maneuvering Total				31.9		553,071		49,178		8,047		7,600		17,883		18,777		3.1E+07		179		1,387.0		3.1E+07		4,082.6
Auxiliary Boiler (MGO)																										
Maneuvering - Incoming	679	0.85	577	0.5	1.49	430	0.15	43	0.13	37	0.11	32	0.07	22	0.43	123	688	2.0E+05	0.001	0	0.060	17	707	2.0E+05	0.068	20
Loading/Hotelling	679	0.85	577	23.0	1.49	19,785	0.15	1,978	0.13	1,682	0.11	1,484	0.07	989	0.43	5,639	688	9.1E+06	0.001	20	0.060	792	707	9.4E+06	0.068	903
Maneuvering - Outgoing	679	0.85	577	0.5	1.49	430	0.15	43	0.13	37	0.11	32	0.07	22	0.43	123	688	2.0E+05	0.001	0	0.060	17	707	2.0E+05	0.068	20
Auxiliary Boiler Total				24.0		20,645		2,065		1,755		1,548		1,032		5,884		9.5E+06		21		826		9.8E+06		943

Assist Activity	Miles	Speed (kn	Time (Hours)
Cruise (FNC Entrance to RSZ)	13	20.3	0.6
Reduced Speed Zone	27	10	2.3
Maneuver (Inbound)	0	7	0.5
Offload/Hotel/Load	0	0	23.0
Maneuver (Outbound)	0	8	0.5
Reduced Speed Zone	27	11	2.1
Cruise (RSZ to FNC Entrance)	13	20.3	0.6
Total			**29.6**

Fuel	% Calls	Mode	Calls/Year	Emissions (Tons Per Year)										
				NOx	CO	PM10	PM2.5	VOC	SO2	CO2	CH4	N2O	CO_2e	HAPs
MDO	100%	Diesel Engine	**325**	248.09	22.96	3.10	2.86	9.84	5.93	9,655	0.10	0.51	9,814	1.50
MGO	100%	Auxiliary Engines	**325**	198.23	17.626	2.88	2.72	6.41	6.73	11,068	0.06	0.50	11,223.44	1.46
MGO	100%	Auxiliary Boiler	**325**	7.40	0.74	0.63	0.55	0.37	2.11	3,415	0.01	0.30	3,506.83	0.34
		Total		**453.73**	**41.32**	**6.62**	**6.13**	**16.62**	**14.77**	**24,138**	**0.17**	**1.30**	**24,545**	**3.30**
		Container Plus Tugboat Emissions Total		**526.15**	**59.54**	**8.55**	**8.01**	**18.61**	**14.82**	**29,237**	**0.84**	**1.45**	**29,704**	**3.97**

Marine Diesel Oil (0.10 % Sulfur)			Marine Gas Oil (0.10% Sulfur)		
Pollutant	g/kw-hr [3]	g/hp-hr	Pollutant	g/kw-hr [4]	g/hp-hr
NOx	15.13	11.28	NOx	12.37	9.23
CO	1.40	1.04	CO	1.10	0.82
PM_{10}	0.19	0.14	PM_{10}	0.18	0.13
$PM_{2.5}$	0.17	0.13	$PM_{2.5}$	0.17	0.13
VOC	0.60	0.45	VOC	0.40	0.30
SO_2	0.36	0.27	SO_2	0.42	0.31
CO_2	589	439	CO_2	691	515
CH_4	0.006	0.0045	CH_4	0.004	0.003
N_2O	0.031	0.023	N_2O	0.031	0.02

Auxiliary Boiler Emission Factors**		
Pollutant	g/kw-hr [5]	g/hp-hr
NOx	2.00	1.49
CO	0.20	0.15
PM_{10}	0.17	0.13
$PM_{2.5}$	0.15	0.11
VOC	0.10	0.07
SO_2	0.57	0.43
CO_2	923	688
CH_4	0.002	0.001
N_2O	0.080	0.06

** Steam Turbine Emission Factors
Marine Gas Oil (0.10% Sulfur)

HAP Emission Factors [6]		
HAP*	lb/MMBtu	g/HP-hr
Benzene	7.76E-04	8.96E-04
Toluene	2.81E-04	3.24E-04
Xylenes	1.93E-04	2.23E-04
Formaldehyd	7.89E-05	9.11E-05
Acetaldehyd	2.52E-05	2.91E-05
Acrolein	7.88E-06	9.09E-06
Naphthalene	1.30E-04	1.50E-04
Total PAH	2.12E-04	2.45E-04
Diesel-PM_{10}	5.73E-02	6.61E-02

*HAP = Hazardous Air Pollutant
PAH = Polycylic Aromatic Hydrocarbons

1. Horsepower rating and load factors for auxiliary engines are based on U. S. Environmental Protection Agency Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF International, April 2009, Tables 2-4 and 2-7.
2. Auxiliary Engine horsepower is assumed to be 22% of main propulsion engine based on U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 2-4.
3. U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Tables 2-9 & 2-13 (assumes Slow Speed Diesel (SSD) engine model year 2000 or later).
4. U. S. Environmental Protection Agency Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF International, April 2009 Tables 2-13 & 2-16
5. U. S. Environmental Protection Agency Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF International, April 2009 Tables 2-9 & 2-13 (emission factor for Steam Turbine).
6. Hazardous Air Pollutant (HAP) emission factors were totals from Tables 3.4-3 and 3.4-4; AP-42, Compilation of Emission Factors, U.S. Environmental Protection Agency, October 1996.

SUMMARY OF EMISSIONS - ASSIST TUGBOAT EMISSIONS
PROPOSED PROJECT ALTERNATIVE - 2020
PORT OF GULFPORT EXPANSION PROJECT
GULFPORT, HARRISON COUNTY MISSISSIPPI

Diesel Engines - Main Propulsion and Auxiliary Power Engines

Mode	No. of Tugs	Engine /Tug	HP/ Engine [1]	Load Factor[2]	Hr/Call (average)	NOx		CO		PM_{10}		$PM_{2.5}$		VOC		SO_2		CO_2		CH_4		N_2O		CO_2e		HAPs	
						g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call
Main Engines																											
Cruise	-	2	2,065			7.3		1.9		0.19		0.19		0.20		0.005		515		0.07		0.01		521		0.07	
Reduced Speed Zone	2	2	2,065	0.79	2.9	7.3	139,879	1.9	35,683	0.19	3,683	0.19	3,572	0.20	3,854	0.005	93	515	9,848,590	0.07	1,286	0.01	286	521	9,964,148	0.07	1,303
Maneuvering	2	2	2,065	0.79	0.5	7.3	23,847	1.9	6,083	0.19	628	0.19	609	0.20	657	0.005	16	515	1,679,045	0.07	219	0.01	49	521	1,698,745	0.07	222
Maneuvering	2	2	2,065	0.79	0.5	7.3	23,847	1.9	6,083	0.19	628	0.19	609	0.20	657	0.005	16	515	1,679,045	0.07	219	0.01	49	521	1,698,745	0.07	222
Reduced Speed Zone	2	2	2,065	0.79	2.9	7.3	139,879	1.9	35,683	0.19	3,683	0.19	3,572	0.20	3,854	0.005	93	515	9,848,590	0.07	1,286	0.01	286	521	9,964,148	0.07	1,303
Loading/Hotelling		2	2,065			7.3		1.9		0.19		0.19		0.20		0.005		515		0.07		0.01		521		0.07	
Total					6.9		327,452		83,534		8,621		8,362		9,022		217		23,055,270		3,009		669		23,325,786		3,051
Auxiliary Engines																											
Cruise	-	2	134			7.3		1.3		0.26		0.25		0.20		0.00		515		0.07		0.01		521		0.07	
Reduced Speed Zone	2	2	134	0.56	2.9	7.3	6,438	1.3	1,117	0.26	226	0.25	219	0.20	177	0.00	4	515	453,300	0.07	59	0.01	13	521	458,619	0.07	60
Maneuvering	2	2	134	0.56	0.5	7.3	1,098	1.3	190	0.26	39	0.25	37	0.20	30	0.00	1	515	77,281	0.07	10	0.01	2	521	78,188	0.07	10
Maneuvering	2	2	134	0.56	0.5	7.3	1,098	1.3	190	0.26	39	0.25	37	0.20	30	0.00	1	515	77,281	0.07	10	0.01	2	521	78,188	0.07	10
Reduced Speed Zone	2	2	134	0.56	2.9	7.3	6,438	1.3	1,117	0.26	226	0.25	219	0.20	177	0.00	4	515	453,300	0.07	59	0.01	13	521	458,619	0.07	60
Loading/Hotelling		2	134			7.3		1.3		0.26		0.25		0.20		0.00		515		0.07		0.01		521		0.07	
Total					6.9		15,072		2,614		529		513		415		10		1,061,163		139		31		1,073,614		140

Assist Activity		Miles	Speed (knots)	Time (Hours)
	Cruise (FNC Entrance to RSZ)	13		
	Reduced Speed Zone	27	8	2.9
	Maneuver (Inbound)	0	0	0.5
	Offload/Hotel/Load	0	0	23.0
	Maneuver (Outbound)	0	0	0.5
	Reduced Speed Zone	27	8	2.9
	Cruise (RSZ to FNC Entrance)	13		
Total				**29.9**

Pollutant	Main Engines[3]		Auxiliary Engines[3]	
	g/kw-hr	g/hp-hr	g/kw-hr	g/hp-hr
NOx	9.8	7.3	9.8	7.31
CO	2.5	1.9	1.7	1.27
PM_{10}[4]	0.26	0.19	0.34	0.26
$PM_{2.5}$[5]	0.25	0.19	0.33	0.25
VOC	0.27	0.20	0.27	0.20
SO_2[4]	0.01	0.00	0.01	0.00
CO_2	690	515	690	515
CH_4	0.09	0.07	0.09	0.07
N_2O	0.02	0.01	0.02	0.01

Calls/Year	Mode	Emissions (Tons Per Year)										
		NOx	CO	PM_{10}	$PM_{2.5}$	VOC	SO_2	CO_2	CH_4	N_2O	CO_2e	HAPs
325	Main Engines	117.37	29.94	3.09	3.00	3.23	7.8E-02	8,264	1.1E+00	2.4E-01	8,361	1.1E+00
	Auxiliary Engines	5.40	0.94	0.19	0.18	0.15	3.6E-03	380	5.0E-02	1.1E-02	385	5.0E-02
	Total	**122.77**	**30.88**	**3.28**	**3.18**	**3.38**	**0.08**	**8,644**	**1.13**	**0.25**	**8,745**	**1.14**

HAP Emission Factors [6]

HAP*	lb/MMBtu	g/HP-hr
Benzene	7.76E-04	8.96E-04
Toluene	2.81E-04	3.24E-04
Xylenes	1.93E-04	2.23E-04
Formaldehyde	7.89E-05	9.11E-05
Acetaldehyde	2.52E-05	2.91E-05
Acrolein	7.88E-06	9.09E-06
Naphthalene	1.30E-04	1.50E-04
Total PAH	2.12E-04	2.45E-04
Diesel-PM_{10}	5.73E-02	6.61E-02

*HAP = Hazardous Air Pollutant
PAH = Polycylic Aromatic Hydrocarbons

1. Horsepower ratings are based on U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventori* es, ICF International, April 2009, Table 3-10.
2. Load factors are based on U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 3-3.
3. U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 3-8 (assumes the use of Category 1, Tier 1 engines built after 2000).
4. Corrected per U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 3-9 (assumes the use of only ULSD fuel).
5. $PM_{2.5}$ = 0.97 x PM_{10} per U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Page 3-9
6. *Hazardous Air Pollutant (HAP) emission factors were totals from Tables 3.4-3 and 3.4-4; AP-42, Compilation of Emission Factors, U.S. Environmental Protection Agency, October 1996.*

SUMMARY OF EMISSIONS - CONTAINER VESSEL EMISSIONS INCREASE
PROPOSED PROJECT ALTERNATIVE - 2060
PORT OF GULFPORT EXPANSION PROJECT
GULFPORT, HARRISON COUNTY MISSISSIPPI

Diesel Engines - Main Propulsion and Auxiliary Power Engines

Mode	Max HP [1]	Load [1] Factor	HP	Hr/Call (average)	NOx		CO		PM10		PM2.5		VOC		SO2		CO2		CH4		N2O		CO_2e		HAPs	
					g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call
Diesel (MDO)																										
Cruise/ RSZ / Maneuvering																										
Cruise (FNC Entrance to RSZ)	41,438	0.83	34,393	0.6	7.55	144,532	1.04	19,978	0.14	2,701	0.13	2,485	0.45	8,562	0.27	5,161	439	8.4E+06	0.0045	86	0.023	443	446	8.5E+06	0.068	1,303
Reduced Speed Zone - Incoming	41,438	0.10	4,112	2.3	7.55	72,866	1.04	10,072	0.14	1,362	0.13	1,253	0.45	4,316	0.27	2,602	439	4.2E+06	0.0045	43	0.023	223	446	4.3E+06	0.068	657
Maneuvering - Inbound	41,438	0.03	1,410	0.5	7.55	5,326	1.04	736	0.14	100	0.13	92	0.45	316	0.27	190	439	3.1E+05	0.0045	3	0.023	16	446	3.1E+05	0.068	48
Loading/Hotelling	41,438	-	-	23.0	7.55	-	1.04	-	0.14	-	0.13	-	0.45	-	0.27	-	439	0.0E+00	0.0045	-	0.023	-	446	0.0E+00	0.068	-
Maneuvering - Outgoing	41,438	0.05	2,105	0.5	7.55	7,950	1.04	1,099	0.14	149	0.13	137	0.45	471	0.27	284	439	4.6E+05	0.0045	5	0.023	24	446	4.7E+05	0.068	72
Reduced Speed Zone - Outbound	41,438	0.13	5,473	2.1	7.55	88,168	1.04	12,187	0.14	1,647	0.13	1,516	0.45	5,223	0.27	3,148	439	5.1E+06	0.0045	52	0.023	270	446	5.2E+06	0.068	795
Cruise (RSZ to FNC Entrance)	41,438	0.83	34,393	0.6	7.55	144,532	1.04	19,978	0.14	2,701	0.13	2,485	0.45	8,562	0.27	5,161	439	8.4E+06	0.0045	86	0.023	443	446	8.5E+06	0.068	1,303
Cruise/ RSZ /Hotelling/ Maneuvering Total				29.6		463,374		64,049		8,659		7,966		27,449		16,547		2.7E+07		275		1,419.3		2.7E+07		4,177.8
Auxiliary Engines (MGO) [2]																										
Cruise/ RSZ / Maneuvering																										
Cruise (9 nautical mile CZB to RSZ)	9,116	0.13	1,185	1.0	6.06	7,176	0.82	972	0.13	159	0.13	150	3.0E-01	354	0.31	371	515	6.1E+05	3.0E-03	4	2.3E-02	27	522	6.2E+05	0.068	81
Reduced Speed Zone - Incoming	9,116	0.25	2,279	2.9	6.06	40,475	0.82	5,483	0.13	897	0.13	847	3.0E-01	1,994	0.31	2,093	515	3.4E+06	3.0E-03	20	2.3E-02	155	522	3.5E+06	0.068	455
Maneuvering - Incoming	9,116	0.48	4,376	0.5	6.06	13,249	0.82	1,795	0.13	294	0.13	277	3.0E-01	653	0.31	685	515	1.1E+06	3.0E-03	7	2.3E-02	51	522	1.1E+06	0.068	149
Loading/Hotelling	9,116	0.19	1,732	23.0	6.06	241,238	0.82	32,679	0.13	5,347	0.13	5,050	3.0E-01	11,883	0.31	12,477	515	2.1E+07	3.0E-03	119	2.3E-02	922	522	2.1E+07	0.068	2,713
Maneuvering - Outgoing	9,116	0.48	4,376	0.5	6.06	13,249	0.82	1,795	0.13	294	0.13	277	3.0E-01	653	0.31	685	515	1.1E+06	3.0E-03	7	2.3E-02	51	522	1.1E+06	0.068	149
Reduced Speed Zone - Outgoing	9,116	0.25	2,279	2.9	6.06	40,475	0.82	5,483	0.13	897	0.13	847	3.0E-01	1,994	0.31	2,093	515	3.4E+06	3.0E-03	20	2.3E-02	155	522	3.5E+06	0.068	455
Cruise (RSZ to FNC Entrance)	9,116	0.13	1,185	1.0	6.06	7,176	0.82	972	0.13	159	0.13	150	3.0E-01	354	0.31	371	515	6.1E+05	3.0E-03	4	2.3E-02	27	522	6.2E+05	0.068	81
Cruise/ RSZ / Maneuvering Total				31.9		363,039		49,178		8,047		7,600		17,883		18,777		3.1E+07		179		1,387.0		3.1E+07		4,082.6
Auxiliary Boiler (MGO)																										
Maneuvering - Incoming	679	0.85	577	0.5	1.49	430	0.15	43	0.13	37	0.11	32	0.07	22	0.43	123	688	2.0E+05	0.001	0	0.060	17	707	2.0E+05	0.068	20
Loading/Hotelling	679	0.85	577	23.0	1.49	19,785	0.15	1,978	0.13	1,682	0.11	1,484	0.07	989	0.43	5,639	688	9.1E+06	0.001	20	0.060	792	707	9.4E+06	0.068	903
Maneuvering - Outgoing	679	0.85	577	0.5	1.49	430	0.15	43	0.13	37	0.11	32	0.07	22	0.43	123	688	2.0E+05	0.001	0	0.060	17	707	2.0E+05	0.068	20
Auxiliary Boiler Total				24.0		20,645		2,065		1,755		1,548		1,032		5,884		9.5E+06		21		826		9.8E+06		943

Assist Activity	Miles	Speed (kn	Time (Hours)
Cruise (FNC Entrance to RSZ)	13	20.3	0.6
Reduced Speed Zone	27	10	2.3
Maneuver (Inbound)	0	7	0.5
Offload/Hotel/Load	0	0	23.0
Maneuver (Outbound)	0	8	0.5
Reduced Speed Zone	27	11	2.1
Cruise (RSZ to FNC Entrance)	13	20.3	0.6
Total			**29.6**

Fuel	% Calls	Mode	Calls/Year	Emissions (Tons Per Year)										
				NOx	CO	PM10	PM2.5	VOC	SO2	CO2	CH4	N2O	CO_2e	HAPs
MDO	100%	Diesel Engine	**1,133**	578.89	80.02	10.82	9.95	34.29	20.67	33,652	0.34	1.77	34,209	5.22
MGO	100%	Auxiliary Engines	**1,133**	453.54	61.437	10.05	9.49	22.34	23.46	38,578	0.22	1.73	39,119.53	5.10
MGO	100%	Auxiliary Boiler	**1,133**	25.79	2.58	2.19	1.93	1.29	7.35	11,903	0.03	1.03	12,223.14	1.18
		Total		**1,058.22**	**144.03**	**23.06**	**21.38**	**57.92**	**51.48**	**84,132**	**0.59**	**4.54**	**85,551**	**11.50**
		Container Plus Tugboat Emissions Total		**1,355.14**	**362.35**	**34.33**	**32.31**	**69.71**	**51.76**	**114,260**	**4.53**	**5.41**	**116,033**	**15.48**

Marine Diesel Oil (0.10 % Sulfur)			Marine Gas Oil (0.10% Sulfur)		
Pollutant	g/kw-hr [3, 4]	g/hp-hr	Pollutant	g/kw-hr [4, 5]	g/hp-hr
NOx	10.13	7.55	NOx	8.12	6.06
CO	1.40	1.04	CO	1.10	0.82
PM_{10}	0.19	0.14	PM_{10}	0.18	0.13
$PM_{2.5}$	0.17	0.13	$PM_{2.5}$	0.17	0.13
VOC	0.60	0.45	VOC	0.40	0.30
SO_2	0.36	0.27	SO_2	0.42	0.31
CO_2	589	439	CO_2	691	515
CH_4	0.006	0.0045	CH_4	0.004	0.003
N_2O	0.031	0.023	N_2O	0.031	0.02

Auxiliary Boiler Emission Factors**		
Pollutant	g/kw-hr [6]	g/hp-hr
NOx	2.00	1.49
CO	0.20	0.15
PM_{10}	0.17	0.13
$PM_{2.5}$	0.15	0.11
VOC	0.10	0.07
SO_2	0.57	0.43
CO_2	923	688
CH_4	0.002	0.001
N_2O	0.080	0.06

** Steam Turbine Emission Factors
Marine Gas Oil (0.10% Sulfur)

HAP Emission Factors [7]		
HAP*	lb/MMBtu	g/HP-hr
Benzene	7.76E-04	8.96E-04
Toluene	2.81E-04	3.24E-04
Xylenes	1.93E-04	2.23E-04
Formaldehyd	7.89E-05	9.11E-05
Acetaldehyd	2.52E-05	2.91E-05
Acrolein	7.88E-06	9.09E-06
Naphthalene	1.30E-04	1.50E-04
Total PAH	2.12E-04	2.45E-04
Diesel-PM_{10}	5.73E-02	6.61E-02

*HAP = Hazardous Air Pollutant
PAH = Polycylic Aromatic Hydrocarbons

1. Horsepower rating and load factors for auxiliary engines are based on U. S. Environmental Protection Agency Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF International, April 2009, Tables 2-4 and 2-7.
2. Auxiliary Engine horsepower is assumed to be 22% of main propulsion engine based on U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 2-4.
3. U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Tables 2-9 & 2-13 (assumes Slow Speed Diesel (SSD).
4. Corrected for Emission Area Control Standards and International Ship Engine and Fuel Standards (MARPOL Annex VI). Assumes engine model year 2020.
5. U. S. Environmental Protection Agency Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF International, April 2009 Tables 2-13 & 2-16
6. U. S. Environmental Protection Agency Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories, ICF International, April 2009 Tables 2-9 & 2-13 (emission factor for Steam Turbine).
7. Hazardous Air Pollutant (HAP) emission factors were totals from Tables 3.4-3 and 3.4-4; AP-42, Compilation of Emission Factors, U.S. Environmental Protection Agency, October 1996.

SUMMARY OF EMISSIONS - ASSIST TUGBOAT EMISSIONS
PROPOSED PROJECT ALTERNATIVE - 2060
PORT OF GULFPORT EXPANSION PROJECT
GULFPORT, HARRISON COUNTY MISSISSIPPI

Diesel Engines - Main Propulsion and Auxiliary Power Engines

Mode	No. of Tugs	Engine /Tug	HP/ Engine [1]	Load Factor[2]	Hr/Call (average)	NOx		CO		PM_{10}		$PM_{2.5}$		VOC		SO_2		CO_2		CH_4		N_2O		CO_2e		HAPs	
						g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call	g/hp-hr	g/call
Main Engines																											
Cruise	-	2	2,065			5.1		3.7		0.19		0.19		0.20		0.005		515		0.07		0.01		521		0.07	
Reduced Speed Zone	2	2	2,065	0.79	2.9	5.1	97,059	3.7	71,367	0.19	3,683	0.19	3,572	0.20	3,854	0.005	93	515	9,848,590	0.07	1,286	0.01	286	521	9,964,148	0.07	1,303
Maneuvering	2	2	2,065	0.79	0.5	5.1	16,547	3.7	12,167	0.19	628	0.19	609	0.20	657	0.005	16	515	1,679,045	0.07	219	0.01	49	521	1,698,745	0.07	222
Maneuvering	2	2	2,065	0.79	0.5	5.1	16,547	3.7	12,167	0.19	628	0.19	609	0.20	657	0.005	16	515	1,679,045	0.07	219	0.01	49	521	1,698,745	0.07	222
Reduced Speed Zone	2	2	2,065	0.79	2.9	5.1	97,059	3.7	71,367	0.19	3,683	0.19	3,572	0.20	3,854	0.005	93	515	9,848,590	0.07	1,286	0.01	286	521	9,964,148	0.07	1,303
Loading/Hotelling		2	2,065			5.1		3.7		0.19		0.19		0.20		0.005		515		0.07		0.01		521		0.07	
Total					6.9		227,211		167,067		8,621		8,362		9,022		217		23,055,270		3,009		669		23,325,786		3,051
Auxiliary Engines																											
Cruise	-	2	134			5.1		3.7		0.19		0.19		0.20		0.00		515		0.07		0.01		521		0.07	
Reduced Speed Zone	2	2	134	0.56	2.9	5.1	4,467	3.7	3,285	0.19	169	0.19	164	0.20	177	0.00	4	515	453,300	0.07	59	0.01	13	521	458,619	0.07	60
Maneuvering	2	2	134	0.56	0.5	5.1	762	3.7	560	0.19	29	0.19	28	0.20	30	0.00	1	515	77,281	0.07	10	0.01	2	521	78,188	0.07	10
Maneuvering	2	2	134	0.56	0.5	5.1	762	3.7	560	0.19	29	0.19	28	0.20	30	0.00	1	515	77,281	0.07	10	0.01	2	521	78,188	0.07	10
Reduced Speed Zone	2	2	134	0.56	2.9	5.1	4,467	3.7	3,285	0.19	169	0.19	164	0.20	177	0.00	4	515	453,300	0.07	59	0.01	13	521	458,619	0.07	60
Loading/Hotelling		2	134			5.1		3.7		0.19		0.19		0.20		0.00		515		0.07		0.01		521		0.07	
Total					6.9		10,458		7,690		397		385		415		10		1,061,163		139		31		1,073,614		140

Assist Activity	Miles	Speed (knots)	Time (Hours)
Cruise (FNC Entrance to RSZ)	13		
Reduced Speed Zone	27	8	2.9
Maneuver (Inbound)	0	0	0.5
Offload/Hotel/Load	0	0	23.0
Maneuver (Outbound)	0	0	0.5
Reduced Speed Zone	27	8	2.9
Cruise (RSZ to FNC Entrance)	13		
Total			**29.9**

Pollutant	Main Engines[3]		Auxiliary Engines[3]	
	g/kw-hr	g/hp-hr	g/kw-hr	g/hp-hr
NOx	6.8	5.1	6.8	5.07
CO	5.0	3.7	5.0	3.73
PM_{10}[4]	0.26	0.19	0.26	0.19
$PM_{2.5}$[5]	0.25	0.19	0.25	0.19
VOC	0.27	0.20	0.27	0.20
SO_2[4]	0.01	0.00	0.01	0.00
CO_2	690	515	690	515
CH_4	0.09	0.07	0.09	0.07
N_2O	0.02	0.01	0.02	0.01

Calls/Year	Mode	Emissions (Tons Per Year)									
		NOx	CO	PM_{10}	$PM_{2.5}$	VOC	SO_2	CO_2	CH_4	N_2O	CO_2e	HAPs
1,133	Main Engines	283.85	208.72	10.77	10.45	11.27	2.7E-01	28,803	3.8E+00	8.4E-01	29,141	3.8E+00
	Auxiliary Engines	13.06	9.61	0.50	0.48	0.52	1.2E-02	1,326	1.7E-01	3.8E-02	1,341	1.8E-01
	Total	**296.92**	**218.32**	**11.27**	**10.93**	**11.79**	**0.28**	**30,128**	**3.93**	**0.87**	**30,482**	**3.99**

HAP Emission Factors [6]

HAP*	lb/MMBtu	g/HP-hr
Benzene	7.76E-04	8.96E-04
Toluene	2.81E-04	3.24E-04
Xylenes	1.93E-04	2.23E-04
Formaldehyde	7.89E-05	9.11E-05
Acetaldehyde	2.52E-05	2.91E-05
Acrolein	7.88E-06	9.09E-06
Naphthalene	1.30E-04	1.50E-04
Total PAH	2.12E-04	2.45E-04
Diesel-PM_{10}	5.73E-02	6.61E-02

*HAP = Hazardous Air Pollutant
PAH = Polycylic Aromatic Hydrocarbons

1. Horsepower ratings are based on U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventori* es, ICF International, April 2009, Table 3-10.
2. Load factors are based on U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 3-3.
3. U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 3-8 (assumes the use of Category 1, Tier 2 engines).
4. Corrected per U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Table 3-9 (assumes the use of only ULSD fuel).
5. $PM_{2.5}$ = 0.97 x PM_{10} per U. S. Environmental Protection Agency *Current Methodologies in Preparing Mobile Source Port-Related Emission Inventories* , ICF International, April 2009 Page 3-9
6. *Hazardous Air Pollutant (HAP) emission factors were totals from Tables 3.4-3 and 3.4-4; AP-42, Compilation of Emission Factors, U.S. Environmental Protection Agency, October 1996.*

Appendix M

Clean Water Act Section 404(b)(1)

APPENDIX M
PORT OF GULFPORT EXPANSION PROJECT
MISSISSIPPI STATE PORT AUTHORITY
SECTION 404(B)(1) EVALUATION

U.S. Army Corps of Engineers
Mobile District

October 2015

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Acronyms and Abbreviations

BMC	Biloxi Marsh Complex – Northeastern Outlying Islands
BMP	best management practice
BU	beneficial use
BUG	Beneficial Use Group
DEIS	Draft Environmental Impact Statement
DMMP	Dredged Material Management Plan
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ERM	effects range medium
FNC	Gulfport Harbor Federal Navigation Channel
FR	Federal Register
GIWW	Gulf Intracoastal Waterway
Gulf	Gulf of Mexico
IH	Interstate Highway
mcy	million cubic yards
MDEQ	Mississippi Department of Environmental Quality
MDMR	Mississippi Department of Marine Resources
mg/L	milligrams per liter
MRL	minimum reporting limits
MSPA or Applicant	Mississippi State Port Authority
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
ODMDS	Ocean Dredged Material Disposal Site
PAH	polycyclic aromatic hydrocarbon
PCBs	polychlorinated biphenyls
PCE	primary constituent element
PEL	probable effects level
PGEP	Port of Gulfport Expansion Project
Port	Port of Gulfport
SAP	Sampling and Analysis Plan
SEIS	Supplemental Environmental Imapct Statement
SVOC	semivolatile organic compound
TEL	threshold effects level

TEQ	toxic equivalent
TEU	twenty-foot equivalent units
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TRG	Target Remediation Goals
TSS	total suspended solids
µg/L	micrograms per liter
US	U.S. Highway
USACE	U.S. Army Corps of Engineers
USC	United States Code
USCS	Unified Soil Classification System
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compounds

Appendix M
Port of Gulfport Expansion Project
Mississippi State Port Authority
Section 404(b)(1) Evaluation

I. PROJECT DESCRIPTION

a. Location

The Port of Gulfport (Port) is located to the south of the City of Gulfport, Harrison County, Mississippi, but is within the city limits (shown on Figure 1.2-1 of the Environmental Impact Statement [EIS]). Larger metropolitan areas in the vicinity of Gulfport include Mobile, Alabama, which is 80 miles to the east and New Orleans, Louisiana, which is 80 miles to the west. The Port encompasses approximately 369 acres within 5 miles of the Gulf Intracoastal Waterway (GIWW), 10 miles from the Gulf of Mexico (Gulf), and Gulf National Seashore, and approximately 7 miles south of Interstate Highway 10 (I-10).

The Port is located on Mississippi Sound, which extends from Lake Borgne, Louisiana, to Mobile Bay, Alabama, and is geographically separated from the Gulf by a series of narrow islands and sand bars. The Port is accessible via the Gulfport Harbor Federal Navigation Channel (FNC), enters Mississippi Sound from the Gulf, and passes between Cat Island and West Ship Island.

The Applicant's (Mississippi State Port Authority [MSPA]) Proposed Project Alternative, Port of Gulfport Expansion Project (PGEP), includes the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, infrastructure and breakwater, and dredging and dredged material placement (*Federal Register*, 2013).

A *study area* was defined to represent the area of resources potentially and indirectly affected by the proposed project, shown on Figure 3.0-1 of the EIS. Study area extent encompasses a 10.5-mile radius that includes Harrison County, the southeastern edge of Hancock County and the southwestern tip of Jackson County, and a portion of Mississippi Sound, which addressed Essential Fish Habitat (EFH) and potential effects to the Gulf sturgeon (*Acipenser oxyrhynchus desotoi*).

The Project area is designed to provide spatial boundaries for evaluation of resources that may be directly impacted by the construction and operation of the proposed Project, and is, therefore, a smaller area, more immediate to the proposed Project features. Specifically, the Project area surrounding the Port is defined as the Project footprint with a 5,000-foot buffer.

b. General Description

On March 11, 2011, U.S. Army Corps of Engineers (USACE), Mobile District filed a Notice of Intent (NOI) in accordance with the National Environmental Policy Act (NEPA) process to develop an EIS for the PGEP. The PGEP, as described in the NOI (SAM-2009-1768-DMY, issued April 16, 2010), has been altered from its initial scope. Initially, approximately 700 acres of estuarine mud and sand bottom in the Mississippi Sound were proposed to be filled to expand

the collective footprint of the Port. The modified Project scope entails filling a smaller footprint of approximately 282 acres. The reduced footprint decreases the overall amount of fill necessary for expansion and will no longer impact the existing Anchorage Basin or FNC.

The Applicant's Proposed Project Alternative is to expand the facilities at the Port to provide appropriate infrastructure for handling up to 1.7 million twenty-foot equivalent units (TEUs) annually by 2060. This effort involves the dredging and filling of estuarine mud and sand bottom in Mississippi Sound, the construction of wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, placement of new-work and maintenance dredged material, and construction of a breakwater. The proposed expanded Port facility would be elevated to up to +25 feet above mean sea level to provide protection against future tropical storm surge events.

The Applicant's Proposed Project Alternative will require removal and placement of approximately 7.5 million cubic yards (mcy) of sediment for the expansion of the piers and the creation of the Turning Basin.

This Section 404(b)(1) evaluation addresses discharges of dredged or fill material into waters of the U.S. as proposed by the Applicant's Proposed Project Alternative. The Applicant's Proposed Project Alternative evaluated in the EIS includes the following primary actions:

1. Dredging and impacts to approximately 282 acres of estuarine mud and sand bottom in Mississippi Sound for the construction of backlands, wharfs, bulkheads, terminal facilities, container storage areas, intermodal container transfer facilities, expanded turning basin, and construction of a breakwater of approximately 4,000 linear feet (approximately 18 acres of fill);

2. Proposed deepening of the federally authorized Turning Basin and proposed basin expansion to match the depth of the Sound Channel; and

3. Dredged material disposal.

The recommended placement alternative for the dredged material from the West and East Pier Expansion, North Harbor and West Pier berthing areas, and the Turning Basin expansion is a permitted Beneficial Use (BU) site such as the Biloxi Marsh Complex – Northeastern Outlying Island (BMC), other suitable BU sites if available, or the Pascagoula Ocean Dredged Material Disposal Site (ODMDS). The new work dredging associated with the construction of the above Port features as part of the proposed Project is estimated to require removal of approximately 7.5 mcy of dredged material, including 560,000 cy of dredged material (debris from East Pier) that would be designated for upland disposal. New work dredged material would be placed on a barge (without dewatering) and transported to the disposal site; material designated for upland disposal would be placed in a truck and hauled to a permitted and approved upland disposal site. Following construction of the Turning Basin Expansion, the MSPA would be responsible for maintenance dredging of the portion of the new Turning Basin that is not part of the federally authorized project, as well as the berthing areas associated with the expanded East Pier, North Harbor, and West Pier. Maintenance dredging associated with these areas is anticipated to require removal of approximately 313,000 cy to 1.3 mcy every year. A Dredged Material Management

Plan (DMMP) was prepared to evaluate potential placement options for the new work and maintenance dredged material associated with the Proposed Project Alternative (Anchor QEA LLC, 2015, Appendix E of the EIS). Estimated dredged material quantities are shown in Table 2.8-3 of the EIS. Estimated dredge quantities assume maintenance for a 30-year period. At this time, it is expected that new work dredging would occur using a mechanical/hopper dredge and maintenance dredging would occur using a hydraulic/cutterhead or mechanical/hopper dredges, as necessary.

The DMMP evaluated multiple placement alternatives for new work and maintenance dredged material. Sites considered for placement of dredged material include:

- Use as fill for the West Pier Expansion
- Twelve designated BU sites
- Thin-layer placement
- Candidate BU sites
- Placement in an approved ODMDS

All sites were evaluated based on feasibility, potential environmental impacts, cost, and suitability of material. Potential BU sites were evaluated based on capacity and distance to the dredge site, taking into consideration habitat value, stability, and sediment transport. Recommendations were made for each option (Anchor QEA LLC, 2015; see Appendix E of the EIS). Considering additional information is needed to finalize the recommendations of dredged material placement alternatives, the following summarizes the various placement options.

New work dredged material structurally suitable would be used for fill at the Project site. Any material not structurally suitable would be evaluated for potential beneficial use and possible placement at a designated or candidate BU site. The Mississippi Department of Marine Resources (MDMR) is pursuing a permit to designate an area in the BMC in Louisiana for beneficial use of dredged material. The goal of this designation is to provide a new BU site on the western side of the state to accommodate material generated from private and public dredging projects to meet the requirements of Mississippi's beneficial use law.

During the DMMP evaluation, the Port began discussions with the MDMR/USACE Beneficial Use Group (BUG) on using the BMC as a placement area for suitable dredged material from the Port (see Figure 1). For the proposed PGEP, the BUG was in favor of a BU site instead of an ODMDS. As such, the BMC is the recommended placement alternative for the new work dredged material for the proposed Project (Anchor QEA LLC, 2015, Appendix E of the EIS). If a suitable site is identified, appropriate coordination would occur in the future. The BMC BU site would function to provide needed particulate material for shoreline nourishment and as protection from shoreline erosion on the Mississippi and Louisiana coasts. If the BMC is not permitted prior to dredging, and no other suitable BU sites are available, the Pascagoula ODMDS (see Figure 1.2-1 of the EIS) would be used for disposal of new work dredged material if the material is determined to be in compliance with Section 103 of the MPRSA (33 USC 1413). New work, dredged material not suitable for beneficial use would also be placed in the Pascagoula ODMDS if it meets the criteria in Section 103 of the MPRSA. If the dredged material is not suitable for the ODMDS, the material would be placed in an approved and permitted upland disposal

site(s). The Port would be responsible for maintenance dredging of those areas outside of Federal jurisdiction. Maintenance dredged material will be disposed of as discussed in the DMMP (Anchor QEA LLC, 2015, Appendix E of the EIS). As with the use of a BU site, the use of thin-layer placement sites for the proposed Project would be handled under a separate and independent permitting process.

c. Authority and Purpose

The purpose of the proposed Applicant's Proposed Project Alternative is to increase throughput capabilities at the Port beyond 1.0 million TEUs annually and stimulate the local, regional, and state economy by creating direct, indirect, and induced jobs. An expanded footprint would allow the Port to increase container throughput to 1.7 million TEUs per year by 2060. The screening process used to identify practicable alternatives is described in Sections 2.3 through 2.6 of the EIS. The USACE sought additional avoidance and minimization measures through the regulatory review process in cooperation with the National Marine Fisheries Service (NMFS), MDMR, and the Mississippi Department of Environmental Quality (MDEQ). Alternatives that avoided water dependency were considered but determined not to meet the Applicant's purpose and need (see Section 1.5 of the EIS).

d. General Description of Dredged or Fill Material

(1) General Characteristics of Material

Almost all information within this 404(b)(1) evaluation is from the DMMP (Anchor QEA LLC, 2015, Appendix E of the EIS) and EIS, unless otherwise cited. Seven borings from the historical boring logs and sediment test results from the USACE channel deepening (USACE, 1992) and widening contract documents (USACE, 2009) were selected for evaluation based on their location to the proposed Turning Basin Expansion. The borings were classified using the Unified Soil Classification System (USCS), which describes the soil's grain size and texture. The majority of the sample material is classified as fine grained medium to high plasticity organic silt and clay. Other materials that were identified include silty and clayey sands and inorganic silts and clays (Anchor QEA LLC, 2015, Appendix E of the EIS).

The USACE (2011) dredging history classifies the Anchorage Basin maintenance materials as soft to very soft silts and clays. For the 2011 FNC widening, the USACE performed acoustic density profiles and profiles along the Sound Channel bottom, which indicated the presence of fluid mud, as reported previously in available literature (McAnally et al., 2007). The Anchorage Basin was not part of the FNC widening project, thus the profiles do not extend into this area; however, it is reasonable to assume that fluid mud is also present in the Basin. Detailed information regarding sediment quality and quantity is described in the DMMP (Anchor QEA LLC, 2015, Appendix E of the EIS).

(2) Quantity of Material

The Applicant's Proposed Project Alternative will require removal and placement of approximately 7.5 mcy of sediment for the expansion of the piers, berthing areas, and Turning Basin.

e. Description of the Proposed Discharge

(1) Location

New work dredged material structurally suitable would be used for fill at the Project site. The recommended placement alternative for the dredged material from the West and East Pier Expansion, North Harbor and West Pier berthing areas, and Turning Basin expansion that is not structurally suitable for fill at the Project site is a permitted BU site. During the DMMP evaluation, the Port began discussions with the MDMR/USACE Beneficial Use Group (BUG) on using the BMC (Figure 8-1 of the DMMP) as a placement area for the dredged material from the Port (Anchor QEA LLC, 2015, Appendix E of the EIS). MDMR is currently working with Louisiana state officials to pursue a permit to designate a site within the easternmost areas of the BMC in Louisiana with adequate capacity for beneficial use of dredged material. Maintenance dredged material would be disposed of as discussed in the DMMP (Anchor QEA LLC, 2015, Appendix E of the EIS). As with the use of a BU site, the use of thin-layer placement sites for the proposed Project would be handled under a separate and independent permitting process.

(2) Size

The BMC is the recommended BU site for the Applicant's Proposed Project Alternative. Survey data is necessary to establish the actual capacity of the site and proposed placement (i.e., discharge) locations. The BMC is a complex that encompasses approximately 30,290 acres and includes islands, bays, and open-water lakes, specifically False Mouth Bay, Bay Boudreau, Drum Bay, and Shell Island Lake (Anchor QEA LLC, 2015; CH2M HILL 2011; T. Baker Smith, 2006). For practical purposes, the site currently is considered to have an unlimited capacity, which will need to be verified prior to BU site selection. Surveys of current and planned upland areas are also needed to determine the indigenous vegetation coverage and proposed application methods (Anchor QEA LLC, 2015, Appendix E of the EIS).

(3) Type of Site and Habitat

The proposed BMC site would function to provide needed particulate material for shoreline nourishment and as protection from shoreline erosion on the Mississippi and Louisiana coasts. Direct habitat affected by placement is estuarine mud and sand bottoms.

(4) Time and Duration of Discharge

It is anticipated that construction of the proposed Port expansion would not occur until the market demand at Gulfport supports additional growth (expected in approximately 2017). Although the precise timing of a construction start date is unknown, MSPA assumes construction would be initiated to alleviate market demands beginning in the expected year 2018. Maintenance events and discharges would occur for the life of the project.

f. Description of Disposal Method

Dredging activities for the Applicant's Proposed Project Alternative would be performed via one or a combination of three options: hopper, mechanical, or hydraulic cutterhead dredge. The dredge type would depend on the disposal location and required placement activity.

II. FACTUAL DETERMINATIONS

a. Physical Substrate Determinations

(1) Substrate Elevation and Slope

Site details of the BMC BU site are still to be determined; however, the long-range goal of the BU site is to create mounds to encourage habitat development, intertidal circulation, and habitat diversity (Anchor QEA LLC, 2015, Appendix E of the EIS). Elevation and slope would vary from below sea level to several feet above sea level at the BMC BU site.

(2) Sediment Type

Sediments studied for the West Pier Expansion indicate a composition of low plasticity silts. Turning Basin sediment studies indicate mostly clays, and studies for channel sediments indicate mostly sands (Section 5 of the DMMP provides details of these sediment analyses).

(3) Dredged/Fill Material Movement

Although site details of the BMC BU are still to be determined, the long-range goal of the BU site is to create mounds to encourage habitat development, intertidal circulation, and habitat diversity (Anchor QEA LLC, 2015, Appendix E of the EIS). Elevation and slope would vary from below sea level to several feet above sea level at the BMC BU site. Any materials lost overtime due to general erosion or storm events are anticipated to remain within the system, since the location is not within the littoral drift.

(4) Physical Effects on Benthos

Some benthic fauna would be adversely affected by placement of materials. Benthic faunal recolonization of areas impacted by dredging and dredged material disposal can occur through vertical migration of buried organisms through the dredged material, immigration of post-larval organisms from the surrounding area, larval recruitment from the water column, and/or sediments slumping from the side of the dredged area (Bolam and Rees, 2003; Newell et al., 1998). Recolonization would not be anticipated in the widened portion of the channel.

(5) Other Effects

None identified.

(6) Actions Taken to Minimize Impacts

This Project was fully coordinated with State and Federal resource agencies, and their comments have been incorporated into the development of the Project and EIS to the maximum extent practicable. During construction, proper Best Management Practices (BMPs) would be implemented to minimize impacts on the biological and physical environment. The Applicant's Proposed Project Alternative would not result in loss of wetlands and would prefer to employ BU sites.

b. Water Circulation, Fluctuation, and Salinity Determinations

(1) Water

Minimal effects are expected from the Applicant's Proposed Project Alternative on water exchange and inflows and salinity. There will be no changes to the amount of freshwater inflows in the Project area. Overall, no significant adverse impacts on hydrodynamics are expected due to the primary influences of tides, winds, and salinity from the Gulf in the study area.

(a) Salinity

Freshwater inflows and salinity levels would not be altered by the Applicant's Proposed Project Alternative. The area of water exchange with the near-shore Gulf would increase insubstantially compared to the total area of exchange within the study area. The multiple, wide passes where water moves between the Mississippi Sound and the Gulf are substantially greater in area than the area of exchange created by widening and deepening considered for the Port. Consequently, minimal to no measurable effect would occur as a result of the Proposed Project Alternative on salinity within the study area, Gulf, or Mississippi Sound.

(b) Water Chemistry

Measurable impacts from chemical contaminants, such as heavy metals, synthetic organic compounds, cyanide, and nutrients are not expected to occur. This conclusion is based on monitoring and laboratory bioassays conducted since 2000. Chemicals of potential concern are present in water and sediment, and different analytical tests evaluated the likelihood contaminants would impact water or sediment quality. Results of these analyses (see bullets below) indicate that no extensive or severe chemical contamination occurs in the harbor. The harbor is the portion of the Project surrounded by industry and may have been most susceptible to chemical contamination from adjacent industries, berthed vessels, loading and unloading operations, and stormwater runoff from industrial areas. Similarity between sediment composition in the harbor, FNC, ODMDS, and placement sites, which are considered minimally impacted in the Sound, combined with the general lack of contaminants of concern, indicate that sediment quality impacts resulting from placement of dredged materials using any of the placement options considered are not likely to occur (Anchor QEA LLC, 2015, Appendix E of the EIS).

Thompson Engineering Inc. (2015) recently completed testing of potential dredged material associated with the Port of Gulfport Spool Base located adjacent to the existing Port of Gulfport East Pier, in accordance with the Sampling and Analysis Plan (SAP) approved on February 27, 2015 by the MDMR. Sediment analytical results from the recent testing did not identify any detectable concentrations of volatiles or pesticides in the two sediment core borings but found one constituent (acenaphthene) above the Screening Quick Reference Tables threshold effects level (TEL) and probable effects level (PEL) screening levels; however, the reported concentration was below the Mississippi Department of Environmental Quality (MDEQ) Tier 1 Target Remediation Goals (TRGs). Several dioxins and furans were detected in both sediment samples but were also below the MDEQ Tier 1 TRGs. The arsenic concentrations reported in both sediment samples exceeded the MDEQ Tier 1 TRGs and the TEL but were both below the PEL. All other detectable concentrations of constituents were either below the TEL, PEL, and MDEQ Tier 1 TRGs or below the MDEQ Tier 1 TRGs and between the TEL and PEL screening levels. As stated above, placement of the proposed dredged material from the East Pier as part of the proposed Project would meet all applicable regulations and be disposed of in permitted and approved upland disposal areas.

Elutriate testing (Anchor QEA LLC, 2013) found ammonia and several total and dissolved metals, including arsenic, chromium (total), copper, lead, nickel, selenium, and zinc that were above the minimum reporting limits (MRL) in one or more samples. Cadmium, chromium VI, mercury, and silver were not detected above the MRL in any elutriate sample. In all samples, cyanide, organometallic compounds, semivolatile organics, and pesticides were not detected in any of the elutriate samples. Dissolved copper in the GP-DU5-Comp elutriate sample exceeded the U.S. Environmental Protection Agency (EPA) and Mississippi State Water Quality Criteria by 2.3 times.

For the water quality samples, all analytes were below EPA and Mississippi State Water Quality Criteria (Anchor QEA LLC, 2015, Appendix E of the EIS). Ammonia, cyanide, and pesticides were not detected in the samples. Only total arsenic and total selenium were detected at concentrations greater than the MRL. Dissolved arsenic and selenium were also detected in the samples. Total chromium (III and IV), dissolved lead, and pentachlorophenol were estimated at concentrations below the MRL. All other total and dissolved metals were not detected (Anchor QEA LLC, 2013).

Spills could result in detrimental effects to water chemistry. Increased transit of vessels along the FNC may increase the risk of spills. The probability of increased contamination cannot be quantified but would be expected to be low based on the low frequency of incidents in the past (Anchor QEA LLC, 2015, Appendix E of the EIS) and increased State and Federal focus on spill prevention and response over the past 20 years.

(c) Clarity

There may be some temporary and localized increases in turbidity during excavation and placement. Effects on water clarity are expected to be temporary and would generally be limited to periods of dredging and placement activities. Water clarity would be expected to return to background levels shortly after operations are completed. It is important to

note that periodic turbidity naturally occurs in Mississippi Sound, and there are no resources (e.g., sea grass) within the Project footprint which are particularly sensitive to short-term reductions in water clarity. BMPs would be implemented to help control turbidity within the immediate dredging area.

(d) Color

Water immediately surrounding some construction areas (i.e., where dredging or fill placement would occur) may become discolored temporarily due to disturbance of the sediment. BMPs would be implemented to reduce and control turbidity during construction and material placement.

(e) Odor

Portions of the material may be anoxic, and temporary and localized sulfidic odors could occur during operations.

(f) Taste

No detectable impact to the environment would be expected. There are no drinking water intakes in the Project area, since it is a marine environment.

(g) Dissolved Gas Levels

Dissolved oxygen has been measured near 0 milligrams per liter (mg/L) below water depths of 30 feet in the harbor (USACE, 2006) and in the middle and bottom of the water column in deepened parts of the Turning Basin. Dredging may cause some mixing of bottom water with low oxygen and oxygenated water higher in the water column, resulting in lowered oxygen concentrations higher in the water column. Additionally, disturbed sediment with oxygen-demanding materials may increase oxygen demand in bottom waters and at the placement areas. Possible episodes of lowered oxygen concentrations would be localized and temporary and expected to return to pre-dredging conditions within a day after dredging and placement activities ceased. For other potential dissolved gases, the Project would not create conditions that would cause an increase in levels (e.g., increased solar gain, increased aeration, or additional nutrient loading).

(h) Nutrients

Project implementation would not create conditions that would increase nutrient loading, and no detectable negative impact would be expected.

(i) Eutrophication

Project implementation would not create conditions that would increase nutrient loading, and eutrophication would not be expected.

(j) Others as Appropriate

None known.

(2) Current Patterns and Circulation

Circulation patterns in the Project area are driven by astronomical tides, winds, and to a lesser degree, freshwater discharge (Orlando et al., 1993; Seim et al., 1987). Mississippi Sound has substantial openings in the barrier island system. The estimated footprint of the Port would be 650.5 acres, which approximately 0.05 percent of Mississippi Sound's area; thus, the Applicant's Proposed Project Alternative would not measurably alter current patterns and circulation.

(a) Current Patterns and Flow

Maintenance dredging frequency may not increase; however, the maintenance dredged material volume may increase (Anchor QEA LLC, 2015, Appendix E of the EIS). All dredge placement sites were evaluated based on feasibility, potential environmental impacts, cost, and suitability of material. Potential BU sites were evaluated based on capacity and distance to the dredge site, taking into consideration habitat value, stability, and sediment transport.

(b) Velocity

The channel cross-section of the proposed Project footprint is an insignificant increase when compared to the total area of exchange taking place in the study area. Therefore, velocities are not expected to increase to any measureable degree.

(c) Stratification

Adverse impacts to stratification are not anticipated, since the Applicant's Proposed Project Alternative would not be expected to measurably alter circulation patterns.

(d) Hydrologic Regime

Adverse impacts to hydrologic regime are not anticipated, since the Applicant's Proposed Project Alternative would not be expected to measurably alter circulation patterns. There will be no modifications or diversions of freshwater inflow; therefore, freshwater inflows would not be affected by the Applicant's Proposed Project Alternative.

(3) Normal Water Level Fluctuations

The average water surface elevation through the study area would be unaffected by the Applicant's Proposed Project Alternative, and no significant increase in tidal amplitude would be expected.

(4) Salinity Gradients

Freshwater inflows and salinity gradients would not be altered by the Applicant's Proposed Project Alternative. The area of water exchange with the near-shore Gulf would not increase substantially compared to the total area of exchange within the study area. The multiple, wide passes where water moves between Mississippi Sound and the Gulf are substantially greater in area than the area of exchange created by widening and deepening considered for the Port. Consequently, minimal to no measurable effect would occur as a result of the Proposed Project Alternatives on salinity gradients within the study area, Gulf, or Mississippi Sound.

(5) Actions that Will Be Taken to Minimize Impacts

In addition to the refinement of the action alternatives and planning and coordination with State and Federal agencies, fill will be placed to avoid impacts to various resources, such as threatened and endangered species habitat, cultural resources, and seagrasses. Also, BMPs will be implemented during construction activities to further minimize the potential of adverse effects on these resources.

c. Suspended Particulate/Turbidity Determination

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site

An increase in suspended particulates and concomitant turbidity levels may occur during placement operations. These are temporary and localized events, and appropriate BMPs would be implemented. The BU site would likely incorporate containment efforts depending on the proposed placement method. BMPs would be used during any placement operations to further minimize any potential adverse effects.

(2) Effects on Chemical and Physical Properties of the Water Column

(a) Light Penetration

Turbidity levels will be temporarily increased during placement operations. These are temporary and localized events, and appropriate BMPs would be implemented.

(b) Dissolved Oxygen

Recent water column monitoring showed bottom water dissolved oxygen can be low, approaching 0 mg/L, particularly in the Turning Basin (Appendix G of the EIS; EPA, 1999, 2013, Orlando et al., 1993; USACE, 2006). Dissolved oxygen in the middle and bottom of the water column in deepened parts of the Turning Basin would be measurably lower and most of the time would remain lower than adjacent shallower waters in the study area and Mississippi and Chandeleur sounds. Low dissolved oxygen conditions may exclude some types of nekton and benthic macroinvertebrates, which require oxygen levels above 4 mg/L. Since the increased area with low dissolved oxygen would be very small, it should not measurably affect ecological health in the study area, Gulf, or

Mississippi Sound. Dredging may cause some mixing of anoxic bottom water with aerated surface water, possibly resulting in hypoxic surface conditions. Additionally, disturbed sediment with oxygen-demanding materials may increase oxygen demand in bottom water and at the placement areas. However, these possible hypoxic episodes would be localized and temporary and expected to return to predredge conditions within a day after dredging and placement activities ceased.

(c) Toxic Metals and Organics

Measurable impacts from chemical contaminants like heavy metals, synthetic organic compounds, cyanide, and nutrients are not expected to occur. This conclusion is based on monitoring and laboratory bioassays conducted since 2000. The following are the primary conclusions drawn from the various analyses:

- Chemicals in water samples from Gulfport Harbor in November and December 2012 were below EPA and Mississippi State Water Quality Criteria (Anchor QEA LLC, 2015, Appendix E of the EIS; Appendix G of the EIS).
- Dissolved copper was the only chemical in elutriate samples collected from Gulfport Harbor in November and December 2012 that exceeded EPA and Mississippi State Water Quality Criteria (Anchor QEA LLC, 2015, Appendix E of the EIS). Samples were collected for metals from different locations throughout the study area and all were below Mississippi Water Quality Criteria (see Appendix G of the EIS). Earlier elutriate monitoring showed levels of ammonia, dieldrin, and endrin high enough to exceed Mississippi Water Quality criteria with levels of metals, PCBs, and other pesticides below criteria or detectable levels (USACE, 2006).
- Solid phase and suspended particulate phase toxicity bioassays indicated Turning Basin sediments were not acutely toxic (Anchor QEA LLC, 2015, Appendix E of the EIS). EPA (2013) and USACE (2006) evaluated sediment toxicity and found sediments from the FNC were not acutely toxic.
- Turning Basin sediment contaminants of concern did not bioaccumulate in concentrations statistically greater than U.S. Food and Drug Administration's action levels (Anchor QEA LLC, 2015, Appendix E of the EIS).
- A review of EPA Superfund sites indicated that no Superfund sites are located adjacent to the harbor (Anchor QEA LLC, 2015, Appendix E of the EIS).
- Review of the USCG's National Response Center website of potential hazardous material releases from 2001 to 2010 revealed no reports of contamination resulting from loss of cargo (Anchor QEA LLC, 2015, Appendix E of the EIS).
- Thompson Engineering Inc. (2015) recently completed testing of potential dredged material associated with the Port of Gulfport Spool Base located adjacent to the existing Port of Gulfport East Pier, in accordance with the Sampling and Analysis Plan (SAP) approved on February 27, 2015, by the MDMR. Sediment analytical results from the recent testing did not identify any detectable concentrations of volatiles or pesticides in the two sediment core

borings, but found one constituent (acenaphthene) above the Screening Quick Reference Tables TEL and PEL screening levels; however, the reported concentration was below the MDEQ Tier 1 TRGs. Several dioxins and furans were detected in both sediment samples but were also below the MDEQ Tier 1 TRGs. The arsenic concentrations reported in both sediment samples exceeded the MDEQ Tier 1 TRGs and the TEL but were both below the PEL. All other detectable concentrations of constituents were either below the TEL, PEL, and MDEQ Tier 1 TRGs or below the MDEQ Tier 1 TRGs and between the TEL and PEL screening levels. As stated above, placement of the proposed dredged material from the East Pier as part of the proposed Project would meet all applicable regulations and be disposed of in permitted and approved upland disposal areas.

(d) Pathogens

None expected or found.

(e) Aesthetics

The Project has been designed and selected in coordination with resource agencies to avoid detrimental environmental impacts and reduce or eliminate impacts on the aesthetic value of the area. The BMC BU site would contribute to barrier island development and protection, which should preserve and increases area aesthetics.

(f) Others as Appropriate

None known.

(3) Effects on Biota

Dredging and disposal activities as part of the Proposed Project Alternative would have immediate impacts to immobile benthic organisms at those locations. Furthermore, water-column turbidity, in close proximity to these activities, may temporarily impair the ability of organisms to filter feed or sight feed and block photosynthesis. However, these disturbances would be short term, typically lasting less than a day or within the timeframe of the tidal cycle.

(4) Actions Taken to Minimize Impacts

In addition to the refinement of the action alternative and planning and coordination with State and Federal agencies, fill placement areas will be located to avoid impacts to various resources, such as threatened and endangered species habitat, cultural resources, or seagrasses. Placement areas will be developed in coordination with State and Federal natural resource agencies. Also, BMPs will be implemented during construction activities to further minimize the potential of adverse effects on these resources.

d. Contaminant Determinations

Measurable impacts from chemical contaminants like heavy metals, synthetic organic compounds, cyanide, and nutrients are not expected to occur. Metals were detected at concentrations below their respective effects range median (ERM) values at the 10 Dredge Unit stations and two reference locations. Only two polycyclic aromatic hydrocarbons (PAHs) were detected above ERM values at one station, and one PAH was detected above the ERM value at one reference location. Total petroleum hydrocarbons (TPHs), pesticides, organometallic compounds, and semivolatile organic compounds (SVOCs) were either not detected at a level of concern or not detected at all in the samples from the Gulfport Turning Basin and reference locations. Chemical analyses showed Gulfport sediments and reference sediments were similar and generally lacking in contaminants of concern. Details of contaminant determinations are in the DMMP (Anchor QEA LLC, 2015, Appendix E of the EIS).

No detectable concentrations of volatile organics or pesticides were identified in the samples collected from the immediate vicinity south of the East Pier in May 2015 as part of the proposed (unrelated) Port of Gulfport Spool Base project. Multiple semivolatile organics, polychlorinated biphenyls, dioxins and furans, and metals were detected in the samples. The sediment analyses found only one constituent (acenaphthene – an SVOC) at concentrations greater than Federal TELs and PELs; however, the concentrations were less than the MDEQ TRGs. Specific dioxins and furans had concentrations that exceeded their MDEQ TRGs for unrestricted soil but were less than their TRGs for restricted soil. Total concentrations for dioxins and furans were less than the MDEQ Level I TRGs. The arsenic concentrations in both sediment samples exceeded the MDEQ TRGs and the TEL, but were less than the PEL. All other detectable constituent concentrations were either less than their TELs, PELs, and MDEQ TRGs or were less than the MDEQ TRGs and between their TELs and PELs. The effects of the ten-day sediment toxicity test identified no significant mortality in the organisms tested.

e. Aquatic Ecosystem and Organism Determinations

(1) Effects on Plankton

Construction and placement operations are expected to have temporary, localized impacts on plankton from potential increased turbidity levels.

(2) Effects on Benthos

Some benthic fauna would be adversely affected by placement of materials. Benthic faunal recolonization of areas impacted by dredging and dredged material disposal can occur by organisms migrating vertically through the dredged material, immigration of post-larval organisms from the surrounding area, larval recruitment from the water column, and/or sediments slumping from the side of the dredged area (Bolam and Rees, 2003; Newell et al., 1998).

(3) Effects on Nekton

Construction and placement operations are expected to have temporary, localized impacts on nekton from potential increased turbidity.

(4) Effects on Aquatic Food Web

Turbidity from total suspended solids (TSS) can interfere with light penetration and reduce phytoplankton and macrophyte photosynthesis (Wilber and Clarke, 2001); although, little if any macrophytes occur in the Project area. Reduced light penetration due to turbidity may have a short-term impact on zooplankton populations, since they graze on microalgae. Such reductions in primary productivity would be localized, confined to the immediate area of the dredging and placement operations, and would be limited to the duration of the plume at a given site. Conversely, the decrease in primary production, presumably from decreased available light, can be offset by an increase in nutrient content which are released into the water column during dredged material placement activities (Morton, 1977; Newell et al., 1998). These nutrients may act to enhance the area surrounding the dredging activities, thus increasing productivity. Although, as previously mentioned, the increase in available nutrients will likely be minimal, and significant eutrophication would not be expected. Appropriate BMPs would be implemented to minimize or avoid detrimental effects to aquatic trophic dynamics.

(5) Effects on Special Aquatic Sites

No direct impacts to Special Aquatic Sites are anticipated as a result of the Applicant's Proposed Project Alternative. Seagrass beds, the only special aquatic sites near the Project footprint, occur approximately 5 miles from the Project area.

f. Proposed Disposal Site Determinations

(1) Mixing Zone Determination

The placement of dredge material in the coastal areas of Mississippi would be managed by Mississippi's requirement that turbidity not exceed 50 Nephelometric Turbidity Units above background outside a 750-foot mixing zone around dredged material placement areas in coastal areas of Mississippi (Anchor QEA LLC, 2015, Appendix E of the EIS).

(2) Determination of Compliance with Applicable Water Quality Standards

MDEQ has been part of Project coordination, and a Joint Application and Notification for water quality standards review has been submitted.

(3) Potential Effects on Human Use Characteristics

(a) Municipal and Private Water Supply

No apparent private, public, or industrial water wells registered with the State of Mississippi would be destroyed and/or affected by the Applicant's Proposed Project

Alternative based on their proximal distances and completed depths below surface grade. Furthermore, the Project is entirely within the marine/estuarine environment and does not include freshwater resources.

(b) Recreational and Commercial Fisheries

During dredging and placement, some localized areas may be temporarily excluded from recreational and commercial fish/shellfish harvest, and the dredging activities may temporarily impact reproduction and recruitment of certain species. However, these impacts would be limited in space and time and are not expected to have long-term impacts to the value of these resources.

Dredging and fill activities for the Proposed Project Alternative would have a temporary impact on recreational and commercial boaters moving along the coastline. Boaters would be required to travel further out into the Gulf to circumvent Port structures, and it would therefore take more time than currently to navigate around the Port. However, these impacts would be temporary and short term.

There would be negligible, if any long-term impact with respect to water quality, and there should be no long-term impacts to fisheries once the Project is complete.

(c) Water-related Recreation

Boating and recreational/commercial fishing are important uses in the study area. As discussed above, there should be no long-term impacts associated with the project. However, short-term impacts may be associated with localized increases in turbidity, causing boaters to avoid the area. In addition, some of the areas will be excluded from boaters due to dredging and placement activities. Impacts to recreational boating would be nominal.

(d) Aesthetics

The Applicant's Proposed Project Alternative is designed to minimize any adverse impacts to the environment and includes beneficial use of dredged material for shoreline nourishment and as protection from shoreline erosion. The Applicant's Proposed Project Alternative is consistent with current aesthetics in the Project and study area.

(e) Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves

No national parks, historic monuments, national seashores, etc. occur within the Project area. Barrier islands associated with Gulf Islands National Seashore, including East Ship Island, West Ship Island, and Cat Island, are at a sufficient distance from Gulfport that recreational access to them and Fort Massachusetts would not be impacted by the expansion of the Port.

g. Determination of Cumulative Effects on the Aquatic Ecosystem

Cumulative impacts due to past, current, and reasonably foreseeable future projects (1 to 3 years) in concert with the Applicant's Proposed Project Alternative are not anticipated to have significant adverse impacts to most environmental resources within the Project area. The majority of environmental impacts associated with the other projects will be temporary and would comply with various State and Federal environmental regulations.

Projects included in the cumulative impact analysis that involve dredging may result in temporary impacts such as increased turbidity, air emissions, and long-term impacts to the harbor bottom.

Fill actions of some of the evaluated projects would have cumulative adverse impact on estuarine mud and sand bottom habitat and wetlands. Dredging associated with some evaluated projects would cumulatively result in conversion to deeper habitats, and dredging and placement of material would result in temporary and localized turbidity increases, removal of benthic communities, and burial of benthic organisms at placement areas. Most adverse impacts would be offset by mitigation and should not have a net cumulative adverse effect. Existing alterations to sediment transport patterns would be continued by several evaluated projects; however, negative effects would be offset to some unknown degree from beneficial use of dredged material and benefits realized from the Coastal Impact Assistance Program and Mississippi Coastal Improvement Program projects.

A cumulative increase in vessel traffic in the Project area would increase the risk of pollution, which increases the potential risk to the aquatic ecosystem. The proposed PGEP, and several other evaluated projects, would result in stabilization, protection, and beneficial use actions that would have a cumulative beneficial effect on aquatic ecosystems.

Regarding federally listed species, cumulative impacts of this Project and other evaluated projects would include displacement of piping plover, listed sea turtles, West Indian manatee, and Gulf sturgeon during construction, dredging, and placement activities, as well as degradation of habitat quality. As previously mentioned, the increased risk of spill and pollution could also translate to increased likelihood of impacts to federally listed species. This and several other evaluated projects could result in the increased cumulative risk of mortality or injury to listed sea turtles and Gulf sturgeon from impingement or entrainment during dredging activities; however, it is assumed avoidance, minimization, and mitigation measures would be in place to prevent jeopardizing future existence of these listed species. Several projects involving restoration, stabilization, protection, and beneficial use actions would have cumulative beneficial effects on threatened and endangered species.

Existing governmental regulations will address the Project impacts that could threaten the health and sustainability of the region, which can influence local and ecosystem-level conditions. Natural resources in the area are provided protection through coordination with stakeholder groups, local organizations, and State and Federal regulatory agencies implementing regulations such as the Clean Water Act, National Marine Fisheries Act, Coastal Zone Protection Act, Endangered Species Act, and the Clean Air Act. This collaboration concerning regulation of impacted resources should prevent or minimize potential negative impacts to these resources.

h. Determination of Secondary Effects on the Aquatic Ecosystem

The expansion of the Port would increase the industrial land uses of the greater Gulfport metropolitan area and would contribute to ongoing residential and commercial growth and development, which may indirectly lead to impacts to terrestrial vegetation communities. Continued moderate economic growth in the study area, which is anticipated with or without the Proposed Project Alternative, would perpetuate ongoing residential and commercial growth and development, having potential cumulative adverse impacts to some natural resources within the study area.

Some secondary effects on the aquatic ecosystem are expected to be beneficial due to contribution of sediments to provide needed particulate material for shoreline nourishment and as protection from shoreline erosion on the Mississippi and Louisiana coasts.

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Findings of Compliance with Section 404(b)(1) Guidelines Port of Gulfport Expansion Project Mississippi State Port Authority

1. No significant adaptations of the Guidelines were made with respect to the evaluation completed for this project.

2. The Applicant's Proposed Project Alternative is the result of a thorough evaluation of alternatives.

3. The Applicant's Proposed Project Alternative will not violate any applicable State or Federal water quality criteria or toxic effluent standards of Section 307 of the Clean Water Act.

4. The Applicant's Proposed Project Alternative will not jeopardize the existence of any federally or State-listed threatened or endangered species and/or their critical habitat or violate any protective measures for any sanctuary. Various resource agencies, including U.S. Fish and Wildlife Service and National Marine Fisheries Service, have been consulted regarding potential issues of any federally or State-listed threatened or endangered species and/or their critical habitat. Appropriate avoidance and minimization measures would be implemented accordingly, based on agency coordination.

5. The Applicant's Proposed Project Alternative will not result in adverse effects on human health and welfare, including municipal and private water supplies, recreation and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. There are no significant adverse impacts expected to the aquatic ecosystem diversity, productivity and stability, or recreational, aesthetic, and economic values.

6. Appropriate steps to minimize potential adverse impacts on the aquatic system include close coordination with state and Federal resource agencies during final Project design prior to construction to incorporate all valid suggestions.

7. Based on the guidelines, the Applicant's Proposed Project Alternative is specified as complying with the requirements of the Section 404(b)(1) guidelines.

Craig Litteken
Chief, Environmental Section
U.S. Army Corps of Engineers, Mobile District

Date

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Appendix N

Roadway and Rail Traffic Analysis

APPENDIX N
TRAFFIC FORECASTS AND IMPACT ANALYSIS
PORT OF GULFPORT EXPANSION PROJECT

Prepared for:

U.S. Army Corps of Engineers
Mobile District 109 Saint Street
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August 2015

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Acronyms and Abbreviations

AADT	Average Annual Daily Traffic
ARRA	American Recovery and Reinvestment Act
CBD	Central Business District
CSX	CSX Corporation
FHWA	Federal Highway Administration
GRPC	Gulf Regional Planning Commission
HCM	Highway Capacity Manual
I-10	Interstate Highway 10
KCS	Kansas City Southern Railway
LOS	level of service
LRP	Long-range Plan
MDOT	Mississippi Department of Transportation
MEV	million entering vehicles
mph	miles per hour mph
MSPA	Mississippi State Port Authority
MULTIPLAN	Mississippi's Unified Long-range Transportation Infrastructure Plan
PGEP	Port of Gulfport Expansion Project
Port	Port of Gulfport
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
TEUs	Twenty-foot Equivalent Units
TIGER	Transportation Investment Generating Economic Recovery
TWLTL	two-way left-turn lane
US	U.S. Highway

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1.0 AFFECTED ENVIRONMENT

1.1 ROADWAY AND RAIL TRAFFIC

This section describes the recent history and existing conditions pertaining to transportation demand and supply in and around the Port of Gulfport (Port). Since the Port is an intermodal freight transfer center, this description addresses both freight and passenger transportation modes.

The project study area for roadway transportation impacts extends from Landon Road north of Interstate Highway 10 (I-10) to U.S. Highway (US) 90 on the south, and from US 49 on the east to Canal Road and 30th Avenue on the west. This study area covers all roadways that can be used by Port commuters and trucks that access intercity highways such as I-10 and US 49. This study area also fully encompasses the Mississippi Department of Transportation's (MDOT) planned I-310 Project, and includes all roads that would be directly affected by its completion.

1.1.1 Project Location and Access

The entire Port site is situated south of US 90 (West Beach Boulevard), which runs along the Gulf Coast and between 30th Avenue and US 49 (25th Avenue). The Gulfport Central Business District (CBD) is situated immediately north of US 90, and a marina and recreational beach area are located just east of the site.

The current primary points of vehicular access to the Port are at signalized intersections along US 90 at 30th Avenue and at US 49 (25th Avenue). A secondary unsignalized access point is also available between these intersections at Copa Boulevard.

The freight rail (Kansas City Southern [KCS] Railway) connection to the Port is also situated at Copa Boulevard. The rail line splits into two separate alignments just north of US 90. The west alignment extends into the main West Pier of the Port. The east alignment extends to the smaller East Pier. North of the Port, the KCS rail line extends inland to the north and provides cross connection access to the east-west CSX Corporation (CSX) freight rail line that runs along the Gulf Coast.

1.1.2 Transportation Demand

The Port generates travel demand for both freight and passengers. The passenger travel is associated with site workers and associated support services. As an intermodal Port, freight is accommodated by truck, freight rail, and ocean-going freight vessels.

1.1.2.1 Freight Demand

Prior to Hurricane Katrina (August 2005), the tonnage of freight handled by the Port had been growing steadily. From 2002 to 2005, freight traffic handled by the Port grew steadily from 2.1 to 2.5 million short

tons of cargo per year. However, after the hurricane, freight traffic declined to 1.5 million short tons in 2006, or 60 percent of the 2005 level due to capacity limitations from hurricane damage. In terms of container cargo volume, the number of Twenty-foot Equivalent Units (TEUs) grew from 154,000 in 2002 to 230,000 in 2005 before dropping to 170,000 in 2006. The number of vessel calls also declined from a range of 352 to 384 vessels per year between 2002 and 2005 to 225 vessels in 2006 (Mississippi State Port Authority [MSPA], 2006).

Improvements to the Port would result in additional annual freight transport activity, which would increase the number of trains of cargo using the KCS rail line. The previously completed speed improvements to the KCS rail line have generally reduced the blockage time at highway rail grade crossings. Delays in the southern limits of the line, from US 90 to 33rd Street (approximately the Gulfport Rail yard) are expected to decrease by 37 seconds, due to train lengths being shortened from 2,940 to 2,400 feet. Between 33rd Street and Polk Street crossing times are expected to increase, as longer trains (3,900 feet) leave the Gulfport Rail yard and travel north at 10 mph initially. These trains eventually increase their speed to 20 mph at Polk Street and 49 mph at Dedeaux Road, according to the KCS Railway Environmental Assessment. Because of the increase in travel speed for trains north of the Gulfport Rail yard, crossing delays may decrease by 67 to 146 seconds per crossing. Additional highway rail grade crossing blockages due to added train traffic could produce congestion issues if they occurred during daytime hours. However, since Port-related trains can only access the track between 10 PM and 7 AM, when traffic volumes are very low, there is no potential for congestion at highway-rail grade crossings. Furthermore, the analysis projects the duration of delays and frequency of delays caused by the additional train trips generated by the Proposed Project Alternative should fall within the same thresholds as the No-Action Alternative. Therefore, impacts associated with changes in rail transport activities at the Port are expected to be the same as described for the No-Action Alternative.

Although the Port's annual cargo volume is not back to pre-Katrina levels, it continues to grow. In 2010, the MSPA handled more than 2.15 million tons of cargo, 223,740 TEUs of containerized cargo, and 225 ships. Based on 2009 data from MSPA, top exports were containerized cargo (90 percent of tonnage) and linerboard. The total weight of exports was 650,000 short tons in 2009. Top imports were fruit (60 percent of tonnage), ores (30 percent), and containers (10 percent). The total weight of imports was 1.4 million short tons. Thus the balance of trade from a weight perspective consists of about 68 percent imports to 32 percent exports (MSPA, 2011). The Port has generally maintained the 200,000-TEU level of volume since 2003, representing about 0.5 percent of the U.S. total. Hurricane Katrina caused a significant disruption in volume and shares of the U.S. total, with declines in Gulfport as well as New Orleans in 2005 (American Association of Port Authorities, 2010).

Currently, 95 percent of container freight imports leave the Port on rubber tires with more than 40 truck lines servicing the Port daily (*Gulfport News*, 2010; World Trade, 2010). However, Mississippi Governor Haley Barbour announced in February 2010 that improvements to the freight rail line (KCS) between the Port and Hattiesburg (connecting to the Norfolk Southern mainline) had been funded by the American Recovery and Reinvestment Act (ARRA) of 2009. These recently completed improvements increase

freight rail capacity and mobility to the Port to help accommodate a larger portion of land-side freight traffic growth by rail.

1.1.2.2 Passenger Demand

At the current volume of 208,000 TEUs per year, the Port is staffed by 1,200 direct jobs, and generates 486 indirect jobs, and 540 induced jobs (MSPA, 2013a). According to the 2030 Harrison County Comprehensive Plan, over 90 percent of Harrison County residents travel to work in a personal vehicle alone, or as part of a carpool. Two-thirds of Harrison County residents commute more than 15 minutes to work. Keesler Air Force Base, the Naval Construction Battalion Center, and Beau Rivage Casino are the county's three biggest employers, and they are among the largest individual sources of travel to and from Biloxi and Gulfport (Harrison County, 2008).

1.1.3 Surface Transportation Network

The surface transportation network in the study area consists of an interstate highway, U.S. highways, state highways, and county and local roads that provide access to the Port, as well as private freight rail lines. Figure 1 shows a City of Gulfport roadway functional classification map that illustrates major thoroughfares and freight rail lines connecting to the Port (located on the small peninsulas along the Gulf Coast at the bottom of the map). Red routes indicate principal arterials providing access to the Port, while the blue route is I-10. I-310 is a proposed highway that is included in the Gulf Coast Regional Plan, and MDOT considers it as part of their No-Build scenario for future planning efforts. However, due to litigation, this project has been delayed, and it is unknown when the project will move forward. This transportation network accommodates both passenger travel flows by different travel modes for Port workers and freight flows that are transported by truck or rail to points inland. Though not shown on the map, ocean going vessels must approach the Port using a dredged shipping channel through the otherwise shallow Mississippi Sound. Thus the capacity of this channel is one of the issues affecting the potential for freight shipping growth at the Port.

1.1.3.1 Roadways

The following sections provide a summary of the existing conditions for the major roadways in the Project study area. These sections present historic traffic count data obtained from MDOT. In reviewing this information, it is important to note that most of the MDOT traffic counts are a product of an estimation procedure derived from a sample of traffic counts, not from a complete set of field traffic counts conducted every year. Thus, traffic count trends, at any given location, tend to follow previous trends and trends among other roads in the area until another traffic count is taken at the subject location to correct the estimated trend. When this occurs, there could be a dramatic shift in the level of traffic that occurs from before a traffic count year to the count year because the estimation procedure was not producing the correct estimate of the actual trend. For this reason, observed trends and shifts in the traffic count history need to be interpreted with these limitations in mind. In Tables 1, 5, 6, and 7, actual traffic counts are underlined while estimates are not.



Source: Gulf Regional Planning Commission (2003).

Figure 1
City of Gulfport Roadway Network and Classifications

1.1.3.1.1 US 49

US 49 (also known as 25th Avenue in the Gulfport CBD) is a designated hurricane evacuation route, runs north-south, and connects Gulfport to Hattiesburg, Jackson, and other locations via intersecting highways. Within the study area, US 49 connects the cities of Gulfport, Landon, New Hope, and Orange Grove. US 49 is the primary point of access to a major retail activity center just north of I-10 (Crossroads Center), the Gulfport-Biloxi International Airport south of I-10, and the Gulfport CBD north of US 90. The US 49 interchange with I-10 serves as an anchor for large commercial developments with numerous large retail stores and restaurants located in the immediate area (MDOT/Federal Highway Administration [FHWA], 2008). These commercial developments attract local residents as both an employment and shopping locale. On the south, US 49 ends on the Gulf Coast at US 90, and the south leg of this intersection is one of the entry roadways into the Port.

The existing US 49 roadway has a six-lane width from Clark Road (2.9 miles north of I-10) to US 90, a distance of 7.5 miles. However, the segment within the Gulfport CBD from 28th Street to US 90 has four designated through travel lanes, while the outer two lanes are used for right turns and as safety buffers for on-street angle parking at this time. There are four lanes north of Clark Road. The roadway is divided by either a physical median or a two-way left-turn lane over the entire length. Throughout the study area, US 49 has numerous access points, including several signalized and unsignalized intersections and a clover leaf interchange at I-10. The posted speed limit on the urban section of US 49 is 45 miles per hour (mph).

The KCS rail line runs north-south parallel to US 49 on the west side throughout Gulfport. South of I-10, the rail line is two to three blocks west of US 49, thus reasonably outside the area of influence of US 49 intersections. North of I-10, the rail line comes within 300 feet of US 49 at cross street intersections with Landon Road (at Crossroads Parkway), O'Neal Road, Clark Road, and Duckworth Road. All of these are currently two-lane roads as they cross the tracks.

As indicated in Table 1, 2012 Average Annual Daily Traffic (AADT) volumes on US 49 within the study area range from 15,000 to 58,000. The 2012 AADT volumes are smallest close to the Port and increase heading north towards I-10. These data suggest that a large proportion of the traffic on US 49 is generated within the urbanized area of Gulfport. US 49 provides direct access to shopping centers, industrial parks, the Gulfport-Biloxi International Airport, the Gulfport CBD, and the Naval Construction Battalion Center, as well as beach front recreation opportunities and the Port. Traffic volumes on US 49 north of I-10, which ranged from 48,000 to 58,000 in 2012, are also high relative to the section immediately north of the Port and the Gulfport CBD (north of 28th Street). Residential development north of I-10 has increased rapidly over the past 2 years, which has contributed to increased traffic volumes in the area (MDOT/FHWA, 2008). Traffic volumes in Table 1 generally depict stagnant or decreasing growth trends between 2007 and 2012 in most locations.

Table 1
Historical Two-Way AADT on US 49 within the Study Area

Jurisdiction	Location	2012	2011	2010	2009	2008	2007
Gulfport	North of Orange Grove Road	48,000	47,000	68,000	66,000	67,000	72,000
Gulfport	South of Dedeaux Road	48,000	47,000	64,000	62,000	63,000	65,000
Gulfport	North of I-10	58,000	63,000	64,000	62,000	63,000	65,000
Gulfport	South of I-10	34,000	34,000	60,000	59,000	60,000	64,000
Gulfport	South of Creosote Road	55,000	55,000	55,000	54,000	55,000	65,000
Gulfport	South of Airport Road	58,000	51,000	51,000	50,000	45,000	46,000
Gulfport	South of MLK Boulevard	47,000	47,000	47,000	46,000	47,000	48,000
Gulfport	South of John Hill Blvd.	43,000	43,000	47,000	46,000	47,000	48,000
Gulfport	North of 28th Street	38,000	41,000	42,000	40,000	38,000	39,000
Gulfport	South of 25th Street	26,000	26,000	26,000	26,000	31,000	32,000
Gulfport	North of 14th Street	15,000	32,000	32,000	31,000	32,000	33,000

Source: MDOT (2012).
Underlined volumes are actual traffic counts, others are estimated from trends by MDOT.

Results of an accident analysis contained in the *SR 601 Traffic and Accident Analysis*, November 2007, suggest crash rates on US 49 are relatively high. Crash rates have steadily increased throughout the corridor from 2001 to 2003. These increases are particularly significant in Harrison County, where the crash rate was nearly five times greater in 2003 than in 2001. Forty-nine percent of the crashes in Harrison County in 2003 were rear-end collisions. This high rate of rear-end collisions is consistent with congested traffic conditions. Congested roadway conditions increase the potential for vehicular collisions and personal injuries. In Harrison County, the number of injuries resulting from these collisions increased with the accident rate. There were 146 injuries recorded in 2003, compared to 54 in 2001 (MDOT/FHWA, 2008).

One location on US 49 within the study area was listed in the FHWA's Mississippi 2010 Five Percent Report, which identifies no less than 5 percent of roadway locations exhibiting the most severe safety needs (FHWA, 2010). Table 2 summarizes relevant accident statistics based on data from the period 2005 through 2009 including the crash rate per million entering vehicles (MEV). The accident Severity Index ranges from 0 to 9, where 0 indicates all property damage (minor) accidents, while 9 indicates all fatal accidents. Though the index is relatively low overall, the occurrence of fatal accidents will always result in the application of safety improvement measures. Mitigation measures have already been applied to reduce accidents at this location.

Table 2
Five Percent 2010 Accident Report Data for US 49 Locations within Study Area

Location	Crashes	Fatalities	Injuries	Crash Rate (MEV)	Severity Index
US 49 at Polk Street	5	2	15	2.22	0.67

Source: FHWA (2010).

In addition to connecting the Port to I-10, US 49 also connects to I-59 in Hattiesburg and I-55 in Jackson. The roadway has at least four lanes between Gulfport and Jackson and is divided in most locations. This corridor has a high priority for improvements in Mississippi's Unified Long-range Transportation Infrastructure Plan (MULTIPLAN), and is among the Corridors of Statewide Significance. The MULTIPLAN identifies numerous corridor improvement strategies including capacity expansion, bypass routes, and bicycle and pedestrian improvements (I-10 to US 90) (MDOT, 2011a).

North of Gulfport, US 49 is classified as a rural principal arterial. According to the Bureau of Transportation Statistics, in 2005, the fatality rate on rural principal arterials was 45 percent higher than rural interstate highways. This is partly due to the better physical conditions of the roadway and control of access on interstate highways. The 2004 *Conditions and Performance Report* compared fatalities in 1994 through 2002; the report found that the fatality rate (fatalities per 100 million vehicle miles) on rural interstate highways has remained lower than other rural functional classes (MDOT/FHWA, 2008). Thus, an element of the MULTIPLAN includes upgrading US 49 to Interstate Highway Standards from Gulfport to Jackson.

Rural US 49 is utilized by trucks transporting freight from the Gulf Coast cities and ports to other destinations in the U.S. As noted in Table 3, truck traffic over the entire US 49 corridor is expected to increase 44 percent in rural areas between 2006 and 2030 (MDOT, 2011a).

Table 3
Freight Corridor Profile for US 49

Highway Corridor						
Name	Length (miles)	Truck Volume	Relative Performance	Percent Rail/Truck	Rail Line	2006–2030 Growth
US 49	334	7,259,049	Poor, highest portion of segments with average speed <50 mph	7.6/92.4	Canadian National mainline (Jackson-Hattiesburg), KCS branch (Hattiesburg-Gulfport)	44%

Source: MDOT (2011a).

1.1.3.1.2 Interstate 10

East-west travel patterns on the Mississippi Gulf Coast are accommodated by I-10 and US 90. These roadways stretch the extent of the three Mississippi Gulf Coast counties and are the only continuous east-west facilities that cross all bays and estuaries along the coast (Coast Transit Authority and MDOT, 2011). I-10 is a major economic corridor that stretches coast-to-coast across the southern U.S., and one of four transcontinental east-west Interstate routes in the U.S. The corridor spans eight states: California, Arizona, New Mexico, Texas, Louisiana, Mississippi, Alabama, and Florida. I-10 is 4.7 miles north of the Port and provides a route for trucks to distribute products to 75 percent of U.S. markets within 24 hours (City of Biloxi, 2008a). According to information from the National I-10 Freight Corridor Study, the economic impact of freight transported along the corridor is $1.38 trillion dollars (Harrison County, 2008). Table 4 presents the freight corridor profile for I-10 from the MULTIPLAN (MDOT, 2011a). Based on the MULTIPLAN study, freight traffic growth on I-10 is expected to increase 50 percent between 2006 and 2030.

Table 4
Freight Corridor Profile for I-10

Highway Corridor						
Name	Length (miles)	Truck Volume	Relative Performance	Percent Rail/Truck	Rail Line	2006–2030 Growth
I-10	77	5,410,134	Poor, lowest average speed for interstate	28.7/71.3	CSX Gulf Coast line	50%

Source: MDOT (2011a).

I-10 has six lanes from County Farm Road (west of US 49) to I-110 in Biloxi and four lanes outside these limits. In addition to carrying freight traffic, I-10 is heavily utilized by local residents. Most commuters who live in the three coastal counties use this roadway to travel many of their trips. These commuters travel on I-10 until they reach a roadway that will take them south of I-10 to their place of employment (Coast Transit Authority and MDOT, 2011). Existing and new retail developments near I-10 interchanges throughout Harrison County have increased traffic, impacting the operations of the adjacent interchange ramps. Interchange improvements would be needed to maintain sufficient capacity to support the additional growth expected in future years (City of Biloxi, 2008b).

Table 5 presents the AADT volumes on I-10 within the study area from west to east of US 49. As indicated by the data, 2012 AADT volumes range from 39,000 to 75,000. In the case of I-10, not all locations exhibited a drop in traffic due to Hurricane Katrina (August 2005) or the 2008 national economic downturn.

Table 5
Historical Two-Way AADT on I-10 within Study Area

Jurisdiction	Location	2012	2011	2010	2009	2008	2007
Harrison County	West of Kiln-Delisle	39,000	38,000	41,000	41,000	40,000	41,000
Harrison County	West of Menge Avenue	44,000	44,000	54,000	54,000	53,000	50,000
Harrison County	West of County Farm Road	48,000	47,000	47,000	64,000	63,000	65,000
Harrison County	West of Canal Road	51,000	51,000	54,000	41,000	40,000	41,000
Gulfport	East of Canal Road	60,000	50,000	50,000	49,000	49,000	47,000
Gulfport	East of US 49	59,000	57,000	65,000	63,000	66,000	70,000
Gulfport	East of Lorraine Road	70,000	69,000	71,000	62,000	61,000	60,000
Biloxi	West of Cedar Lake Road	75,000	74,000	74,000	72,000	88,000	91,000
D'Iberville	West of I-110	66,000	65,000	65,000	59,000	60,000	62,000

Source: MDOT (2012).
Underlined volumes are actual traffic counts, others are estimated from trends by MDOT.

1.1.3.1.3 US 90

US 90 runs east-west along the Mississippi Gulf Coast. It provides a connection from Harrison County across the St. Louis Bay to New Orleans and Biloxi Bay to Pascagoula (Harrison County, 2008). US 90 is considered a primary east-west arterial. Many commuters that originate from the southern parts of the Gulf Coast will often travel US 90 to their places of employment (Coast Transit Authority and MDOT, 2011). Due to its close proximity to the beach, this roadway is heavily utilized by tourists.

The traffic conditions that existed on US 90 immediately prior to Hurricane Katrina in 2005 included daily traffic volumes over 48,000 with "Level of Service " (LOS) ranging from E and F (MDOT, 2008; see Section 1.1.5 for further details on LOS). As noted in Table 6, traffic volumes on US 90 in 2012 ranged from 23,000 to 31,000 within the study area. For many of the locations identified in Table 6, traffic volumes are below their 2007 levels. The lower AADT volumes are likely due to the damage to coastal development by Hurricane Katrina. The recovery to pre-Katrina levels has likely been impeded as a result of the economic recession and the low level of rebuilding along the beach for both commercial and residential buildings. In fact, 2012 traffic levels still indicate no growth.

Table 6
Historical AADT (two-way) on US 90 within the Study Area

Jurisdiction	Location	2012	2011	2010	2009	2008	2007
Gulfport	West of 38th Avenue	23,000	23,000	19,000	19,000	19,000	30,000
Gulfport	East of 30th Avenue	26,000	26,000	28,000	26,000	22,000	22,000
Gulfport	East of 20th Avenue	25,000	26,000	26,000	25,000	18,000	20,000
Gulfport	West of Kelly Avenue	27,000	27,000	27,000	26,000	20,000	22,000
Gulfport	East of Hewes Avenue	27,000	31,000	32,000	31,000	20,000	22,000
Gulfport	West of Teagarden Road	27,000	26,000	27,000	32,000	33,000	34,000
Gulfport	West of Cowan Road	24,000	24,000	24,000	24,000	25,000	26,000
Gulfport	East of Anniston Avenue	31,000	31,000	31,000	30,000	31,000	32,000
Biloxi	East of Debuys Road	23,000	23,000	23,000	29,000	29,000	30,000

Source: MDOT (2012).
Underlined volumes are actual traffic counts, others are estimated from trends by MDOT.

1.1.3.1.4 Other Study Area Roads

Table 7 summarizes the traffic count history among other study area roads that could be used by commuters or trucks accessing the Port. Trucks traveling to and from the Port currently use US 49 from I-10 to 28th Street or 25th Street, then travel west to 30th Avenue to access the Port. This route avoids the segment of US 49 through the Gulfport CBD thus avoiding impacts to commercial and tourism destinations in the CBD. Traffic count trends reveal no growth over the past 6 years.

Table 7
Historical AADT (two-way) on Other Gulfport Roads within the Study Area

Route	Location	2012	2011	2010	2009	2008	2007
Airport Road	East of US 49	14,000	18,000	18,000	18,000	18,000	18,000
Canal Road	South of I-10	12,000	13,000	13,000	13,000	13,000	15,000
Canal Road	North of 28th Street	14,000	14,000	9,800	9,700	9,800	10,000
Creosote Road	East of US 49	11,000	13,000	13,000	13,000	13,000	14,000
25th Street	East of 32nd Avenue	10,000	10,000	10,000	9,700	9,900	10,000
28th Street	East of Canal Road	10,000	10,000	11,000	11,000	11,000	11,000
28th Street	West of 33rd Avenue	11,000	11,000	13,000	13,000	13,000	15,000
28th Street	East of 33rd Avenue	9,400	9,400	9,400	11,000	11,000	12,000
28th Street	East of 30th Avenue	12,000	12,000	11,000	11,000	11,000	11,000
30th Avenue	South of 28th Street	5,500	5,500	7,200	7,000	7,200	7,100
30th Avenue	South of 25th Street	9,800	9,800	10,000	9,400	9,600	10,000
30th Avenue	South of 18th Street	3,300	3,300	10,000	9,400	9,600	10,000
30th Avenue	South of 15th Street	6,500	6,400	6,400	6,300	4,600	5,000
30th Avenue	South of 12th Street	7,600	7,600	8,900	8,700	8,900	10,000

Source: MDOT (2012).
Underlined volumes are actual traffic counts, others are estimated from trends by MDOT.

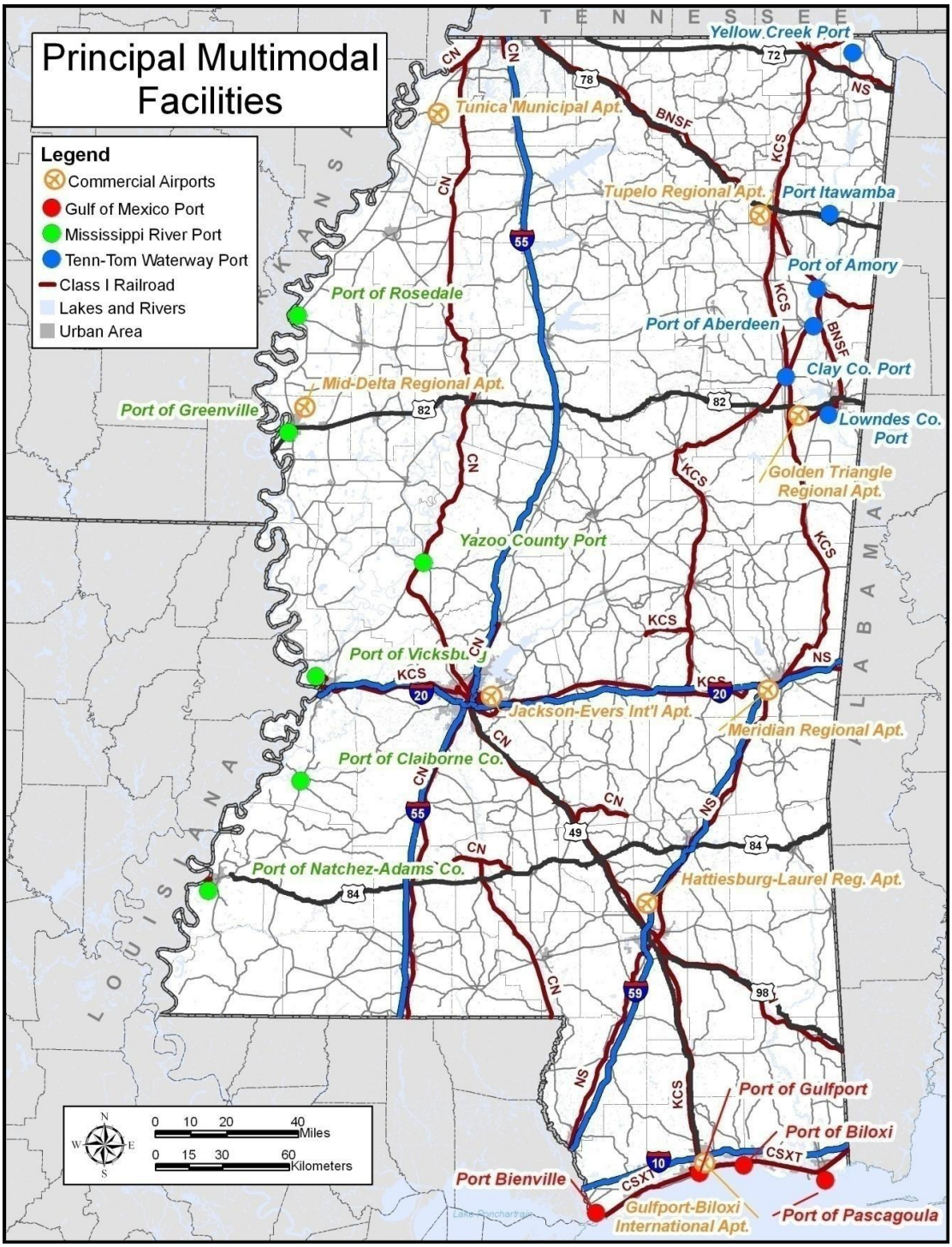
Canal Road is currently a two-lane undivided roadway from I-10 to 28th Street, and is part of one potential commuter route to reach the Port. 25th Street currently is a four-lane road with a two-way left-turn lane that provides a connection between US 49 and the main entrance to the Naval Construction Battalion Center military installation. 28th Street is currently a two-lane undivided roadway with left-turn lanes added at some intersections. 30th Avenue is a four-lane road that has different median treatments along its length. These include undivided, two-way left-turn lane and divided medians at different locations from 28th Street to US 90 at the main truck entry to the Port.

1.1.3.2 Railroads

The Port currently has three major tenants that handle containerized and bulk cargo: Dole, Crowley, and DuPont. A fourth tenant, McDermott, focuses on non-container terminal operations. As depicted on Figure 2, once unloaded, cargo has access to Class I rail systems (largest operating railroads) operated by KCS and CSX, which have connections to other commercial distribution modes throughout the state. Both lines are privately owned and operated (World Trade, 2010; Harrison County Development Commission, 2011).

KCS operates a 67.5-mile-long freight railroad on a north-south track from the Port to north of Hattiesburg. The KCS rail line is a single-track line that connects directly to the Port, and also provides turning tracks to access the east-west CSX rail line. The capacity of the line is constrained by the at-grade crossing between the KCS and CSX rail lines. From Gulfport to Perkinston, the KCS rail line is located to the west of US 49. In Perkinston, the KCS rail line shifts to the east side of US 49 (MDOT/FHWA, 2008). In Hattiesburg, the KCS rail line connects with the Norfolk Southern line that continues into the northeast U.S. and then connects to networks serving the entire eastern U.S. Also in Hattiesburg, the KCS rail line connects to the Canadian National line that continues to Chicago and Canada (*Gulfport News*, 2010).

Until recently, the KCS track could only accommodate 10-mph single stack container freight (263,000 pound gross rail load) and typically averaged one train per day (*Gulfport News*, 2010; MDOT/FHWA, 2008). In February 2010, Mississippi was awarded a $20 million Federal Transportation Investment Generating Economic Recovery (TIGER) grant as part of the ARRA to upgrade 67.5 miles of the line within the existing right-of-way to 49 mph double stack standards (*Gulfport News*, 2010). This project was completed in 2012 and is operational. Based on the KCS Rail Environmental Assessment methodology and an estimated existing demand of 223,740 TEUs per day with KCS rail improvements, an estimated 0.6 trains per day are generated by the Port to travel the KCS Rail line.



Source: MDOT (2011a).

Figure 2
Mississippi Water Ports, Airports, and Class 1 Railroads

The improvements to the KCS rail line increased the operating speed from 10 to 49 mph, accommodate 286,000 pound car loads, and increased the allowable train length from 2,940 to 3,900 feet north of the Gulfport Rail yard. South of the Gulfport Rail yard (between the Rail yard and the Port), 2,400 foot long trains will operate at 10 mph. The overall speed increase reduced the travel time from 8.5 to 3.75 hours, or a reduction of 4.75 hours over the length of the line. Table 8 presents the maximum (total closure time) at a rail-grade crossing while a train is present under different train speeds and allowable train lengths. Total crossing closure time per crossing can improve approximately 60% for trains traveling 10 mph compared to 30 mph. For trains at 49 mph, total closure time per crossing improves by approximately 70%.

Table 8
KCS Freight Rail – Estimated Total and Average Closure Time Scenarios

Allowable Train Length (feet)	Train Speed (miles per hour)	Train Speed (ft/sec)	Track Clearance Time (seconds)	Total Crossing Closure Time (seconds)
2,400	10	14.7	30	193
2,940	10	14.7	30	230.5
2,940	30	44.0	30	96.8
2,940	49	71.9	30	70.9
3,900	10	14.7	30	295.9
3,900	30	44.0	30	118.6
3,900	49	71.9	30	84.3

ft/sec = feet per second

The rail line speed upgrade affects the length of time any given train will block road crossings. At 49 mph, a 3,900-foot-long train will only block the crossing around 25 percent of the time that the same train would block it at 10 mph. Under the 49-mph operating speeds, rail-highway grade crossing delays are similar to those of street intersections under traffic signal control, and thus have less of an impact on roadway users. The duration of a given closure has a significant impact on roadway-railroad crossing delay due to the time required to dissipate the queue of traffic from the blockage.

In the downtown Gulfport area, the KCS rail line has at-grade rail crossings at US 90, 13th, 14th, 17th, 19th, 25th, and 28th streets. North of the downtown area, at grade rail crossings exist at 33rd Street, Martin Luther King Jr. Boulevard, Polk Street, Russell Boulevard, Factory Shop/Creosote Boulevard, and Landon Road. A rail yard extends from 33rd Street to the Martin Luther King Jr. Boulevard crossing. Only I-10 has grade-separated rail crossings at this time.

According to the KCS Rail Environmental Assessment Traffic Study Technical memorandum, trains up to 2,400 feet in length will travel at 10 mph from US 90 the Gulfport Rail Yard. It is not until after crossing I-10 that train speed can increase and eventually reach 49 mph. Before improvements to the KCS rail line, trains from the Port of Gulfport to the Gulfport Yard averaged 2,940 feet in length while

traveling at 10 mph. As seen in Table 9, while the KCS rail improvements will not increase the travel speed of trains from US 90 to the Gulfport Railyard, the improvements to the track do impact the length of the train.

Table 9
Train Conditions parallel to US 49

Existing Conditions	From	To	Allowable Train Length (feet)	Train Speed (miles per hour)	Train Speed (ft/sec)	Track Clearance Time (seconds)	Total Crossing Closure Time (seconds)
Before KCS Rail Improvement	US 90	Oneal Road	2,940	10	14.7	30	230
After KCS Rail Improvements	US 90	33rd Street	2,400	10	14.7	30	193
	33rd Street	Polk Street	3,900	10	14.7	30	296
	Polk Street	Dedeaux Road	3,900	20	29.3	30	163
	Dedeaux Road	Oneal Road	3,900	49	71.9	30	84

ft/sec = feet per second

Following the same methodology used in the KCS Rail Track Upgrade Project Environmental Assessment, which is consistent with both the U.S. Department of Housing and Urban Development (HUD)'s Environmental Assessment (EA) and the Federal Railroad Administration (FRA)'s Regulations for Considering Environmental Impacts, an impact assessment matrix (see Table 10) was created by Burk-Kleinpeter, Inc. (BKI). Impacts are considered in six categories: reach, character, probability, duration, frequency and within the existing capacity.

By 2060 the Port of Gulfport is projected to process approximately 1,050,000 TEUs under the No-Action conditions, comparatively under the Proposed Project conditions TEUs will increase to approximately 1,730,000. Additionally, by 2060, trucks transporting TEUs will decrease to approximately 50%. With improvement to the KCS track, each rail car can handle 4 TEUs. An allowed train length of 2,400 ft can support 37 railcars or 148 TEUs per each 2,400 ft train, with KCS track upgrades. As seen in Table 11, 2060 proposed Project conditions could experience 9 more trains traveling from the Port of Gulfport to the Gulfport Rail yard per day, considering 250 non-holiday work weekdays per year.

Table 10
Impact Assessment Matrix (Burk-Kleinpeter, Inc.)

Impact Category	Intensity of Impact	Definition of Intensity
Reach	International or National	Affects international or national trade patterns
	Statewide, Regional	Affects state or regional transportation
	Local or neighborhood	Delays that may affect single routes but not systems
Character	Permanent	Lasting effects on transportation system
	Temporary	Short-term affects attributed to construction
Probability	Certain	Impact is directly related to implementation of project
	Probable	Impact is not directly related to implementation of proposed project, but is likely to occur in the future
	Not Likely, but may occur	Impact is unrelated to project implementation, but may occur in the future
Duration	Excessive	16 minutes or more
	Long	11 to 15 minutes
	Medium	6 to 10 minutes
	Short	Up to 5 minutes
Frequency	Frequent	More than once per hour
	Often	More than four per day
	Intermittent	More than once per day
	Sporadic	More than four per week
	Rare	Fewer than four per week
Within Existing Capacity	Yes	Can be accommodated
	No	Cannot be accommodated

Table 11
2060 No-Action and Proposed Project Conditions

	2060 No-Action Conditions	2060 Proposed Project Conditions
Annual TEUs entering the Port of Gulfport	1,050,000	1,730,000
TEUs annually carried by Train (versus truck)	525,000	856,000
TEUs transported by train per weekday	2,100	3,460
Train Trips per weekday	14	23

TEU = twenty-foot equivalent unit

Reach, character, probability, and duration would all result in the same impacts for the study area under both the No-Action and Proposed Project conditions (Table 12). The frequency of train trips would increase between the No-Action and Proposed Project conditions by 9 trains per day; per BKI's Impact Assessment Matrix the frequency impact would remain classified as "often" for both conditions since more than four trains per day but less than more than one train per hour are anticipated. As shown in the KCS Rail Environmental Assessment, the existing crossings in the downtown Gulfport area are able to accommodate a queue of waiting cars at the grade crossings. With an increase of 9 trains per day, the corridor would still be able to accommodate queue lengths because of the decreased total closure time for each train crossing due to the KCS rail track upgrades. Between 2060 No-Action conditions and 2060 Proposed Project conditions, impacts would remain the same at at-grade crossings.

Table 12
TEU comparison between 2060 No-Action and Proposed Project Impact Assessment

Impact Category	2060 No-Action Conditions	2060 Proposed Project Conditions
Reach	Local or neighborhood	Local or neighborhood
Character	Permanent	Permanent
Probability	Certain	Certain
Duration	Short	Short
Frequency	Often	Often
Within Existing Capacity	Yes	Yes

At-grade railroad crossings were evaluated as part of a study conducted by Burk-Kleinpeter, Inc. et al. (2011) on June 14, 2011, as part of the EA for the KCS Railway Track Upgrade Project, Hattiesburg to Gulfport, Mississippi. Results indicated that although some delays would be experienced as a result of the proposed Project, those impacts are likely to be confined to the immediate vicinity of the rail line. Of the

92 rail grade crossings along the corridor, all but one can be accommodated within the existing transportation system with no improvements. The Landon Road crossing north of I-10 was expected to experience queues longer than the existing roadway could handle. However, the EA concluded this was a result of background growth and not a result of the updated rail operations. The study also concluded that crossing delays would decrease at 86 of 92 crossing locations for the entire length of the improved rail line due to the higher operating speed. In the downtown Gulfport area, at each of the at-grade rail crossings, the KCS rail line improvements decrease the total crossing closure time by approximately 37 seconds.

The CSX rail line provides transportation to the east and west. This rail line is the main Class I rail line that serves the Bienville and Pascagoula ports and provides connections to other regions outside of Mississippi. The CSX rail line services intermodal port terminals located at Gulfport and Pascagoula (Wilbur Smith Associates, 2009). Rail cars on the CSX rail line can run anywhere between 45 to 60 mph (Mississippi Public Broadcasting News, 2010).

The passenger service on this line also has an adverse impact on freight capacity (Wilbur Smith Associates, 2001). The *Sunset Limited* operates tri-weekly over CSX tracks along the Gulf Coast with stops at St. Louis Bay, Gulfport, Biloxi, and Pascagoula while traveling between New Orleans, Louisiana, and Jacksonville, Florida. This passenger rail service departs New Orleans heading eastbound Tuesday, Friday, and Sunday, and runs through most of Mississippi in the very early morning hours of the next day after departure. In the westbound direction, passenger trains pass through Mississippi in the early morning hours of Monday, Wednesday, and Friday (MDOT, 2011a).

1.1.4 Traffic Data Collection

Traffic counts at study area intersections were conducted on September 7, 2012, to support studies of specific roads, intersections, ramps, and entry points to the Port. These were collected to fill in areas not covered by MDOT counts, or to obtain detailed information about specific areas relevant to this study. The counts cover intersections along US 90 and US 49, as well as the ramps accessing I-10 from US 49 and Canal Road (Table 13). Year 2011 MDOT traffic counts on I-10 east of US 49 were used to determine through traffic volumes along I-10 from west of Canal Road to east of US 49. Counts were taken at all intersections that access the Port along US 90, all intersections with major four-lane roads along US 49, and the interchange ramps at I-10.

Table 13
List of Turning Movement Count Locations

Primary Roadway	Cross Road Location
Canal Road	I-10 Eastbound Ramps
Canal Road	I-10 Westbound Ramps
Canal Road	South of I-10 at Railroad Tracks
US 49	Landon Road/Crossroads Parkway
US 49	Creosote Road/Factory Shop Boulevard
US 49	Airport Road
US 49	25th Street
US 49	US 90
US 90	30th Avenue
US 90	Copa Boulevard
List of 24-hour Count Locations	
I-10 – US 49 Ramp	Eastbound I-10 to Northbound US 49
I-10 – US 49 Ramp	Southbound US 49 to Eastbound I-10
List of 48-hour Vehicle Classification Count Locations	
Canal Road	South of I-10 at Railroad Tracks
30th Avenue	South of US 90
Copa Boulevard	South of US 90
Captain James McManus Drive	At Entrance Gate to Port Property
I-10 – US 49 Ramp	Northbound US 49 to Eastbound I-10
I-10 – US 49 Ramp	Northbound US 49 to Westbound I-10
I-10 – US 49 Ramp	Eastbound I-10 to Southbound US 49
I-10 – US 49 Ramp	Westbound I-10 to Southbound US 49
US 49 Northbound	North of Northbound to Westbound I-10 Ramp
US 49 Southbound	North of Westbound to Southbound I-10 Ramp

Current Truck Access to I-10

Tractor trailer truck traffic volumes south of I-10 were compared between Canal Road and US 49 to determine which roadway is used by trucks the most. US 49 immediately south of I-10 handles over 2,300 tractor trailer trucks per day. The Canal Road count taken at a point south of the trucker motorist service area south of I-10 handles only 300 tractor trailer trucks per day.

General Turning Traffic Patterns at I-10 and US 49

The pattern of turning traffic at the I-10/US 49 interchange was determined from traffic count data to estimate the portion of truck and total traffic traveling in each direction from the Port. Of the overall volume of traffic on US 49 south of I-10 (53,730 vehicles per day), 19 percent travel to and from I-10 west, 23 percent to I-10 east, and 58 percent travel north on US 49. The pattern from tractor trailer trucks

is slightly different. Of the overall volume of tractor trailer trucks on US 49 south of I-10 (2,330 vehicles per day), 23 percent travel to and from I-10 west, 19 percent to I-10 east, and 58 percent travel north on US 49.

Measured Port of Gulfport Trip Generation Rates

Based on 24-hour traffic counts taken at all the entry roadways to the Port in September 2012, the Port currently generates 2,200 vehicle trips per day (1,100 per direction). The Port operations staff reported that the typical weekday truck traffic level is about 300 entering trucks per day for cargo. There are an additional 200 trucks per day that enter the site due to the construction activity on the West Pier, though this is a short-term situation. Table 14 summarizes the number of daily trips by type of vehicle.

Table 14
Port of Gulfport Measured Year 2012 Weekday Trip Generation by Vehicle Type

Type of Vehicle	Counted Weekday Trips	Percent of Daily Total Trips
Passenger Cars	1,300	59
Single Unit Trucks	400	18
Tractor Trailer Trucks (freight)	300	13
Tractor Trailer Trucks (construction)	200	10
Total	2,200	

Given that the 2012 annual volume of cargo is approximately 230,000 TEUs, the average trip generation rate of the Port (based on 2,000 non-construction trips) is roughly 870 daily trips (all vehicle types) per 100,000 annual TEUs. The highest volume of traffic counted during the morning peak hour includes 190 entering and 77 exiting vehicles. The highest volume of traffic counted during the evening peak hour includes 76 entering and 135 exiting vehicles.

Due to the varying size of shipping containers, the average number of TEUs accommodated by a tractor trailer truck is 1.7 as an industry standard. This factor was used to convert TEUs into truck trips. Also, 95 percent of freight traffic on the land-side of the Port is currently accommodated by trucks, with the other 5 percent by rail. The trip generation rate of passenger cars and single-unit trucks providing supplies and maintenance services is based on the traffic counts. The 1,700 passenger car and single-unit truck trips serve about 900 TEUs per weekday, which results in a weekday trip generation rate of about 1.9 trips per TEU.

1.1.5 Existing Traffic Conditions

The Project study area for roadway transportation impacts extends from Landon Road north of I-10 to US 90 on the south, and from US 49 on the east to Canal Road and 30th Avenue on the west. A traffic evaluation of year 2012 conditions was conducted to determine what directional roadway segments operate at an unacceptable LOS of E or F (see below) during peak hours. The evaluation was conducted

by direction of travel since traffic patterns and lane configuration can vary by direction. Table 15 summarizes the limits of each corridor included in the evaluation. Though other roads and intersections are included in the evaluation, they are minimally affected by traffic generated by the Port.

Table 15
Traffic Analysis Study Area Corridors, Limits, and Lengths

Corridor Name	Corridor Limits	Directional Length (miles)	Two-way Road Length (miles)
I-10 Freeway	West of Canal Road to East of US 49	8.10	4.05
US 49 (25th Avenue)	North of Landon Road to US 90	10.60	5.30
US 90 (Beach Blvd.)	West of 30th Avenue to East of US 49	2.60	1.30
Canal Road	Landon Road to 28th Street	6.90	3.45
25th Street	West of 30th Avenue to East of US 49	2.40	1.20
28th Street	West of Canal Road to East of US 49	6.80	3.40
30th Avenue	US 90 to 28th Street	2.90	1.45
Total Length (miles)	(all corridor segments)	40.20	20.10

The quality of traffic flow on a roadway facility is assessed using a qualitative performance rating called LOS. There are six LOS ratings that are depicted by the letters A through F. A description of what these qualitative measure mean is described below:

- LOS A is the best LOS and represents uncongested traffic with light traffic volumes;
- LOS C is normally the worst LOS tolerated in rural areas before improvements are warranted;
- LOS D is normally the worst tolerated in urban areas;
- LOS E represents traffic volumes near capacity; and
- LOS F is the worst, and represents congested traffic conditions due to traffic volumes that exceed the road's capacity.

The City of Gulfport, GRPC, and MDOT do not have thresholds requiring mitigation in order to address the impacts of new traffic generated by development As LOS D is widely considered the worst acceptable LOS tolerated in urban areas, LOS D or better was identified as the desirable level of service when evaluating whether traffic generated by the Proposed Project Alternative is significant compared to the No-Action Alternative; road segments operating at LOS E or F would be considered unacceptable. Table 16 summarizes how many directional miles of each major corridor in the study area operate at LOS E or F under 2012 traffic, along with the total directional mileage included in the evaluation. For example on 28th Street, 0.3 directional mile out of 6.8 directional miles operate at LOS E or F during the PM peak hour. This is the only unacceptable LOS of the 40.2 miles evaluated in the study area.

Table 16
Directional Road Miles at Level of Service (LOS) E or F
during 2012 AM and PM Peak Hour by Corridor

Year	Peak Hour	I-10	US 49	US 90	Canal Road	25th Street	28th Street	30th Avenue	Study Area
2012	AM Peak	-	-	-	-	-	-	-	-
2012	PM Peak	-	-	-	-	-	0.3	-	0.3
	Total Length	8.1	10.6	2.6	6.9	2.4	6.8	2.9	40.2

Table 17 identifies which segments of each corridor operate at LOS E or F and comments regarding potential causes. Only one intersection approach on 28th Street had a minor issues associated with traffic signal delay. Though there is sufficient capacity to accommodate 2012 traffic, the intersection carries traffic volumes that are fairly high for an intersection of two-lane roadways. Thus a long signal cycle time is the cause of the delay.

Table 17
Roadway Corridor Level of Service (LOS) Deficiencies – 2012 Existing Conditions

Corridor Name	Corridor Limits	Potential Cause of LOS E-F
I-10 Freeway	All LOS D or better	No issues
US 49 (25th Avenue)	All LOS D or better	No issues
US 90 (Beach Blvd.)	All LOS D or better	No issues
Canal Road	All LOS D or better	No issues
25th Street	All LOS D or better	No issues
28th Street	AM LOS E, eastbound approaching Canal Road	Traffic signal delay due to long cycle time, capacity is adequate
30th Avenue	All LOS D or better	No issues

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2.0 ENVIRONMENTAL CONSEQUENCES

2.1 ROADWAY AND RAIL TRAFFIC

This section describes transportation system impacts of the proposed action associated with the Proposed Project Alternative relative to the No-Action Alternative. Transportation impacts are assessed under existing 2012 conditions, and under forecast conditions in the years 2020, 2040, and 2060.

2.1.1 Project Study Area

The Project study area for roadway transportation impacts extends from Landon Road north of I-10 to US 90 on the south, and from US 49 on the east to Canal Road and 30th Avenue on the west. This study area covers all roadways that can be used by Port commuters and trucks that access intercity highways such as I-10 and US 49. This study area also fully encompasses MDOT's planned I-310 Project and includes all roads that would be directly affected by its completion. MDOT's I-310 Project has been delayed, and it is unknown when the project will move forward. For evaluation purposes, it is assumed that the project would not be operational but cumulative effects of I-310 are assessed in Chapter 5 of the EIS.

2.1.2 Description of Alternatives

The proposed Project Alternative consists of enlargement of the terminal facilities to provide additional berthing and cargo handling capacity. Also, the expanded portion of the Port facility would be elevated up to 25 feet above mean sea level to help protect the Port infrastructure from hurricane storm surges.

Freight and passenger demand forecasts are based on an independent economic assessment of potential growth in freight container shipping. Table 18 summarizes current levels of containerized shipping and freight growth forecasts for the forecast years. The traffic evaluation conducted for this study considers the 2012 baseline condition, and the No-Action and Proposed Project Alternatives and forecast years.

Table 18
Port of Gulfport Existing and Forecasted Annual Shipping Container Volumes (TEUs)

	2010	2012	2020	2040	2060
No-Action Alternative (Baseline)	217,948	231,905	287,732	563,982	1,049,631
Proposed Project Alternative	217,948	231,905	487,732	963,982	1,725,215

TEU = twenty-foot equivalent unit

The baseline No-Action Alternative consists of no improvements to the Port beyond those previously approved. These improvements in conjunction with automation and other efficiency measures would allow container processing to increase from 230,000 TEUs in 2012 to 1,050,000 TEUs by 2060. The Proposed Project Alternative improvements expand berthing and processing area but make no

modifications to the shipping channel. This increases the throughput potential of the Port to 1,730,000 TEUs by 2060.

2.1.3 Background Traffic Forecasts

Background traffic growth attributed to regional population and employment growth was determined using the most recent official traffic forecasts from the Gulf Regional Planning Commission (GRPC). These forecasts were obtained in September 2012. Travel demand model forecasts were available for the years 2008 (calibration year), 2016, 2025, and 2035. Traffic growth levels for study area roads from these forecasts were used to determine future traffic levels in 2020, 2040, and 2060 for use in this study.

Previously identified traffic generation from the Port was subtracted from the GRPC model traffic patterns so that those associated with the Proposed Project Alternative defined in this study could be added. Port traffic demand associated with the Proposed Project Alternative was then added to determine the total traffic and associated traffic impacts. Separate traffic patterns were assigned for both light vehicles (passenger cars and small trucks) and heavy trucks.

Traffic forecasts for this study were developed both with and without MDOT's I-310 Project. The scenarios without the MDOT I-310 Project are used for impact evaluation and development of mitigation measures. The scenarios with MDOT's I-310 Project are used to evaluate cumulative effects.

2.1.4 Freight and Passenger Traffic Forecasts

The following sections describe the derivation of traffic forecasts for the No-Action and Proposed Project Alternatives and the different forecast years.

2.1.4.1 Trip Generation

Background traffic forecasts (excluding Port traffic) had been derived using a combination of traffic counts and the GRPC travel demand model for the study year of 2012 and the forecast years of 2020, 2040, and 2060. This section describes the process of estimating future traffic generation of the Port under the No-Action and Proposed Project Alternatives. Port trip generation was based on rates derived from actual traffic counts taken at all Port entry roadways in 2012.

2.1.4.1.1 Freight Truck Forecasts

Table 19 depicts freight tractor trailer truck forecasts for the Port. The average number of weekday trips was derived based on the projected number of TEUs per year. The annual TEUs were divided by 250 non-holiday work weekdays per year, and by 1.7 TEUs per truck trip. Also, the portion of TEUs carried by truck is forecasted to decline from the current 95 percent to 75 percent by 2020, and 50 percent by 2040 and beyond. These reductions are made possible by recently completed improvements to the KCS rail line. Despite reductions in truck mode share, the absolute number of truck trips is still expected to grow from 518 current trips to up to 2,030 trips in 2060 under the Proposed Project Alternative. Under the

No-Action Alternative, freight truck trips are still expected to grow to 1,235 per day. Thus, the Proposed Project Alternative growth scenario adds a maximum of 795 truck trips over the No-Action Alternative by 2060.

Table 19
Port of Gulfport Weekday Freight Truck Volumes and Forecasts by Scenario

	2010	2012	2020	2040	2060
Distribution Days per Year	250	250	250	250	250
Truck Mode Share	95%	95%	75%	50%	50%
Load Factor (TEUs/Truck)	1.7	1.7	1.7	1.7	1.7
Truck Trips per Weekday					
No-Action Alternative (Baseline)	487	518	508	664	1,235
Proposed Project Alternative	487	518	861	1,134	2,030

2.1.4.1.2 Freight Rail Forecasts

Table 20 depicts freight rail forecasts for the Port. Freight rail handles all land-side freight transport not accommodated by truck. So the average weekday trips were derived using some of the same assumptions as trucks. The rail portion of the annual TEU forecasts for the Port were computed by dividing the annual rail freight TEUs by 250 non-holiday work weekdays per year. Previously, the KCS rail line could only handle single-stacked container freight, thus limiting cargo loads to 2 TEUs per rail car. With the line improvement, the KCS rail line handles double stacked container freight, thus expanding the cargo load to 4 TEUs per rail car. According to the KCS Railway Environmental Assessment Traffic Study Technical memorandum, trains up to 2,400 feet in length will travel at 10 mph from US 90 to the Gulfport Rail Yard. North of the Gulfport Rail Yard, train lengths will increase up to 3, 900 feet and the train speed will increase and eventually reach up to 49 mph. Under previous conditions, train lengths were limited to 2,940 feet, or about 45 rail cars. With the line improvements, 2,400-foot trains with approximately 37 railcars from US 90 to the Gulfport Rail Yard and 3,900-foot trains with 60 rail cars north of the Gulfport Rail Yard can be accommodated. Under current conditions, the Port only generates one freight train every 2 days. Under the No-Action Alternative, the number of trains between the Port and the Rail Yard is expected to expand to nearly 14 trains per day by 2060. Under the Proposed Project Alternative, up to 23 trains per day are expected between the Port and the Rail Yard by 2060. North of the Rail Yard 9 trains are expected in 2060 under the No-Action Alternative and 15 trains are expected under the Proposed Project Alternative.

Table 20
Port of Gulfport Weekday Freight Rail Volumes and Forecasts by Scenario

		2010	2012	2020	2040	2060
Distribution Days per Year		250	250	250	250	250
Rail Mode Share		5%	5%	25%	50%	50%
Load Factor (TEUs/Rail Car)		2.0	2.0	4.0	4.0	4.0
Rail Cars per Weekday						
No-Action Alternative (Baseline)		22	23	72	282	525
Proposed Project Alternative		22	23	122	482	865
Allowable Train Length	From US 90 to the Gulfport Rail Yard	2,940	2,940	2,400	2,400	2,400
	North of the Gulfport Rail Yard	2,940	2,940	3,900	3,900	3,900
Rail Cars per Train	From US 90 to the Gulfport Rail Yard	45	45	37	37	37
	North of the Gulfport Rail Yard	45	45	60	60	60
Trains per Weekday						
No-Action Alternative (Baseline)	From US 90 to the Gulfport Rail Yard	0.5	0.5	1.9	7.6	14.2
	North of the Gulfport Rail Yard	0.5	0.5	1.2	4.7	8.8
Proposed Project Alternative	From US 90 to the Gulfport Rail Yard	0.5	0.5	3.3	13.1	23.4
	North of the Gulfport Rail Yard	0.5	0.5	2.0	8.0	14.4

2.1.4.1.3 Passenger Car and Service Truck Forecasts

Passenger demand to and from the Port consists of employees, equipment specialists, and other deliveries that are not directly associated with freight. Based on traffic counts conducted at all Port entry roads in 2012, it was determined that the Port generates the equivalent of 1.9 daily automobile and single unit truck trips per daily TEU. About 76 percent of these trips are passenger cars. The remaining 24 percent are single unit trucks associated with deliveries, equipment maintenance, repairs, and other functions that do not directly involve freight transport. Table 21 summarizes the weekday traffic forecasts associated with the No-Action and Proposed Project Alternatives. The volume of passenger car and single unit truck traffic generated by the Port is expected to grow from 1,760 vehicles per day in 2012 to 13,112 trips per day in 2060, based on the Proposed Project Alternative. This forecast conservatively assume no

improvements in productivity, which would normally reduce future traffic demand growth since fewer employees would be required per unit of freight processed.

Table 21
Port of Gulfport Forecasted Weekday Auto and Single Unit Truck Volume by Scenario

	2010	2012	2020	2040	2060
No-Action Alternative (Baseline)	1,656	1,762	2,187	4,286	7,977
Proposed Project Alternative	1,656	1,762	3,707	7,326	13,112

2.1.4.2 Port Freight and Passenger Travel Patterns

Freight truck traffic from the Port were distributed 42 percent to I-10 east, 28 percent to I-10 west, and 20 percent to US 49 north. Based on traffic counts, the current patterns of use for Port access roads by trucks is 89 percent to 30th Avenue, 2 percent to Copa Boulevard, and 9 percent to Capt. James McManus Drive.

Passenger car and service truck trips from the Port were distributed 14 percent to US 90 west, 24 percent to I-10 west, 8 percent to Canal Road north, 10 percent to US 49 north, 22 percent to I-10 east, 16 percent to US 90 east, and 1 percent each to Creosote Drive, Airport Road, and 25th Street/Pass Road east of US 49. Based on traffic counts, the current patterns of use for Port access roads by passenger cars and single-unit trucks is 53 percent to 30th Avenue, 16 percent to Copa Boulevard, and 31 percent to Capt. James McManus Drive.

Though Port commuters can use any of the roadways to access the Port, freight trucks are currently routed along 30th Avenue rather than US 49 through the Gulfport CBD. From 30th Avenue, either 25th or 28th Street are used to connect back to US 49 to complete the trip north to both I-10 and US 49 extending north of Gulfport into central Mississippi.

2.1.4.3 Traffic Forecasts by Scenario

The assessment of project impacts begins with a comparison of average daily traffic demand (including trucks) for the No-Action and Proposed Project Alternatives for the different forecast years. This comparison establishes the degree to which average traffic demands among the different scenarios vary by study area corridor. Table 22 summarizes the length-weighted average daily volume of traffic on each of the seven corridors in the study area affected by Port traffic demand. The No-Action Alternative (0) forecasts for the different forecast years indicate that background traffic growth produces most of the overall traffic growth. There is far less of an increase as a result of increased Port traffic levels from the No-Action traffic level to that of the Proposed Project Alternative. The Proposed Project Alternative increases traffic over the No-Action Alternative by up to 2,390 vehicles per day in 2060.

Table 23 summarizes the length-weighted average daily truck traffic demand levels on each of the seven corridors in the study area affected by Port traffic demand. The maximum overall increase would be expected to occur on US 49, where the average volume of trucks increases by 680 per day in 2060 between the No-Action Alternative and the Proposed Project Alternative.

Table 22
Average Daily Traffic by Corridor and Port Growth Scenario

Year	Alternative	I-10	US 49	US 90	Canal Road	25th Street	28th Street	30th Avenue
2012	No-Action	55,830	33,240	18,820	10,650	14,240	11,260	10,920
2020	No-Action	63,220	37,640	21,320	12,100	16,140	12,780	12,440
2020	Proposed Project	63,470	38,450	21,640	12,480	16,180	13,060	13,120
2040	No-Action	81,840	49,150	27,740	16,010	20,900	16,800	16,660
2040	Proposed Project	82,250	50,570	28,300	16,770	20,980	17,340	17,960
2060	No-Action	100,750	61,550	34,520	20,310	25,700	21,080	21,600
2060	Proposed Project	101,450	63,940	35,460	21,590	25,840	22,020	23,800

Table 23
Average Daily Truck Traffic by Corridor and Port Growth Scenario

Year	Alternative	I-10	US 49	US 90	Canal Road	25th Street	28th Street	30th Avenue
2012	Alt 0	6,840	1,860	800	600	1,140	540	500
2020	No-Action	7,720	2,030	880	680	1,300	620	540
2020	Proposed Project	7,850	2,340	1,000	680	1,300	620	620
2040	No-Action	9,980	2,630	1,140	880	1,680	800	700
2040	Proposed Project	10,160	3,040	1,320	880	1,680	800	800
2060	No-Action	12,400	3,600	1,560	1,080	2,040	980	940
2060	Proposed Project	12,700	4,280	1,840	1,080	2,040	980	1,100

2.1.5 Traffic Analysis Methodology

The impact of Port traffic on surrounding transportation facilities is determined using traffic analysis procedures derived from the *Highway Capacity Manual* (HCM). The HCM procedures combine traffic forecasts with a description of the roadway and traffic control devices like traffic signals to estimate transportation performance measures such as speed, traffic density, and delay. These performance measures are then compared to the standardized performance thresholds, LOS, to determine whether the level of performance is within acceptable limits. There are six LOS ratings that are depicted by the letters A through F. A description of what these qualitative measure mean is described in Section 1.1.5.

The No-Action Alternative is the baseline of comparison against the Proposed Project Alternative. This baseline represents the level of growth expected to occur if the Port remains as approved to be by current permits and no additional work under the jurisdiction of the USACE is performed. Thus, only additional auto, truck, and train traffic associated with the Proposed Project Alternative are assessed as impacts. The worst acceptable LOS tolerated in urban areas in this study is LOS D, thus, road segments operating at LOS E or F would be considered unacceptable.

2.1.6 Traffic Analysis Results

The traffic analysis results presented are based on the existing plus committed configuration of all the roadways in the study area. The committed improvements consist of two projects affecting 28th Street. The first project adds a two-way left-turn lane and minor intersection improvements from Canal Road to 30th Avenue. The second project widens 28th Street to four lanes with a two-way left-turn lane from 30th Avenue to US 49. Though there are other projects in the GRPC long-range transportation plan, these are the only ones in which funding has been confirmed, and thus, these represent the worst case development scenario. These two projects on 28th Street are expected to be completed by 2020. It should be noted that the GRPC long-range transportation plan is based on year 2035 traffic forecasts. Thus, the list of planned projects may not meet long-term transportation needs beyond that year. Since this study includes an evaluation of 2040 and 2060 traffic levels based on extrapolation of GRPC travel demand growth trends to 2035, results from this study are likely to identify additional transportation system improvement needs that are a result of long-term urban traffic growth more than they are of Port-related traffic growth.

Tables 24 and 25 summarize how many directional miles of each major corridor in the study area operate at LOS E or F under each year for the No-Action and Proposed Project Alternatives, along with the total directional mileage included in the evaluation. The Project study area includes 40.2 directional miles of major streets and highways. Those most impacted by the Port project include I-10, US 49, US 90, Canal Road, 25th Street, 28th Street, and 30th Avenue. Table 24 presents the AM peak hour, and Table 25 the PM peak hour. For example on 28th Street, 0.3 directional mile out of 6.8 directional miles operate at LOS E or F during the 2012 PM peak hour.

Table 24
Directional Road Miles at Level of Service (LOS) E or F
during AM Peak Hour by Year, Port Scenario and Corridor

Year	Alternative	I-10	US 49	US 90	Canal Road	25th Street	28th Street	30th Avenue	Study Area
2012	Alt 0	-	-	-	-	-	-	-	-
2020	No-Action	-	-	-	-	-	0.3	-	0.3
2020	Proposed Project	-	-	-	-	-	0.3	-	0.3
2040	No-Action	-	-	-	-	-	0.3	-	0.3
2040	Proposed Project	-	-	-	-	-	0.3	-	0.3
2060	No-Action	-	-	-	1.3	-	2.5	-	3.8
2060	Proposed Project	-	0.5	-	1.3	-	2.5	-	4.3
	Total Length	8.1	10.6	2.6	6.9	2.4	6.8	2.9	40.2

Table 25
Directional Road Miles at Level of Service (LOS) E or F during
PM Peak Hour by Year, Port Scenario and Corridor

Year	Alternative	I-10	US 49	US 90	Canal Road	25th Street	28th Street	30th Avenue	Study Area
2012	No-Action	-	-	-	-	-	0.3	-	0.3
2020	No-Action	-	-	-	-	-	0.3	-	0.3
2020	Proposed Project	-	-	-	-	-	0.3	-	0.3
2040	No-Action	-	-	-	1.3	-	0.3	-	1.6
2040	Proposed Project	-	-	-	1.3	-	0.3	-	1.6
2060	No-Action	-	0.5	-	1.3	-	2.7	-	4.6
2060	Proposed Project	-	0.7	-	1.3	-	2.7	0.2	5.0
	Total Length	8.1	10.6	2.6	6.9	2.4	6.8	2.9	40.2

During the AM peak hour in 2060, up to 4.3 of 40.2 directional miles operate at LOS E or F. During the PM peak hour in 2060, up to 7.2 directional miles operate at LOS E or F. Note that the length of roadways affected by Port traffic does not change from existing 2012 conditions to all the year 2020 scenarios. Results for 2040 No-Action and Proposed Project Alternatives are also the same. Results for 2060 No-Action and Proposed Project Alternatives differ. Thus, the same traffic issues and mitigation measures would apply to each of these scenarios in 2020 and 2040, but they will differ in 2060.

2.1.6.1 Traffic Impacts – 2020 No-Action and Proposed Project Alternatives

Table 26 identifies which segments of each corridor operate at LOS E or F for all 2020 scenarios (No-Action and Proposed Project Alternatives), and comments regarding potential causes. Of 40.2 directional miles studied, 0.3 mile are deficient. The results indicate that neither the Proposed Project Alternative, nor background traffic growth through 2020, would cause other roadway segments in the study area to experience a LOS worse than D, other than that of current 2012 conditions.

Table 26
Roadway Corridor Level of Service (LOS) Deficiencies –
2020 No-Action and Proposed Project Alternatives

Corridor Name	Corridor Limits	Potential Cause of LOS E and F
I-10 Freeway	All LOS D or better	No issues
US 49 (25th Avenue)	All LOS D or better	No issues
US 90 (Beach Blvd.)	All LOS D or better	No issues
Canal Road	All LOS D or better	No issues
25th Street	All LOS D or better	No issues
28th Street	AM LOS F, eastbound approaching Canal Road	Intersection capacity
30th Avenue	All LOS D or better	No issues

Only the eastbound approach of 28th Street at Canal Road has a capacity issue. The west leg of this intersection carries a relatively high future traffic volume for a two-lane roadway. Since virtually no Port traffic uses this road segment, the capacity deficiency is due to background traffic growth between 2012 and 2020.

There is an unfunded GRPC long-range plan project to add a two-way left-turn lane to the west leg of this intersection. However, there is an intersection improvement that can help address the issue. The improvement consists of channelizing the eastbound through lane so that eastbound through traffic does not stop for the signal. This requires widening of the east leg to provide a median merge lane to receive southbound left turns from Canal Road. This improvement could be incorporated into the committed project that adds a two-way left-turn lane to 28th Street from Canal Road to 30th Avenue.

2.1.6.2 Traffic Impacts – 2040 No-Action and Proposed Project Alternatives

Table 27 identifies which segments of each corridor operate at LOS E or F for 2040 No-Action and 2040 Proposed Project Alternatives, and comments regarding potential causes. Of 40.2 directional miles studied, 1.6 miles are deficient. The results indicate that background traffic growth and growth associated with the No-Action Alternative increase demand such that two approaches to the intersection of Canal Road and 28th Street experience LOS worse than D. The same conclusion applies to 2040 conditions under the Proposed Project Alternative.

Table 27
Roadway Corridor Level of Service (LOS) Deficiencies –
2040 No-Action and Proposed Project Alternatives

Corridor Name	Corridor Limits	Potential Cause of LOS E and F
I-10 Freeway	All LOS D or better	No issues
US 49 (25th Avenue)	All LOS D or better	No issues
US 90 (Beach Blvd.)	All LOS D or better	No issues
Canal Road	PM LOS E, southbound approaching 28th Street	Intersection Capacity
25th Street	All LOS D or better	No issues
28th Street	AM LOS F, eastbound approaching Canal Road	Intersection Capacity
30th Avenue	All LOS D or better	No issues

The two road segments that have and LOS worse that D are two of the approaches to the intersection of Canal Road and 28th Street. There are unfunded GRPC long-range plan projects to add two-way left-turn lanes to both the west and north leg of this intersection; however, these improvements do not address the intersection capacity issue. The intersection channelization improvement discussed in the previous section would help address the issue. However, a more permanent solution would involve one of the following:

- Add a long-range plan project to widen 28th Street to a four-lane roadway with a two-way left-turn lane or median from west of Canal Road to 30th Avenue, and to widen Canal Road to a four-lane roadway with a two-way left-turn lane or median from I-10 to 28th Street.
- Construct the planned I-310 freeway from I-10 to 28th Street to reduce traffic on 28th Street and Canal Road.
- Construct a surface arterial street in the MDOT I-310 Project right-of-way to reduce traffic on 28th Street and Canal Road.

The list of potential improvement options is mostly triggered by year 2040 background traffic growth. Port truck traffic would not use these roadways, and only 14 percent of Port employees access the Port via Canal Road and 28th Street.

2.1.6.3 Traffic Impacts – 2060 No-Action Alternative

Table 28 identifies which segments of each corridor operate at LOS E or F for the 2060 No-Action Alternative and comments regarding potential causes. Of 40.2 directional miles studied, 4.6 miles are deficient. The results indicate that background traffic growth and growth associated with the No-Action Alternative increase demand such that a section of US 49 and a longer section of 28th Street experience LOS worse than D.

As was the case with the Proposed Project Alternative, the combination of 2060 background traffic growth and Port employee traffic from the No-Action Alternative further increases demand on the intersection of Canal Road and 28th Street such that four-lane widening improvements identified in the previous section would be needed to achieve a meaningful increase in intersection capacity, and the low-

cost intersection channelization improvement would not provide sufficient relief. The widening of 28th Street would also address the intersection capacity issue on eastbound 28th Street at 30th Avenue since eastbound 28th Street currently has only one approaching lane to this intersection for through and right-turn traffic movements.

Table 28
Roadway Corridor Level of Service (LOS) Deficiencies – 2060 No-Action Alternative

Corridor Name	Corridor Limits	Potential Cause of LOS E and F
I-10 Freeway	All LOS D or better	No issues
I-10/US 49 Interchange	PM LOS E, westbound to southbound loop ramp	High traffic volume for loop ramp
US 49 (25th Avenue)	PM LOS F, northbound approaching 28th Street and southbound approaching 25th Street	Reduction in US 49 traffic lanes from 6 to 4 lanes at 28th Street
US 90 (Beach Blvd.)	All LOS D or better	No issues
Canal Road	PM LOS E, southbound approaching 28th Street	Intersection Capacity
25th Street	All LOS D or better	No issues
28th Street	AM LOS F, eastbound and westbound approaching Canal Road	Intersection Capacity
28th Street	AM LOS F, eastbound approaching 30th Avenue	Intersection Capacity
30th Avenue	All LOS D or better	No issues

Capacity issues on US 49 pertain to the segment between 25th Street and 28th Street. US 49 transitions from six lanes north of 28th Street to four lanes from south of 28th Street to US 90. Though the US 49 roadway south of 28th Street is six lanes wide, the right lane in each direction is currently dedicated to right turns and as a buffer for on-street angle or parallel parking. The third lane in each direction can be restored by restriping the existing pavement and removing the angle parking. This change is only required for the quarter mile segment from 28th Street to a point south of 25th Street. Sections of US 49 farther south toward the beach and CBD operate at an acceptable LOS with four lanes.

Finally, the volume of traffic using the I-10 westbound loop exit ramp to southbound US 49 results in LOS E operations during the PM peak hour in 2060, mostly due to background traffic growth. Loop ramps have less capacity than other single lane ramps due to their lower operating speed and due to weaving traffic at either end of the ramp at cloverleaf interchanges. There are planned projects that could address this issue, though they are not committed at this time for different reasons. One project is I-310, which would divert much of the traffic from this ramp that is destined for the Gulfport CBD and Port. The other is a planned new I-10 interchange east of US 49 that would connect with Airport Road at the northeast end of the Gulfport-Biloxi International Airport. This interchange would also attract I-10 traffic from the US 49 interchange. Other options involve modifications to the I-10/US 49 interchange. One low-cost modification involves closing the loop ramp and adding two left-turn lanes from the existing

westbound I-10 to northbound US 49 ramp such that this ramp can also be used for left turns via a new signalized ramp intersection on US 49.

2.1.6.4 Traffic Impacts – 2060 Proposed Project Alternative

Table 29 identifies which segments of each corridor operate at LOS E or F for 2060 for the Proposed Project Alternative and comments regarding potential causes. Of 40.2 directional miles studied, 5.0 miles are deficient. The results indicate that background traffic growth and growth associated with the Proposed Project Alternative increase demand such that, in addition to previously noted LOS deficiencies, a longer length of US 49 and a portion of 30th Avenue also experience LOS worse than D.

Table 29
Roadway Corridor Level of Service (LOS) Deficiencies –
2060 Proposed Project Alternative

Corridor Name	Corridor Limits	Potential Cause of LOS E and F
I-10 Freeway	All LOS D or better	No issues
I-10/US 49 Interchange	PM LOS E, westbound to southbound loop ramp	High traffic volume for loop ramp
US 49 (25th Avenue)	PM LOS F, northbound approaching 28th Street and southbound approaching 25th Street	Reduction in US 49 traffic lanes from 6 to 4 lanes at 28th Street
US 49	PM LOS E, southbound approaching Creosote Road	Intersection Capacity
US 90 (Beach Blvd.)	All LOS D or better	No issues
Canal Road	PM LOS E, southbound approaching 28th Street	Intersection Capacity
25th Street	All LOS D or better	No issues
28th Street	AM LOS F, eastbound and westbound approaching Canal Road	Intersection Capacity
28th Street	AM LOS F, eastbound approaching 30th Avenue	Intersection Capacity
30th Avenue	AM LOS E, northbound approaching 25th Street	Intersection Capacity

The added traffic from 2060 for the Proposed Project Alternative improvements to the Port result in LOS E or F at two intersection approaches in addition to those identified for the 2060 No-Action Alternative. The northbound approach of 30th Avenue at 25th Street reaches LOS E. This situation could be mitigated by adding a northbound right-turn bay.

The second affected approach is southbound US 49 approaching Creosote Road, which is the first traffic signal south of I-10. A second left-turn lane from southbound US 49 to eastbound Creosote Road could be added after planned widening of Creosote Road is complete. A project to expand Creosote Road

between US 49 and Three Rivers Road from two to four through lanes is part of the GRPC long-range plan.

2.1.7 Traffic Mitigation Measures

Previous sections identified specific road segments whose LOS declines to unacceptable levels (LOS E or F) due to traffic growth and presented roadway improvements that could restore traffic operations to LOS D or better. This section organizes the list of roadway improvements to identify those that might be a direct result of new traffic generated by the Proposed Project Alternative. Those that are a product of background traffic growth in the Gulf Coast urbanized area and growth in shipping activity constrained by previously approved expansion actions are initially identified so that those explicitly resulting from the Proposed Project Alternative can be separated.

2.1.7.1 Traffic Mitigation – No-Action Alternative

Even if Port expansion is limited to previously approved actions, Port traffic demand is still expected to grow, but at a lower rate due to lack of the proposed improvements that could help attract more tenants and other shipping to the Port. Table 30 summarizes which road network improvements would be needed even if the Proposed Project Alternative does not occur in 2020, 2040, and 2060.

Table 30
Roadway Improvement Needs – No-Action Alternative

Year Needed	Corridor Name	Location	Potential Improvement	Comments
2020	28th Street	Canal Road Intersection	Eastbound Channelized Through Lane	Could be included with the committed LRP project to add TWLTL to 28th Street from Canal Road to 30th Avenue
2040	28th Street	West of Canal Road to 30th Avenue	Widen 28th Street to 4 lanes with TWLTL	New project needed to handle regional traffic growth beyond 2035 GRPC LRP
2040	Canal Road	28th Street Intersection	Add second southbound left-turn lane	Could be included with uncommitted LRP project to add TWLTL to Canal Road from south of I-10 to 28th Street
2060	US 49	25th Street to south of 28th Street	Eliminate on-street parking, restripe existing roadway from 4 to 6 lanes	Low cost project
2060	I-10/US 49 Interchange	Westbound to southbound loop ramp	Close loop ramp, construct left-turn lanes on existing westbound to northbound ramp, add traffic signal to US 49 for left-turn lanes.	New project needed to handle regional traffic growth beyond 2035 GRPC LRP if planned new I-10 interchanges are not built (Airport Road or I-310)

LRP = Long-range Plan; TWLTL = two-way left-turn lane; GRPC = Gulf Regional Planning Commission

2.1.7.2 Traffic Mitigation – Proposed Project Alternative

Table 31 summarizes the roadway improvements that would be needed in addition to the No-Action Alternative improvements due to additional traffic generated by the Proposed Project Alternative. No additional improvements would be needed in 2020 or 2040.

Table 31
Roadway Improvement Needs – Proposed Project Alternative

Year Needed	Corridor Name	Location	Potential Improvement	Comments
2060	30th Avenue	Northbound at 25th Street	Add northbound right-turn bay	Low cost project
2060	US 49	Southbound at Creosote Road	Widen roadway to add second southbound left-turn lane	Depends on uncommitted GRPC LRP project to widen Creosote Road to 4 lanes from US 49 to Three Rivers Road

LRP = Long-range Plan; GRPC = Gulf Regional Planning Commission

3.0 CUMULATIVE IMPACTS

3.1 REASONABLY FORESEEABLE FUTURE ACTIONS

3.1.1 Transportation System Actions

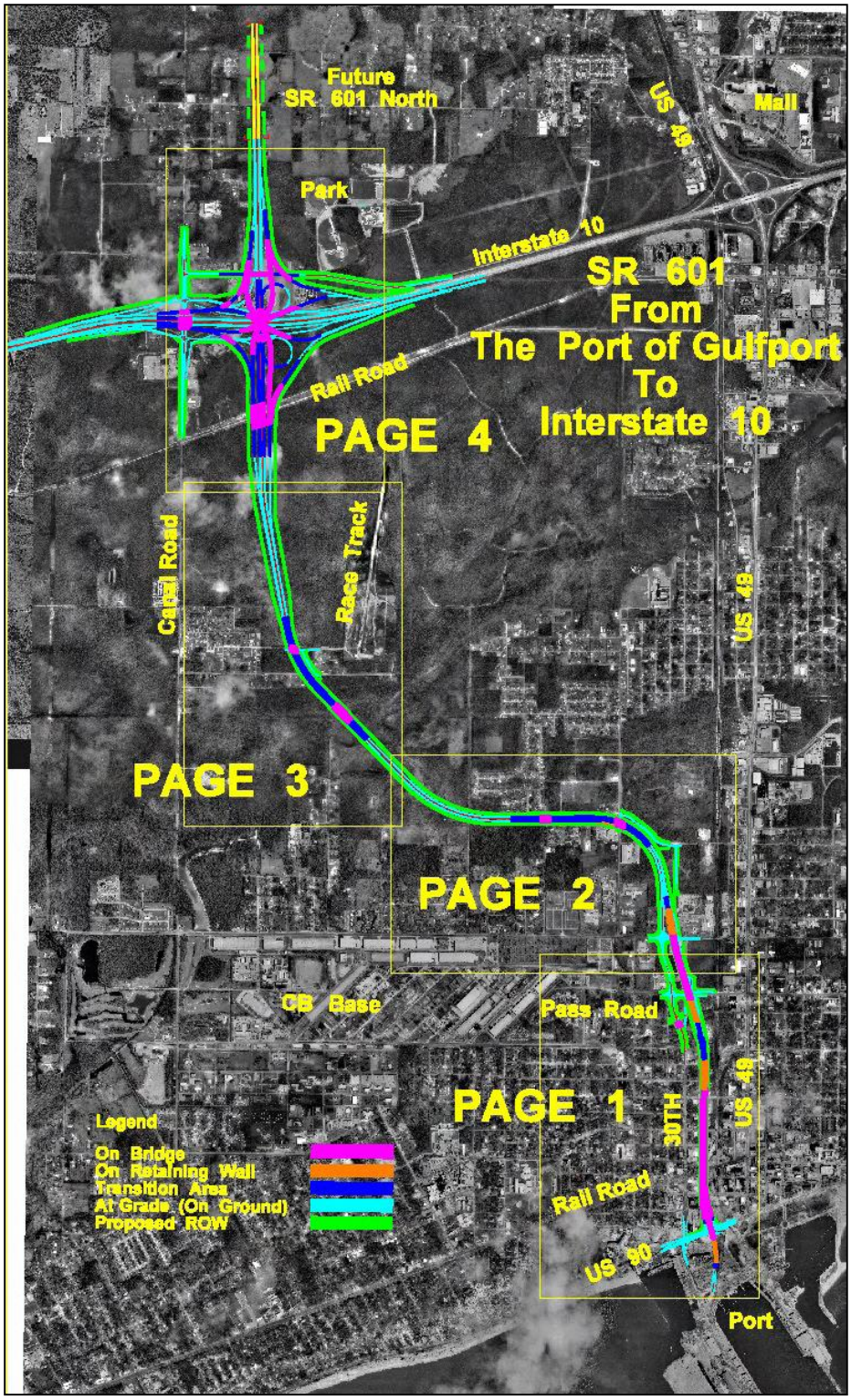
Future potential transportation-related actions that could affect transportation findings pertaining to the Proposed Project Alternative are listed below:

- Future I-310 (also called SR 601 South, Harrison County Connector or Port Connector Highway)
- SR 601 North (also called the Gulfport to Hattiesburg Highway otherwise following on or parallel to US 49)
- Unfunded GRPC LRP Urban Street Projects

Though the MDOT I-310 Project is currently postponed due to legal action, MDOT continues to move forward with the resolution of environmental issues, and plans to construct the highway when the issues have been resolved. Since I-310 would benefit the Port through direct access to an interstate highway, an evaluation of transportation conditions with I-310 is included in this document as an assessment of cumulative impacts. Since SR 601 North and the other GRPC LRP urban street projects are not currently funded, these are excluded from the evaluation to be conservative. Both SR 601 North and many of the unfunded urban street projects would provide benefits by relieving congestion and providing alternate routes for certain local traffic movements, which would reduce traffic on major thoroughfares like I-10 and US 49.

3.1.1.1 Future I-310

I-310 is a planned four-lane access controlled freeway between US 90 at the Port and I-10 near Canal Road. Also referred to as Mississippi Highway 601 south and the Canal Road-Port Connector Highway in older documents, it is proposed to begin at a new interchange with I-10 that will also serve as the southern terminus of the proposed US 49 Gulfport to Hattiesburg Freeway (also known as Mississippi Highway 601 North). South of I-10, I-310 would connect to a split diamond interchange at 25th/28th streets to access the Gulfport CBD and the Naval Construction Battalion Center military installation. A half diamond would connect with US 90 farther south to provide access to the beach front and commuter access to the southern reaches of the Gulfport CBD. I-310 would then enter the Port to provide direct access for trucks and Port employees. Figure 3 presents a conceptual layout of the proposed project (MDOT, 2006). Once constructed, I-310 is expected to relieve congestion on US 49 by providing an alternative route for tourists destined for beach front attractions, workers of the Gulfport CBD, including the Naval Construction Battalion Center, and for trucks traveling between the Port and I-10 and points farther north (Harrison County Development Commission, 2011). In fact, Port-related trucks will be required to use I-310 upon its completion according to commitments made by MSPA (2011b).



Source: MDOT (2006).

Figure 3
Conceptual Layout of Future I-310 Project

During environmental studies of I-310, the Gulfport Metropolitan Planning Organization year 2020 traffic forecast predicted I-310 would draw 20,000 vehicles per day south of I-10. US 49 currently carries up to 58,000 vehicles per day among the sections south of I-10 (see Table 1). The route also will serve as an additional hurricane evacuation route.

A Federal funding allocation of $6.4 million was obligated to the corridor under the name "Canal Road Intermodal Connector" in Gulfport (high priority project number 2348) by Federal legislation authorizing the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) transportation funding program (Public Law 109-59-August 10, 2005). According to a March 2011 news release from the MDOT public affairs office, "MDOT is nearing completion of the clearing phase of work for the new 5.8-mile Highway 601 construction project. The $1.14 million project was awarded to Gulf Equipment Corporation of Theodore, Alabama" (MDOT, 2011b). This clearing work pertains to the segment between Canal Road and 28th Street and has been completed.

The I-310 had been environmentally cleared in the final Environmental Assessment (Parsons Brinckerhoff Quade and Douglas, Inc., 2003). However, a permit associated with environmental mitigation had been revoked on November 21, 2012, by legal action, thus placing implementation of the corridor on hold. MDOT still plans to complete the roadway; thus for purposes of this study, improvement scenarios associated with the Port are evaluated both with and without completion of I-310 between I-10 and the Port. This comparative evaluation of cumulative impacts assumes full completion of MDOT's I-310 Project by 2020. An evaluation of traffic impacts is based on the same Port development alternatives in 2020 and 2060.

3.1.1.2 Traffic Forecasts by Scenario with I-310

The assessment of project impacts begins with a comparison of average daily traffic demand (including trucks) by scenario, where each scenario consists of a unique traffic forecast year and Port expansion alternative. This comparison establishes the degree to which average traffic demands among the different scenarios vary by study area corridor.

Levels of freight flow, trip generation, and external distribution patterns for the traffic scenarios that include I-310 are identical to those without I-310, except that traffic routes change to take advantage of the new highway. Traffic patterns accessing the Port change to take advantage of direct access to I-310.

With I-310 built, future patterns of use for Port access roads by trucks are 10 percent to 30th Avenue, 83 percent to I-310, zero to Copa Boulevard, and 7 percent to Capt. James McManus Drive. Future patterns of use for Port access roads by passenger cars and single-unit trucks are 23 percent to 30th Avenue, 50 percent to I-310, 11 percent to Copa Boulevard, and 12 percent to Capt. James McManus Drive.

Table 32 summarizes the length weighted average daily volume of traffic using each roadway corridor under both the no I-310 and with I-310 scenarios. Scenarios with I-310 consist of the last eight rows and

have traffic in the I-310 column, and cover only the years 2020 and 2060. Under the year 2020 scenarios, I-310 produces modest reductions in traffic on US 49 of 3,000 to 4,000 vehicles per day. However, in 2060, the reductions on US 49 range from 6,000 to 8,000 vehicles per day. I-310 also reduces traffic on the 30th Avenue corridor by 4,000 to 5,000 vehicles per day under both the 2020 and 2060 scenarios, and 8,000 to 10,000 vehicles per day under the 2060 scenarios.

Table 32
Average Daily Traffic by Corridor and Port Growth Scenario With and Without I-310

Year	Alternative	I-10	I-310	US 49	US 90	Canal Road	25th Street	28th Street	30th Avenue
2012	No-Action	55,830	-	33,240	18,820	10,650	14,240	11,260	10,920
Without I-310									
2020	No-Action	63,220	-	37,640	21,320	12,100	16,140	12,780	12,440
2020	Proposed Project	63,470	-	38,450	21,640	12,480	16,180	13,060	13,120
2060	No-Action	100,750	-	61,550	34,520	20,310	25,700	21,080	21,600
2060	Proposed Project	101,450	-	63,940	35,460	21,590	25,840	22,020	23,800
With I-310									
2020	No-Action	60,060	10,870	34,150	21,200	9,970	13,860	11,800	8,380
2020	Proposed Project	60,270	11,560	34,530	21,390	9,990	13,920	11,800	8,480
2060	No-Action	96,410	19,050	55,550	34,420	15,990	22,300	18,840	13,660
2060	Proposed Project	97,050	21,160	56,750	35,070	16,050	22,500	18,840	13,980

The key conclusion from these forecasts is as follows:

- Traffic increases due to background traffic growth from 2012 to 2020 and 2060 produce a majority of the change in traffic.

- Variations in traffic due to the Proposed Project Alternative are in the range of 140 to 2,400 vehicles per day or less among existing roads when comparing the No-Action Alternative to the Proposed Project Alternative. I-310 draws nearly 2,000 additional Port-generated vehicles per day for the Proposed Project Alternative versus the No-Action Alternative in 2060.

Table 33 summarizes the length-weighted average daily truck traffic demand levels on each of the seven corridors in the study area affected by Port traffic demand with and without I-310. With I-310, the maximum reduction on US 49 is 1,140 trucks per day in 2060 under the Proposed Project Alternative.

Table 33
Average Daily Truck Traffic by Corridor and Port Growth Scenario With and Without I-310

Year	Alter-native	I-10	I-310	US 49	US 90	Canal Road	25th Street	28th Street	30th Avenue
2012	No-Action	6,840	-	1,860	800	600	1,140	540	500
Without I-310									
2020	No-Action	7,720	-	2,030	880	680	1,300	620	540
2020	Proposed Project	7,850	-	2,340	1,000	680	1,300	620	620
2060	No-Action	12,400	-	3,600	1,560	1,080	2,040	980	940
2060	Proposed Project	12,700	-	4,280	1,840	1,080	2,040	980	1,100
With I-310									
2020	No-Action	7,430	810	1,810	750	460	960	660	340
2020	Proposed Project	7,510	1,010	1,880	770	460	980	660	360
2060	No-Action	11,970	1,520	2,980	1,210	730	1,550	1,050	560
2060	Proposed Project	12,150	1,970	3,140	1,230	730	1,570	1,050	620

3.1.1.3 Traffic Analysis Methodology

The impact of Port traffic on surrounding transportation facilities is determined using traffic analysis procedures derived from the HCM. The HCM procedures combine traffic forecasts with a description of the roadway and traffic control devices like traffic signals to estimate transportation performance measures such as speed, traffic density, and delay. These performance measures are then compared to the standardized performance thresholds, LOS, to determine whether the level of performance is within acceptable limits. Six LOS ratings are depicted by the letters A through F. A description of what these qualitative measure mean is described in Section 1.1.5.

In all cases, the No-Action Alternative is the baseline of comparison against the Proposed Project Alternative that involves a larger Port footprint. This baseline represents the level of growth expected to occur if the Port and channel remain as they are approved to be by current permits. Thus, only additional auto, truck, and train traffic associated with the Proposed Project Alternative is assessed as impacts. The City of Gulfport, GRPC, and MDOT do not have thresholds requiring mitigation in order to address the impacts of new traffic generated by development. As LOS D is widely considered the worst acceptable LOS tolerated in urban areas, LOS D or better was identified as the desirable level of service when evaluating whether traffic generated by the Proposed Project Alternative is significant compared to the No-Action Alternative; road segments operating at LOS E or F would be considered unacceptable.

3.1.1.4 Traffic Analysis Results

The traffic analysis results presented are based on the existing and committed configuration of all the roadways in the study area, except that comparative scenarios with MDOT's I-310 Project are included. The committed improvements consist of two projects affecting 28th Street. The first adds a two-way left-turn lane and minor intersection improvements from Canal Road to 30th Avenue. The second project widens 28th Street to four lanes with a two-way left-turn lane from 30th Avenue to US 49. Though there are other projects in the GRPC long-range transportation plan, these are the only ones in which funding has been confirmed, and thus, these represent the worst case development scenario. These two projects on 28th Street are expected to be completed by 2020.

It should be noted that the GRPC long-range transportation plan is based on year 2035 traffic forecasts. Thus, the list of planned projects is not likely to meet long-term transportation needs beyond that year. Since this study includes an evaluation of 2040 and 2060 traffic levels based on extrapolation of GRPC travel demand growth trends to 2035, results from this study identify additional transportation system improvement needs that are a result of long-term urban traffic growth more than they are of Port-related traffic growth.

Tables 34 and 35 summarize how many directional miles of each major corridor in the study area operate at LOS E or F by scenario both with and without I-310, along with the total directional mileage included in the evaluation. The project study area includes 53.7 directional miles of major streets and highways when I-310 is added. Those most impacted by the Port project include I-10, I-310, US 49, US 90, Canal Road, 25th Street, 28th Street, and 30th Avenue. Table 34 presents the AM peak hour, and Table 35 presents the PM peak hour. For example on 28th Street, 0.3 directional mile out of 6.8 directional miles operate at LOS E or F during the 2012 PM peak hour.

During the AM peak hour in 2060, construction of I-310 reduces the number of directional miles operating at LOS E or F from 4.3 to 1.6 miles. During the PM peak hour in 2060, I-310 reduces the number of directional miles operating at LOS E or F from 5.0 to 2.3 miles. Note that the length of roadways affected by Port traffic does not change from existing 2012 conditions to the year 2020 Proposed Project Alternative with I-310. The same is true of the Proposed Project Alternative 2060 scenario with I-310. Thus, the same traffic issues and mitigation measures would apply to each of these scenarios.

Table 34
Directional Road Miles at Level of Service (LOS) E or F
during AM Peak Hour by Scenario with and without I-310

Year	Alter-native		I-10	I-310	US 49	US 90	Canal Road	25th Street	28th Street	30th Avenue	Study Area
2012	No-Action	Existing	-	-	-	-	-	-	-	-	-
2020	No-Action	No I-310	-	-	-	-	-	-	0.3	-	0.3
2020	Proposed Project	No I-310	-	-	-	-	-	-	0.3	-	0.3
2060	No-Action	No I-310	-	-	-	-	1.3	-	2.5	-	3.8
2060	Proposed Project	No I-310	-	-	0.5	-	1.3	-	2.5	-	4.3
2020	No-Action	With I-310	-	-	-	-	-	-	-	-	-
2020	Proposed Project	With I-310	-	-	-	-	-	-	-	-	-
2060	No-Action	With I-310	-	-	0.5	-	-	-	1.1	-	1.6
2060	Proposed Project	With I-310	-	-	0.5	-	-	-	1.1	-	1.6

3.1.1.5 Traffic Impacts – 2020 No-Action Alternative and Proposed Project Alternatives

Table 36 identifies which segments of each corridor operate at LOS E or F for both 2020 scenarios (No-Action Alternative and Proposed Project Alternative) with I-310 built, and comments regarding potential causes. Of 57.3 directional miles studied, 0.3 mile are deficient. The results indicate that neither the No-Action nor the Proposed Project Alternative scenarios, nor background traffic growth through 2020 would cause other roadway segments in the study area to experience a LOS worse than D than that of current 2012 conditions. Thus, inclusion of I-310 does not change this situation relative to the scenarios without I-310.

Only the eastbound approach of 28th Street at Canal Road has a capacity issue. The west leg of this intersection carries a relatively high future traffic volume for a two-lane roadway. Since virtually no Port traffic uses this road segment, the capacity deficiency is due to background traffic growth between 2012 and 2020.

Table 35
Directional Road Miles at Level of Service (LOS) E or F
during PM Peak Hour by Scenario with and without I-310

Year	Alternative		I-10	I-310	US 49	US 90	Canal Road	25th Street	28th Street	30th Avenue	Study Area
2012	No-Action	Existing	-	-	-	-	-	-	0.3	-	0.3
2020	No-Action	No I-310	-	-	-	-	-	-	0.3	-	0.3
2020	Proposed Project	No I-310	-	-	-	-	-	-	0.3	-	0.3
2060	No-Action	No I-310	-	-	0.5	-	1.3	-	2.7	-	4.6
2060	Proposed Project	No I-310	-	-	0.7	-	1.3	-	2.7	0.2	5.0
2020	No-Action	With I-310	-	-	-	-	-	-	0.3	-	0.3
2020	Proposed Project	With I-310	-	-	-	-	-	-	0.3	-	0.3
2060	No-Action	With I-310	-	-	0.5	-	-	0.4	1.4	-	2.3
2060	Proposed Project	With I-310	-	-	0.5	-	-	0.4	1.4	-	2.3

Table 36
Roadway Corridor Level of Service (LOS) Deficiencies –
2020 No-Action and Proposed Project, Alternatives

Corridor Name	Corridor Limits	Potential Cause of LOS E-F
I-10 Freeway	All LOS D or better	No issues
US 49 (25th Avenue)	All LOS D or better	No issues
US 90 (Beach Blvd.)	All LOS D or better	No issues
Canal Road	All LOS D or better	No issues
25th Street	All LOS D or better	No issues
28th Street	AM LOS E, eastbound approaching Canal Road	Intersection capacity
30th Avenue	All LOS D or better	No issues

There is an unfunded GRPC long-range plan project to add a two-way left-turn lane to the west leg of this intersection. However, there is an intersection improvement that can help address the issue. The improvement consists of channelizing the eastbound through lane so that eastbound through traffic does not stop for the signal. This requires widening of the east leg to provide a median merge lane to receive

southbound left turns from Canal Road. This improvement could be incorporated into the committed project that adds a two-way left-turn lane to 28th Street from Canal Road to 30th Avenue.

3.1.1.6 Traffic Impacts – 2060 No-Action and Proposed Project Alternative

Table 37 identifies which segments of each corridor operate at LOS E or F for all 2060 scenarios (No-Action Alternative and Proposed Project Alternatives) with I-310 built and comments regarding potential causes. Of 57.3 directional miles studied, 2.3 miles are deficient. The results indicate that even with I-310 built, background traffic growth and growth associated with the No-Action Alternative increase demand such that a section of US 49, a section of 25th Street, and a longer section of 28th Street experience LOS worse than D. Thus, inclusion of I-310 mitigates many of the previously noted deficiencies that occur without I-310. However, added traffic due to the Proposed Project Alternative does not result in additional deficiencies relative to the No-Action Alternative.

Table 37
Roadway Corridor Level of Service (LOS) Deficiencies –
2060 No-Action and Proposed Project Alternatives

Corridor Name	Corridor Limits	Potential Cause of LOS E-F
I-10 Freeway	All LOS D or better	No issues
US 49 (25th Avenue)	PM LOS F, northbound approaching 28th Street and southbound approaching 25th Street	Reduction in US 49 traffic lanes from 6 to 4 lanes at 28th Street
US 90 (Beach Blvd.)	All LOS D or better	No issues
Canal Road	All LOS D or better	No issues
25th Street	PM LOS F, eastbound approaching US 49	Intersection Capacity
25th Street	PM LOS F, westbound approaching I-310 NB Ramp	Intersection Capacity
28th Street	A M LOS F, eastbound approaching Canal Road	Intersection Capacity
28th Street	AM LOS F, eastbound approaching 30th Avenue	Intersection Capacity
30th Avenue	All LOS D or better	No issues

Completion of I-310 diverts Port commuter traffic growth formerly using both 28th Street west of 30th Avenue, and Canal Road from 28th Street to I-10, which mitigates the need for most improvements otherwise needed on these two corridors if I-310 is not built. In addition to the committed project to widen 28th Street from Canal Road to 30th Avenue to include a two-way left-turn lane, adding a short segment of a second eastbound through lane and an eastbound right-turn lane on the eastbound approach of 28th Street and 30th Avenue addresses the capacity issue at this intersection.

Capacity issues on US 49 pertain to the segment between 25th Street and 28th Street. US 49 transitions from six lanes north of 28th Street to four lanes from south of 28th Street to US 90. Though the US 49 roadway south of 28th Street is six lanes wide, the right lane in each direction is currently dedicated to right turns and as a buffer for on-street angle or parallel parking. The third lane in each direction can be

restored by restriping the existing pavement and removing the angle parking. This change is only required for the quarter mile segment from 28th Street to a point south of 25th Street. Sections of US 49 farther south toward the beach and CBD operate at an acceptable LOS with four lanes.

The impacted segment of 25th Street is between I-310 and US 49. This segment experiences added traffic due to diverted traffic patterns associated with the new I-310 ramps connecting to 25th Street. This issue can be mitigated by additional turn bays. The most beneficial turn bays include a second eastbound left-turn bay on 25th Street at US 49, and an advanced left-turn storage bay feeding the I-310 interchange at the planned intersection of I-310 northbound ramps and 25th Street. This latter advanced left-turn bay is intended to feed the left-turn bay for the southbound I-310 entrance ramp.

3.1.2 Traffic Mitigation Measures

Previous sections identified specific road segments whose LOS declines to unacceptable levels (LOS E or F) due to traffic growth, and presented roadway improvements that could restore traffic operations to LOS D or better assuming that I-310 is already built by 2020. This section organizes the list of roadway improvements to identify those that might be a direct result of new traffic generated by the Proposed Project Alternative. Those that are a product of background traffic growth in the Gulf Coast urbanized area and growth in shipping activity constrained by previously approved expansion actions are initially identified so that those explicitly resulting from the Proposed Project Alternative can be separated.

3.1.2.1 Traffic Mitigation – No-Action Alternative with I-310

Even if Port expansion is limited to previously approved actions, Port traffic demand is still expected to grow, but at a lower rate due to lack of the proposed improvements that could help attract more tenants and other shipping to the Port. Assuming I-310 does get built by 2020, Table 38 summarizes which road network improvements would be needed even if the Proposed Project Alternative does not occur in 2020 and 2060.

Table 38
Roadway Improvement Needs – No-Action Alternative

Year Needed	Corridor Name	Location	Potential Improvement	Comments
2020	28th Street	Canal Road Intersection	Eastbound channelized through lane	Could be included with the committed LRP project to add TWLTL to 28th Street from Canal Road to 30th Avenue
2060	28th Street	30th Avenue Intersection	Add second eastbound through lane and eastbound right-turn bay	Could be included with the other committed LRP project to improve 28th Street from Canal Road to US 49
2060	25th Street	US 49 Intersection	Add second westbound left-turn lane	Low cost project could be included with the I-310 project since the need is based on traffic patterns shifted by I-310
2060	25th Street	I-310 North-bound Ramp Intersection	Add westbound advanced left-turn storage lane	Could be included with the I-310 construction project
2060	US 49	25th Street to south of 28th Street	Eliminate on-street parking, restripe existing roadway from 4 to 6 lanes	Low cost project

3.1.2.2 Traffic Mitigation – Proposed Project Alternative with I-310

Added traffic resulting from the Proposed Project Alternative, does not result in the need for additional improvements beyond those required to sustain background traffic growth and Port traffic growth associated with the No-Action Alternative when I-310 is included in the transportation network.

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Appendix O

Gulf Sturgeon Monitoring Report

FINAL REPORT (2012-14)
GULF STURGEON MONITORING STUDY FOR THE PROPOSED PORT OF GULFPORT EXPANSION PROJECT GULFPORT, MISSISSIPPI

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EXECUTIVE SUMMARY

This report describes the Gulf Sturgeon monitoring project that took place from fall 2012 to fall 2014, for the purpose of monitoring the area surrounding the Port of Gulfport (Port), and to determine the use of near shore and project areas by the Gulf Sturgeon. Gulf Sturgeon are known to spend the warmer months in Gulf coastal rivers, and colder months in bays and estuaries, and it was thought that the primary use of potential project areas would consist of transitory individuals during seasonal migrations.

A network of telemetry receivers was placed in an array around the Port (Gulfport array) and further east (east gate) and west (west gate) between the Port and the Pearl and Pascagoula rivers to record the movements of Gulf Sturgeon tagged with VEMCO acoustic tags. The signals sent by the acoustic tags carried by the Gulf Sturgeon were then used to determine their presence within the project area. The tagging efforts, led by Mark S. Peterson (University of Southern Mississippi, Gulf Coast Research Laboratory) and William T. Slack (U.S. Army Engineer Research and Development Center), were concentrated in the Pearl and Pascagoula rivers and we acoustically-tagged 9 fish in the fall of 2012, 25 in 2013 (8 spring/summer, 17 fall), and 6 in summer 2014 (Pearl river only). Of the 40 acoustic tags purchased by the Mississippi State Port Authority (MSPA), only 19 were attached to Gulf Sturgeon (see methods, p. 8) and the remaining 21 tags deployed were from other contemporaneous studies. Seven additional Gulf Sturgeon were captured in summer 2014 and processed minus the acoustic tag because the fish were too small for an acoustic tag (see Table 11).

The first full year of monitoring with the telemetry array was 10 September 2012 through 19 September 2013, and no Gulf Sturgeon with MSPA tags was detected on the entire Gulfport array. However, 10 fish that were part of other ongoing efforts were detected. Also, no Gulf Sturgeon were detected between 1 June and 19 September 2013. Six (all adults) of the fish were detected at the east gate, five (3 adults, 2 sub-adults) at the west gate, and seven (5 adults, 1 sub-adult, 1 juvenile) in the Gulfport array. Each telemetry receiver had between three and six Gulf Sturgeon detected, and there were a total of 12,288 detections among all 19 receivers. Only 3 of 13 (23.1%, pooled by season) tagged Gulf Sturgeon had both a high number of days between first and last detections and a high cumulative detection time within the array.

In Year 2 of the monitoring program (20 September 2013 through 3 September 2014), 17 Gulf Sturgeon were detected in the full array, with only 3 fish with MSPA tags. Nine of the fish (six adult, one sub-adult, and two juvenile) were detected at the east gate; ten fish (eight adult, one sub-adult, and one juvenile) were detected at the west gate; and fourteen fish (nine adult, three sub-adult and two juvenile) were detected in the Gulfport array. Each receiver had between three and nine Gulf Sturgeon detected but only 2,373 detections were recorded on all 19 receivers. No detections were recorded after 2 May 2014. Three of 23 (13.0%, pooled by season) tagged Gulf Sturgeon had both a high number of days between first and last detections and a high cumulative detection time within the array.

Overall, there were markedly fewer total detections in Year 2 than Year 1 data sets even though we documented a greater number of tagged Gulf Sturgeon during Year 2. Four adult Gulf Sturgeon were detected in both years of the monitoring period in the acoustic array; two from the Pearl and two from the Pascagoula drainages. This suggests some level of consistent and repeatable regional-scale movement patterns in Gulf Sturgeon from western Gulf of Mexico drainages. We also detected tagged adult Gulf Sturgeon in the Gulfport array originally captured and tagged in the Escambia, Choctawhatchee or Blackwater drainages, Florida.

The number of detections per fish and time within the array varied greatly among all the detected Gulf Sturgeon, with individuals taking both transitory paths through the array, and localized movements within the entire array. Gulf Sturgeon from each life stage category were detected (adult, sub-adult, juvenile), with adults, unexpectedly, having the greatest number of occurrences and detections. The relative low occurrence of juveniles and sub-adults suggests these life history stages may experience restricted movements away from natal rivers as young fish, and only begin to expand their range later with age. On the other hand, adults have been documented within the project area during pre- and post-migratory periods, illustrating the importance of the area as more than temporary. This suggests that the Gulfport monitored area (habitat) serves as a corridor between other habitat types, drainages, feeding zones, or is used as a pre-/post-migratory acclimation zone.

FINAL REPORT (2012–2014)
GULF STURGEON MONITORING STUDY FOR THE PROPOSED PORT OF GULFPORT EXPANSION PROJECT GULFPORT, MISSISSIPPI

SCOPE OF WORK

This scope of work (SOW) involved capturing and acoustically tagging juvenile and sub-adult Gulf Sturgeon (*Acipenser oxyrinchus desotoi*), deployment and maintenance of telemetry receivers, and monitoring for presence/absence of acoustically tagged Gulf Sturgeon along the near shore and project area surrounding the existing Port of Gulfport (the Port).

METHODOLOGY
Tagging

The Port purchased 40 VEMCO (a division of Amirix Systems, Inc.) acoustic tags (models V9 and V13; 69-kHz frequency) to be utilized for external placement on juvenile and sub-adult Gulf Sturgeon between fall 2012 (10-11 September) and fall 2014 (3 September). The tags were split evenly between field teams working on the Pearl and Pascagoula rivers with the expectation that 10 tags a year would be placed on Gulf Sturgeon from each river drainage during the course of two field seasons (Appendix 1). The Pascagoula field team was led by Mark S. Peterson (University of Southern Mississippi, Gulf Coast Research Laboratory [USM-GCRL]) and laboratory staff partially dedicated to this project. The Pearl River field team was led by William T. Slack (U.S. Army Engineer Research and Development Center [ERDC]) and one part-time field technician.

Based on previous years of experience by Mark S. Peterson and William T. Slack and their laboratory staff, deploying 40 tags over the proposed time period was estimated to take about 48 days of field time. Tagging efforts were carried out intermittently in upriver locations, as weather conditions allowed during each field season from May through November. Once the tags were placed on fish the expected battery life of the tags varies based on the size. Table 1 depicts tag sizes funded by this project and associated battery life.

Table 1
VEMCO Tag Sizes and Battery Life for Each Tag Size Based on VEMCO Specifications.

VEMCO Tag Size	Number	Battery Life (days)	Fish Size Range for Each Tag (centimeters Fork Length)
V9 (120-second delay)	12	522	<529
V13 (90-second delay)	28	881	529–642

Tagging Externally (fish ≤125.0 centimeters fork length)

All Gulf Sturgeon were tagged externally with a uniquely coded low-powered, ultrasonic tag (models V9 or V13; 69-kHz frequency). Other concurrent Gulf Sturgeon projects tagged adult fish with V16 tags not purchased/deployed specifically for the Gulfport monitoring project, but they were detected within the array. Prior to deployment of external tags, monofilament (40-pound test) was secured to external tags using two-part epoxy and shrinks tubing, leaving two tails dangling off either end. A large gauge needle was used to pierce the base of the dorsal fin and pull the monofilament tails through the width of the fin. A biologically inert backing plate was threaded onto the monofilament and an aluminum crimp was secured to pull both the tag and the backing plate flush against both sides of the dorsal fin, modified from methods described in Sulak et al. (2009). All tagging and tissue sampling wounds were treated with a Betadyne/Vasoline mixture prior to release following methods in Peterson et al. (2013). Although not specifically tagged during this project, adults detected on the Gulfport array were internally tagged during the course of other projects as in Havrylkoff et al. (2012) and Peterson et al. (2013). Captured Gulf Sturgeon were categorized as adults (>125.0 centimeters fork length [cm FL]), sub-adult (89.1–125.0 cm FL), or juveniles (30.5–89.0 cm FL) and were released downstream of netting activities (Parauka et al., 2011).

Specifications of transmitters that were used/detected within the array are in Table 2. All Gulf Sturgeon initially captured during the tagging process was scanned for the presence of existing PIT tags (tagged during a previous event unrelated to the Port project). If none were detected, a PIT tag was implanted at the base of the dorsal fin in accordance to standardized National Marine Fisheries Service (NMFS) protocols (Moser et al., 2000). Passive Integrated Transponder (PIT) tags were provided by another funding source and have no cost associated with implanting or purchasing PIT tags for this study. Additionally, each Gulf Sturgeon was scanned for the presence of a functional acoustic transmitter using a VEMCO VR100 receiver and hydrophone. Gulf Sturgeon found to have no acoustic tag, or tags loosened due to gill net entanglement were tagged with an appropriate sized acoustic tag (see Tables 9, 10, 11 below).

Table 2
Transmitter specifications. *While the V16 tags were not purchased/deployed specifically for the Gulfport monitoring project, they were detected within the array.

Model	Length (millimeters)	Diameter (millimeters)	Wet Weight (grams)	Dry Weight (grams)	Mean Signal Emitted (seconds)
V9	21.0	9.0	1.6	2.9	120
V13	36.0	13.0	6.0	11.0	90
*V16	95.0	16	16.0	34.0	90-110

Our V9 acoustic tags are programmed to emit their signal on average every 120 seconds (ranges from 60 to 180 seconds) whereas our V13 tags emit signals on average every 90 seconds (ranges from 50 to 130 seconds). While we did not deploy any V16 tags for the Gulfport monitoring project specifically, Gulf Sturgeon with active V16 (with signal emitted on average every 90-110 seconds) tags were regularly

detected within the array. The random program feature integrated into the tags by the manufacturer reduces the probability of multiple tags in the same general area from signaling at the same time which can lower detection efficiency.

Acoustic Array

The acoustic array for monitoring telemetry tagged fish consisted of 19 receivers (VEMCO VR2W) deployed around the project area (Figure 1) that was monitored over a 2-year period, from 10 September 2012 to 3 September 2014. The east and west gate were each composed of three receivers deployed as a longitudinal series parallel to the Port and navigation channel. The remaining 13 receivers were configured around the footprint of the Port and are hereafter referred to as the Gulfport array. Receivers were deployed and marked with U.S. Coast Guard-approved yellow regulatory type buoys made by Rolyan Buoys (model B1147RY). These are 9-inch-diameter unsinkable buoys filled with urethane foam and are 60 inches tall with 36-inch above-the-water line. They had concrete ballast (56 pounds) with a ½-inch stainless-steel mooring eye at the bottom, silver-and-orange reflective bands, and 3-inch black lettering. We also added a reflective 4 x 6-inch sticker with contact information to the buoys. The VR2Ws were attached to the ⅜-inch stainless-steel cable via cable-ties and 700-pound test monofilament. The buoys and cables were then anchored in place by 200-pound concrete blocks. These buoys and receivers were positioned about 600 meters (m) apart with each receiver having an assumed 300-m detection radius; these are conservative detection range estimates. Gulf Sturgeon detections are based on active VEMCO transmitters (see Table 2). The receivers and moorings were deployed over a 2-day period on 10-11 September 2012 using a 55-foot (ft) vessel (USM-GCRL) outfitted with an A-frame and winch. The receivers remained in place until 3 September 2014 and provided the basis for continuous monitoring within the project area. However, four receivers (see Figure 1) had some problems over this time period. For example, Buoy A was moved (e.g., drug) eastward about 3.5 km which was first noted on 8 July, 2013, and the buoy was moved back onsite on 19 July 2013. Thus, the data were not reliable on this buoy between 23 May 2013 (previous download) and 19 July 2013, because of the unknown location of the buoy. Buoys B and C sustained severe damage to the above water portion as noted on 8 August 2013, and were replaced on 19 August 2013, with no loss of data as they did not move. Finally, the mooring cable of Buoy Q was apparently cut. The buoy and receiver were recovered on the beach in Long Beach on 29 October 2013, and replaced on 19 November 2013, after tagging season ended and weather was appropriate. Detections between 27 September (previous download on 26th) and 19 November on Buoy Q were not usable. Although the movement or damage to the buoys did not influence any other receiver moorings, it did require not using detections within the dates noted above for those specific buoys.

Protocols for monitoring and maintenance of the receivers and buoys were similar to those used during previous monitoring projects (Havrylkoff et al., 2012; Peterson et al., 2013). USM-GCRL staff downloaded data every 4 to 5 weeks from receivers deployed (Appendix 1). Our buoy hurricane evacuation plan was never implemented so the project area was continuously monitored for Gulf Sturgeon use of the area surrounding the Port and adjacent near shore habitat except where noted above.

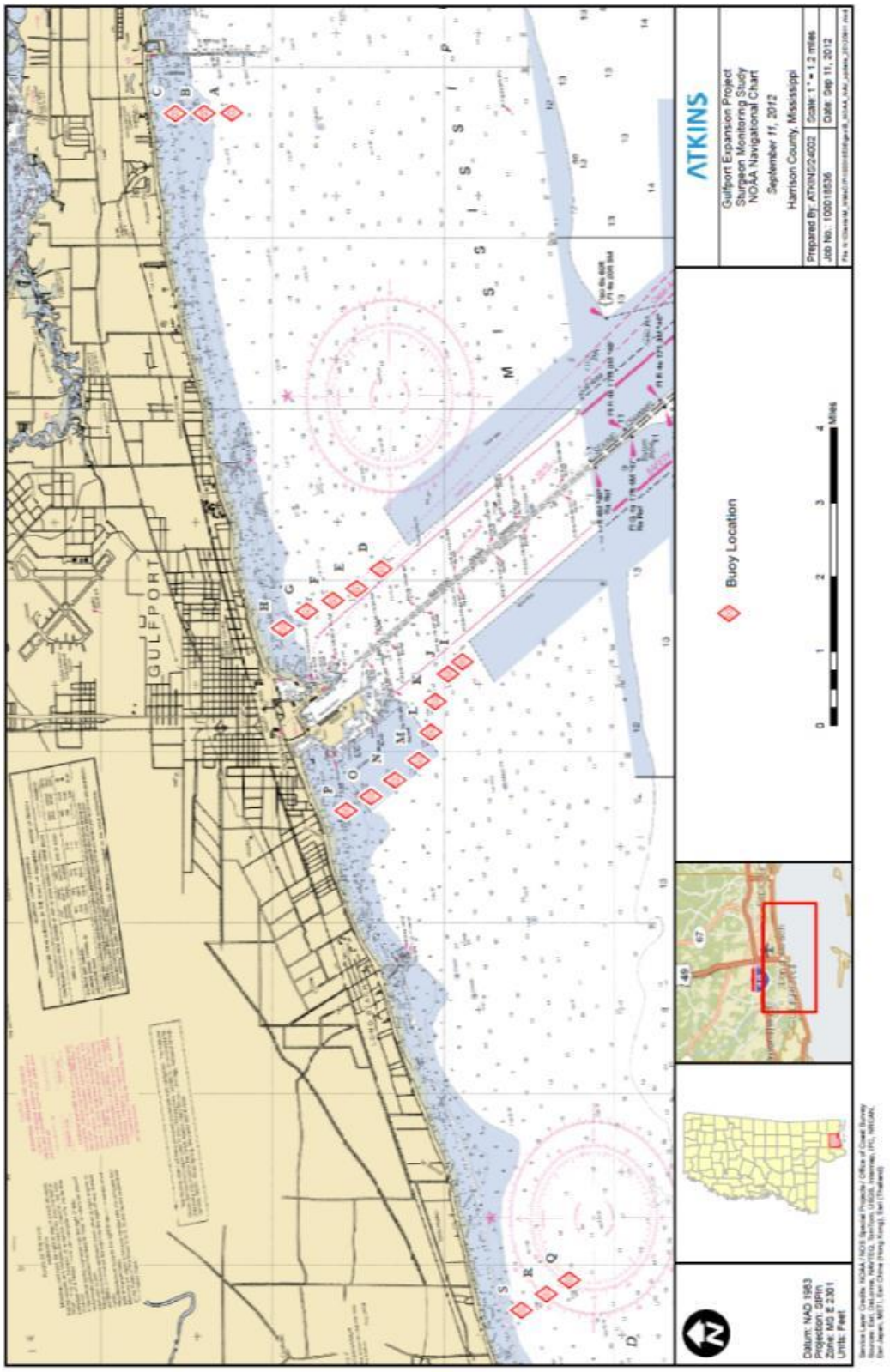


Figure 1. Map of VEMCO VR2W positions within the Mississippi Sound around the Port of Gulfport study site.

RESULTS
Sampling Tagging Efforts
2012

During the course of previous Gulf Sturgeon projects in the Pascagoula system (i.e., 2010–2011 NRDA, 2010–2014 NOAA section 6), sampling for Gulf Sturgeon by USM-GCRL personnel was partitioned between day and night periods to provide insight on activity periods in Gulf Sturgeon during their fall emigration phase. Netting during crepuscular and nighttime hours proved successful for obtaining sufficient numbers of fish that could be tagged (Grammer et al. 2015), and was continued, in part, during the described efforts by USM-GCRL on the current project for the Port. The first fall tagging period began on 24 September 2012, and was concluded for the season on 8 November 2012. The USM-GCRL team sampled for 22 total days (85 net sets) in the Pascagoula River system with a total daytime effort of 38,928 net-meter-hours (net-m-hrs), whereas the USACE-ERDC team sampled in the Pascagoula River system for a total of 8 days (26 net sets) and a total daytime effort of 11,656 net-m-hrs. Combined daytime effort resulted in 50,584 net-m-hrs, the tagging of two juveniles, a sub-adult and an adult Gulf Sturgeon for a daytime catch-per-unit-effort (CPUE, fish/net-m-hr) of 7.91×10^{-5}. During the 22 days of sampling by the USM-GCRL team, night sampling also occurred on 17 of those days for a total nighttime effort of 16,362 net-m-hrs and resulted in the tagging of two juvenile and an adult Gulf Sturgeon for a nighttime CPUE of 1.83×10^{-4}. An instance of night sampling is defined as any case where nets remained deployed following sunset as determined using the NOAA solar calculator (2014; http://www.esrl.noaa.gov/gmd/grad/solcalc/). Joint sampling efforts totaled 66,946 net-m-hrs (Table 3) on the Pascagoula River during 2012, with a total CPUE of 1.05×10^{-4}.

Table 3
Effort Summary for Fall 2012 (24 September–8 November) USM-GCRL and USACE-ERDC Combined Sampling of the Pascagoula River System.

	Day	Night
Number of days sampled	30	17
Total net-m-hrs	50,584	16,362
Number of sturgeon captured	4	3
Gulf Sturgeon CPUE	7.91×10^{-5}	1.83×10^{-4}

CPUE = catch-per-unit-effort

The USACE-ERDC team deployed 35 net sets in the Pearl River system during daylight hours from 25 September to 18 October 2012. Table 4 summarizes the sampling effort by the USACE-ERDC team in the Pearl River system. Over the 12 days sampled in the Pearl River system, two juveniles were tagged based on a total effort of 13,862 net-m-hrs. The CPUE was 1.44×10^{-4}.

Table 4
Effort Summary for Fall 2012 (25 September–18 October) USACE-ERDC Daytime Sampling of the Pearl River System.

	Day
Number of days sampled	12
Total net-m-hrs	13,862
Number of sturgeon captured	2
Gulf Sturgeon CPUE	1.44×10^{-4}

CPUE = catch-per-unit-effort

2013

Sampling efforts for Gulf Sturgeon within 2013 were again conducted in both the Pearl and Pascagoula river systems and encompassed both spring/summer and fall time periods. The USM-GCRL team reported 18 and 80 net sets, respectively, for the spring/summer and fall periods representing 7,613 and 53,324 net-m-hr effort. This effort captured 18 Gulf Sturgeon in the Pascagoula River, with two in the spring/summer and 16 in the fall sampling periods for a CPUE of 2.63×10^{-4} and 3.00×10^{-4}, respectively (Table 5).

Table 5
Effort Summary for Spring/Summer 2013 (30 May –16 July) and Fall 2013 (25 September–6 November) USM-GCRL Sampling of the Pascagoula River System.

	Spring/Summer	Fall
Number of days sampled	6	22
Total net-m-hrs	7,613	53,324
Number of sturgeon captured	2	16
Gulf Sturgeon CPUE	2.63×10^{-4}	3.00×10^{-4}

CPUE = catch-per-unit-effort

For the fall 2013 tagging period on the Pascagoula River only, which began on 25 September and was concluded on 6 November 2013, the data were split by day and night sampling periods (Table 6). During the 22 days of sampling by the USM-GCRL team, night sampling occurred on 15 of those days for a

Table 6
Day Versus Night Effort Summary for Fall 2013 (25 September–6 November) USM-GCRL Sampling of the Pascagoula River System.

	Day	Night
Number of days sampled	22	15
Total net-m-hrs	30,351	22,973
Number of sturgeon captured	3	13
Gulf Sturgeon CPUE	9.88×10^{-5}	5.66×10^{-4}

CPUE = catch-per-unit-effort

total of 53,324 net-m-hrs. The day effort was 30,351 net-m-hr whereas the night effort was 22,973 net-m-hr and these efforts yielded three and 13 Gulf Sturgeon, respectively. CPUE was 9.88×10^{-5} during day times but 5.66×10^{-4} during night collecting.

The ERDC team reported 13 sampling days in the spring/summer and 11 days in the fall periods and processed 32 and 33 net sets, respectively, in the Pearl River. They captured eight Gulf Sturgeon with six in the spring/summer and two in the fall periods. This resulted in 14,586 and 14,119 net-m-hr effort and a CPUE of 4.11×10^{-4} and 1.42×10^{-4}, respectively (Table 7).

Table 7
Effort Summary for Spring/Summer 2013 (12 March–11 July) and Fall 2013 (24 September–30 October) USACE-ERDC Sampling of the Pearl River System .

	Spring/Summer	Fall
Number of days sampled	13	11
Total net-m-hrs	14,586	14,119
Number of sturgeon captured	6	2
Gulf Sturgeon CPUE	4.11×10^{-4}	1.42×10^{-4}

CPUE = catch-per-unit-effort

2014

Sampling efforts for Gulf Sturgeon within 2014 were limited to summer in the Pearl River system. The USACE-ERDC team reported 6 net sets for the summer representing 2,739 net-m-hr effort. This effort resulted in 13 Gulf Sturgeon captured in this system with a CPUE of 4.75×10^{-3} (Table 8).

Table 8
Effort Summary for Summer 2014 (25 June–26 June) USACE-ERDC Sampling of the Pearl River System.

	Summer
Number of days sampled	2
Total net-m-hrs	2,739
Number of sturgeon captured	13
Gulf Sturgeon CPUE	4.75×10^{-3}

CPUE = catch-per-unit-effort

Gulf Sturgeon Tagged and Detections on the Entire Gulfport Array

During the 2012 sampling efforts, nine Gulf Sturgeon were tagged in both systems (Table 9), including six juvenile, one sub-adult and two adult Gulf Sturgeon. The two adult and one sub-adult were tagged using telemetry tags funded by a separate effort. These three Gulf Sturgeon in Table 9 (NOAA/SHIP) are included to better illustrate the field efforts needed to capture the target-sized individuals for the immediate project and to serve as a reference for other individuals that may show up near the Port study site during the project period.

Table 9
Summary of All Gulf Sturgeon Tagged by USM and ERDC in the Fall 2012 Season.

Date	Time	Drainage	Length (FL cm)	Tag Number	Project	Tag Type
9/26/2012	1130	Pearl	64.0	30177	MSPA	V13
10/9/2012	1420	Pearl	65.5	30182	MSPA	V13
10/16/2012	1706	Pascagoula	57.2	6214	MSPA	V9
10/25/2012	1535	Pascagoula	123.5	31790	NOAA/SHIP	V13
10/31/2012	1325	Pascagoula	147.2	46210	NOAA/SHIP	V16
10/31/2012	1917	Pascagoula	131.6	29899	NOAA/SHIP	V16
10/31/2012	1922	Pascagoula	75.0	30165	MSPA	V13
11/1/2012	2039	Pascagoula	64.6	6219	MSPA	V9
11/7/2012	1035	Pascagoula	80.0	30183	MSPA	V13

FL = fork length in centimeters.
Complete tag numbers are listed in Appendix 2.

Efforts in 2013 produced 26 captured Gulf Sturgeon (only 25 acoustically tagged) combined from both rivers (Table 10), including 14 juvenile, 5 sub-adult, and 7 adult fish. Eight Gulf Sturgeon were tagged in the Pearl and 18 in the Pascagoula River. A total of 13 Gulf Sturgeon (50% of total tags used) were tagged with MSPA purchased tags.

Efforts in 2014 (summer only) produced 13 captured Gulf Sturgeon from the Pearl River system, including 12 juvenile, 1 sub-adult, and no adult fish (Table 11). No Gulf Sturgeon was tagged with MSPA purchased tags because we were fishing as in previous years under the umbrella of several ongoing and independent projects. However, the SOW for the Port of Gulfport project did not include any tagging during the second year (summer/fall 2014) and as such all unused tags were returned to MSPA on 29 April 2014 at their request.

In terms of tag detections for the monitoring phase of this study, Gulf Sturgeon were detected simultaneously on multiple receivers because of the close proximity of receivers in the array. Our basic QA/QC procedures eliminated only exact duplicate detections that occurred on a single receiver without making a judgment on how to remove any other detection that occurred on other receivers simultaneously. For example, if a single fish was detected on multiple receivers with the same time stamp it was not removed from the detection count in this report.

The period of monitoring for the first full year of activity was 10 September 2012 through 19 September 2013; however, the dates of actual detections were from 20 September 2012 through 31 May 2013, as no fish were detected June through 19 September 2013 (Figure 2). No recently tagged (MSPA) Gulf Sturgeon (since spring 2013) were detected on the entire Gulfport array over the course of the first year. However, seven adult, two sub-adult, and one juvenile Gulf Sturgeon from either the Pearl or Pascagoula

Table 10
Summary of All Gulf Sturgeon Tagged by USM and ERDC During 2013 Sampling Efforts.

Date	Time	Drainage	Length (FL cm)	Tag Number	Project	Tag Type
5/20/2013	0925	Pearl	135.9	32244	SHIP	V16
5/20/2013	0939	Pearl	74.0	30179	MSPA	V13
5/25/2013	0953	Pearl	100.0	30180	MSPA	V13
5/26/2013	1032	Pearl	81.0	30181	MSPA	V13
5/30/2013	1319	Pascagoula	139.8	30587	NOAA	V16
6/24/2013	1311	Pascagoula	45.0	40496	NOAA Sect 6	V9
7/10/2013	1403	Pearl	50.3	6217	MSPA	V9
7/11/2013	1016	Pearl	42.8	6222	MSPA	V9
9/30/2013	1327	Pascagoula	58.0	2643	NOAA Sect 6	V9
10/8/2013	2002	Pascagoula	56.0	2638	NOAA Sect 6	V9
10/15/2013	1422	Pascagoula	155.0	31785	NOAA Sect 6	V13
10/22/2013	1022	Pearl	95.0	30187	MSPA	V13
10/22/2013	2001	Pascagoula	88.2	30169*	MSPA	V13
10/23/2013	1554	Pearl	39.8	**	**	**
10/28/2013	1751	Pascagoula	100.0	30172	MSPA	V13
10/28/2013	1943	Pascagoula	71.6	30166	MSPA	V13
10/28/2013	2352	Pascagoula	152.8	29896	NOAA	V16
10/28/2013	2343	Pascagoula	78.2	30167	MSPA	V13
10/30/2013	1529	Pascagoula	75.0	31787	NOAA Sect 6	V13
11/4/2013	2023	Pascagoula	138.6	29901	NOAA	V16
11/4/2013	1830	Pascagoula	100.0	29898	NOAA	V16
11/5/2013	2025	Pascagoula	135.0	29902	NOAA	V16
11/6/2013	0027	Pascagoula	80.4	30163	MSPA	V13
11/6/2013	1736	Pascagoula	70.4	6220	MSPA	V9
11/7/2013	0135	Pascagoula	142.2	29904	NOAA	V16
11/7/2013	0143	Pascagoula	88.0	30174*	MSPA	V13

*Denotes a fish which had a damaged acoustic tag mounting and the tag was replaced upon capture in 2013 (n=2) .
**Denotes individuals too small to tag.
FL = fork length in centimeters.
Complete tag numbers are listed in Appendix 2.

systems were detected at some point within the study area covered by the receivers (Table 12). These fish were tagged in 2010, 2011 or 2012 as part of other ongoing tagging efforts (Table 12).

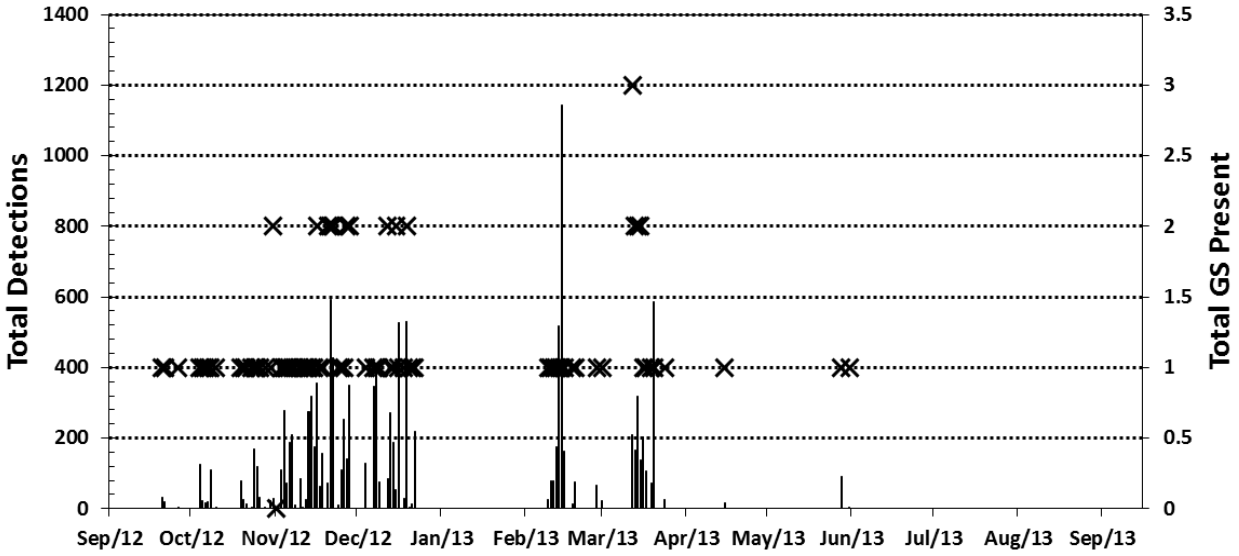
The period of monitoring for the second full year of activity was 20 September 2013 through 3 September 2014; however, the dates of actual detections were from 23 October 2013 through 1 May 2014, as no fish were detected 2 May through 3 September 2014 (Figure 3). Three Gulf Sturgeon tagged with MSPA tags in the fall of 2013 were detected on the entire Gulfport array over the course of the second monitoring

year. However, a total of 17 (out of 25 tagged; some from earlier tagging efforts) Gulf Sturgeon were detected over the second year of monitoring, 12 adult, three sub-adult, and two juvenile Gulf Sturgeon from the Pearl, Pascagoula, Escambia, Choctawhatchee and Blackwater (recaptured fish) drainages (see fish #9 and 11, Table 13) at some point within the study area covered by the receivers (Table 13). These fish were tagged in 2010, 2011, 2012 or 2013 as part of the Port project and other ongoing tagging efforts (Table 13).

Table 11
Summary of All Gulf Sturgeon Tagged by ERDC in the Summer 2014 Season.

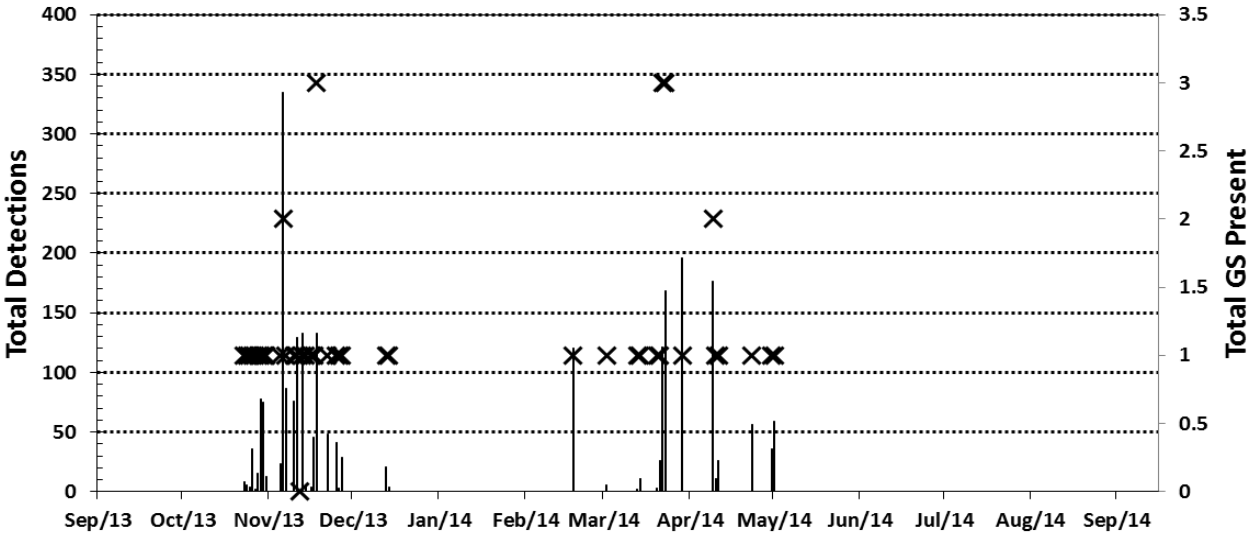
Date	Time	Drainage	Length (FL cm)	Tag Number	Project	Tag Type
6/25/2014	10:35	Pearl	42.0	**	**	**
6/25/2014	10:35	Pearl	60.9	45054	NOAA Sect 6	V13
6/25/2014	10:35	Pearl	88.1	32247	NOAA/SHIP	V16
6/25/2014	10:35	Pearl	92.5	32239	NOAA/SHIP	V16
6/25/2014	10:35	Pearl	60.4	45055	NOAA Sect 6	V13
6/25/2014	10:35	Pearl	58.3	45052	NOAA Sect 6	V13
6/25/2014	15:17	Pearl	59.9	40495	NOAA Sect 6	V9
6/25/2014	15:10	Pearl	36.2	**	**	**
6/26/2014	10:06	Pearl	59.8	**	**	**
6/26/2014	10:06	Pearl	43.6	**	**	**
6/26/2014	10:06	Pearl	49.0	**	**	**
6/26/2014	12:36	Pearl	43.4	**	**	**
6/26/2014	16:17	Pearl	63.8	**	**	**

**Denotes individuals too small to tag.
FL = fork length in centimeters.
Complete tag numbers are listed in Appendix 2.



These data include simultaneous detections as defined in the text.

Figure 2. Histogram of Total Daily Detections and Total Gulf Sturgeon Detected Compiled from All Deployed Receivers within the Array from 10 September 2012 through 19 September 2013.



These data include simultaneous detections as defined in the text.

Figure 3. Histogram of Total Daily Detections and Total Gulf Sturgeon Detected Compiled from All Deployed Receivers within the Array from 20 September 2013 through 3 September 2014.

Table 12
Gulf Sturgeon Length, Weight, and River of Origin of Fish Detected in the Entire Gulfport Acoustic Array During Year 1 Monitoring Period.

Fish #	Tag #	River of Origin	Date Tagged	FL (cm)	Weight (kg)
10	45717	Pearl	9/28/2010	162.5	47.6
6	45729	Pearl	10/7/2010	119	11.7
8	45746	Pearl	9/28/2010	132	29.9
7	45752	Pearl	9/28/2011	127.6	14.3
9	45767	Pearl	10/15/2010	148	24.2
2	31794	Pascagoula	10/13/2011	95.6	5.1
1	31795	Pascagoula	10/18/2011	67.6	1.6
3	46208	Pascagoula	10/24/2011	138	19.5
5	46210	Pascagoula	10/31/2012	147.2	26.7
4	46215	Pascagoula	10/7/2010	147	23.6

Fish number corresponds with y-axis on Figure 6.
FL = fork length in centimeters.

Receivers associated with the Port project were downloaded on 4 October, 20 November, and 13 December, 2012 and 14 January, 14 February, 14 March, 24-25 April, 23 May, 8 July, 8 and 12 August, and 26 September 2013 during the first year of the study. The number of Gulf Sturgeon detections by receiver location and individual tag are in Table 14, with a total of 12,288 detections over the period of time.

Seven adult, two sub-adult, and one juvenile fish were detected within the entire acoustic telemetry array during the 10 September 2012– 19 September 2013 monitoring period. Six of the fish (five adult, one

Table 13
Gulf Sturgeon Length, Weight, and River of Origin of Fish Detected on the Entire Gulfport Acoustic Array During Year 2 Monitoring Period.

Fish #	Tag #	River of Origin	Date Tagged	FL (cm)	Weight (kg)
17	45717	Pearl	9/28/2010	162.5	47.6
16	45748	Pearl	9/9/2013	159	NA
7	45746	Pearl	9/28/2010	132	29.9
6	45752	Pearl	9/28/2011	127.6	14.3
14	45721	Pearl	10/13/2010	148	16.5
3	30187	Pearl	10/22/2013	95	5.52
5	45714	Pearl	9/10/2013	101	17.8
8	32244	Pearl	6/20/2013	135.9	27
10	45753	Pearl	9/9/2013	137	NA
15	45737	Pearl	9/11/2013	151	NA
2	30163	Pascagoula	11/5/2013	80.4	3.0
1	2643	Pascagoula	9/30/2013	58	NA
12	46208	Pascagoula	10/24/2011	138	19.5
13	46210	Pascagoula	10/31/2012	147.2	26.7
4	30172	Pascagoula	10/28/2013	100	6.15
9	30598	Escambia	10/17/2011	137	22.1
11	46183	Choctawhatchee	10/12/2010	133	20
11	46183	Blackwater	10/11/2011	137	17.5

Fish number corresponds with y-axis on Figure 7.
FL = fork length in centimeters.

juvenile) were detected at the east gate; five fish (three adult, two sub-adult, and one juvenile) were detected at the west gate; and seven fish (five adult, one sub-adult) were detected in the Gulfport array. All 19 receivers (Table 14) had between three and six Gulf Sturgeon detected and at least 31 detections

Table 14
Summary of Gulf Sturgeon Detections on VEMCO VR2W Receivers by Individual Fish and Station during Year 1 Monitoring Period[1].

Size Class	River_Yr Tagged	Tag	East Gate			Gulfport Array												West Gate			Total Detections	Total Stations Present At
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S		
A	PE_2010	45717	38	178	284	4	2	16	16	4	7	11	21	66	30	61	123	55	29	17	21	983	19
A	PE_2010	45746	747	3686	1796	17	30	51	153	644	37	26	23	10	10	0	0	0	0	0	0	7230	13
SA	PR_2011	31794	0	0	0	0	5	0	0	0	1	5	0	0	0	0	0	0	0	0	1	12	4
A	PE_2010	45767	0	0	0	0	0	6	24	216	0	10	29	58	21	17	5	1	0	0	0	387	10
A	PR_2011	46208	169	830	942	40	45	36	114	449	8	9	17	22	19	19	26	33	12	3	9	2802	19
J	PR_2011	31795	0	1	4	1	1	0	2	26	0	0	0	0	0	0	0	0	0	0	0	35	6
A	PR_2012	46210	0	15	123	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	138	2
A	PR_2010	46215	233	306	47	0	12	1	0	0	27	25	8	0	0	0	0	0	0	0	0	659	8
A	PE_2011	45752	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	9	10	27	3
SA	PE_2011	45729	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	2	1	15	3
		Total Detections	1187	5016	3196	62	95	110	309	1339	80	86	98	156	80	97	154	89	61	31	42	Grand Total	12288
		Total GS @ Stat	4	6	6	4	6	5	5	5	5	6	5	4	4	3	3	3	4	4	5		

[1]Due to the physical positioning of the acoustic array, some fish are detected simultaneously on multiple receivers. Our QA/QC procedures eliminated exact duplicate detections (those that were identical). Also note no fish detected to date were tagged during the 2013 season. The time frame of detections is from 20 September 2012 (first detection) to 31 May 2013 (last detection); no further detections were recorded in the entire Port array from 1 June thru 19 September 2013. Complete tag numbers are listed in Appendix 2.

Table 15
Summary of Gulf Sturgeon Detections on VEMCO VR2W Receivers by Individual Fish and Station during Year 2 Monitoring Period[1].

Size Class	River_Yr Tagged	Tag	East Gate			Gulfport Array													West Gate			Total Detections	Total Stations
			A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S		
A	PE_2010	45717	2	0	0	0	0	0	0	0	0	0	1	1	1	11	25	3	0	6	6	56	9
A	PE_2010	45746	0	0	0	0	2	0	0	0	0	2	7	7	8	4	16	70	1	9	63	189	11
A	PR_2011	46208	27	68	65	0	8	10	157	102	8	7	5	1	6	8	17	6	1	8	17	521	18
A	PR_2012	46210	19	76	101	6	7	8	0	0	0	0	0	7	13	8	1	0	0	0	0	246	10
A	PE_2011	45752	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	1	0	0	0	6	3
A	PE_2013	45748	16	217	199	0	0	0	7	10	0	1	6	15	11	7	0	0	0	0	11	500	11
SA	PE_2013	45714	21	22	0	10	9	0	8	11	3	8	1	10	16	16	33	47	0	5	13	233	16
SA	PR_2013	30172	0	0	0	0	0	0	0	0	12	7	1	0	0	0	0	0	0	0	0	20	3
J	PR_2013	30163	22	30	0	1	10	4	7	25	0	0	0	1	0	0	8	9	0	8	21	146	12
J	PR_2013	2643	14	0	0	4	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0	25	3
SA	PE_2013	30187	0	0	0	1	3	28	41	50	0	0	0	0	0	0	0	0	0	0	0	123	5
A	PE_2010	45721	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	7	11	2
A	PE_2013	45737	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	20	27	2
A	CR_2010/BR_2011	46183	0	0	0	0	7	17	19	0	0	1	13	15	23	22	17	5	5	1	0	145	12
A	ER_2011	30598	0	5	0	17	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	31	4
A	PE_2013	45753	3	4	0	0	0	0	1	6	2	3	6	0	10	2	0	0	0	0	0	37	9
A	PE_2013	32244	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	27	9	56	3
		Total Detections	124	422	365	39	52	70	247	204	25	29	40	57	89	78	121	141	27	75	167	Grand Total	2372
		Total GS @ Stat	8	7	3	6	8	6	8	6	4	7	8	8	9	8	8	7	4	9	9		

[1]Due to the physical positioning of the acoustic array, some fish are detected simultaneously on multiple receivers. Our QA/QC procedures eliminated exact duplicate detections (those that were identical). Also note no fish detected to date were tagged during the 2014 season. The time frame of detections is from 23 October 2013 (first detection) to 1 May 2014 (last detection); no further detections were recorded in the entire Port array from 2 May thru 3 September 2014. Complete tag numbers are listed in Appendix 2.

(range: 31–5,016 detections, Table 14; see Figure 4 legend), and each Gulf Sturgeon passed within the 300-m detection zone of at least two receivers (range: 2–19 receivers, Table 14; see numbers in bubbles in Figure 4) between 10 September 2012 and 19 September 2013. Gulf Sturgeon occurred throughout all stations in the entire Gulfport array but considerable activity appears to be in the east gate and eastern portion of the Gulfport array (Table 14, Figure 4). The appearance of Gulf Sturgeon in the array is clearly during established and well documented (Heise et al., 2004, 2005) immigration (February–April) and emigration (September–December) periods (Figure 6).

During the second year of the project, the array was downloaded 19 November, 11 December 2013 and 6 January, 10 March, 10 April, 21 May, 8 July, 6 August, and removed on 3 September 2014. The number

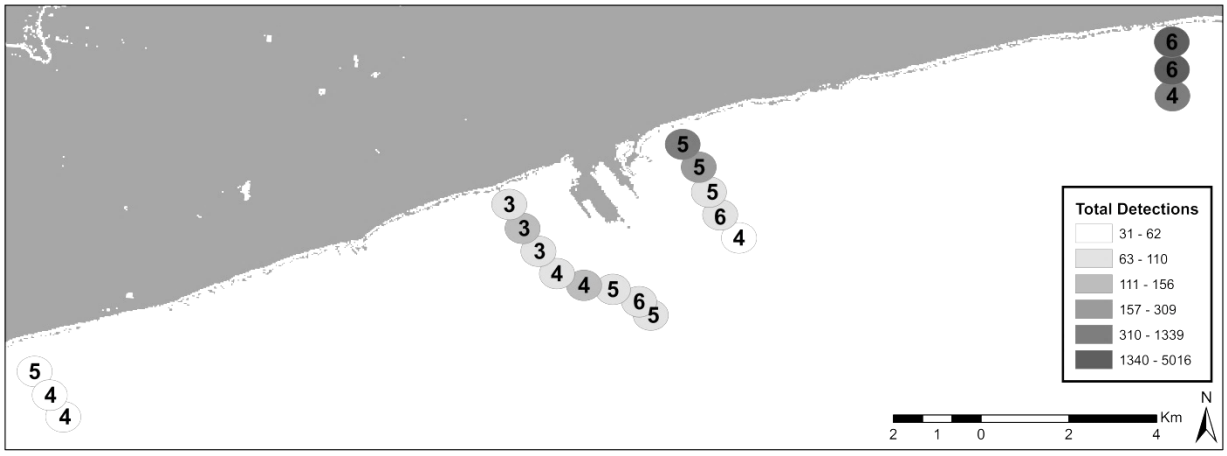


Figure 4. A Map of the Gulfport Acoustic Monitoring Array Summarizing the Number of Individual Gulf Sturgeon Detected (number in each circle) and the Relative Number of Detections at Each Monitoring Station (depicted by the shading of each circle) between 10 September 2012 and 19 September 2013.

of Gulf Sturgeon detections by receiver location and individual tag for the second year are found in Table 15, with a markedly reduced total of 2,372 detections occurring from 20 September 2013 to 3 September 2014 compared to Year 1 data.

Twelve adult, three sub-adult, and two juvenile fish were detected within the entire acoustic telemetry array during the 20 September 2013–3 September 2014 monitoring period. Nine of the fish (six adult, one sub-adult, two juvenile) were detected at the east gate; ten fish (eight adult, one sub-adult, and one juvenile) were detected at the west gate; and fourteen fish (nine adult, three sub-adult, two juvenile) were detected in the Gulfport array. All 19 receivers had between three and nine Gulf Sturgeon detected and at least 25 detections (range: 25–422 detections, see Figure 5 legend), and each Gulf Sturgeon passed within the 300-m detection zone of at least two receivers (range: 2–18 receivers, Table 15; see numbers in Figure 5 circles) between 20 September 2013 and 3 September 2014. Gulf Sturgeon occurred throughout all stations in the entire Gulfport array but considerable activity appears to be in the east gate and eastern portion of the Gulfport array (Table 15, Figure 5). The appearance of Gulf Sturgeon in the array is clearly during established and well

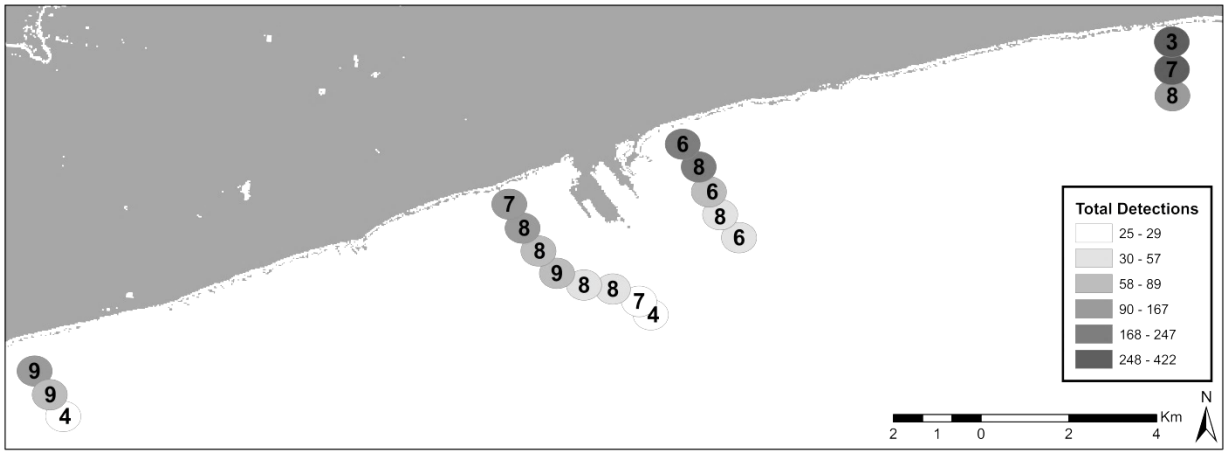
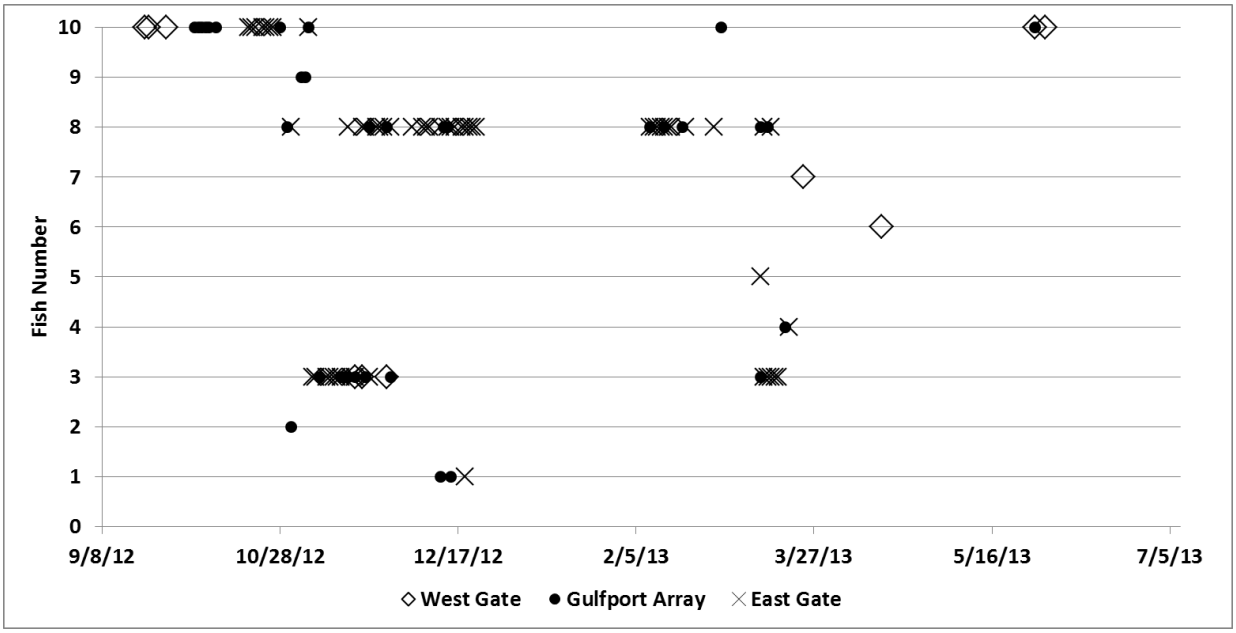


Figure 5. A Map of the Gulfport Acoustic Monitoring Array Summarizing the Number of Individual Gulf Sturgeon Detected (number in each circle) and the Relative Number of Detections at Each Monitoring Station (depicted by the shading of each circle) between 20 September 2013 and 3 September 2014.

documented immigration (February–April) and emigration (September–December) periods (Heise et al., 2004; 2005; Figure 7).

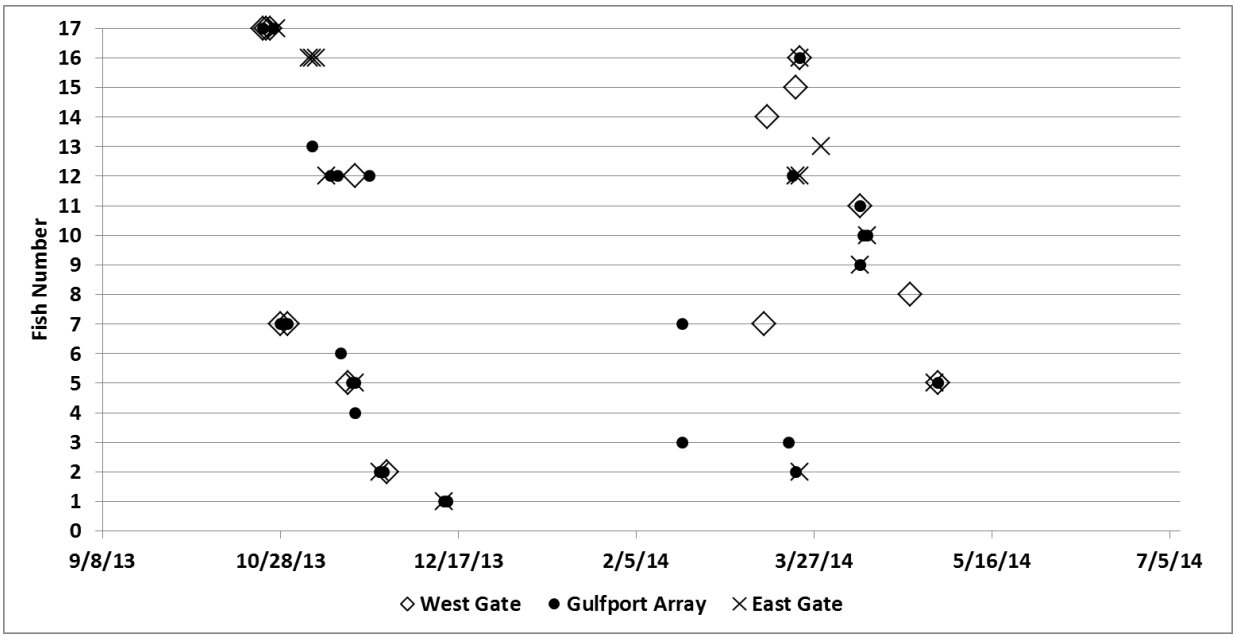
The number of detections per fish and time within the array varied greatly among all detected Gulf Sturgeon during the 10 September 2012–19 September 2013 monitoring period (Table 16). For example, three individuals (i.e., 45746, 45717, 46208; pooled by season) experienced long periods between first and last detections while their actual elapsed time within the entire Gulfport array was high, which suggests non-transitory movement through the array during the monitoring period (Table 16). In contrast, other individuals (i.e., 31794, 45767, 45729, 45752, and 46210) exhibited reduced days between first and last detection and generally had reduced elapsed time within the entire Gulfport array (Table 16), suggesting transitory movement patterns. Finally, only 3 of 13 (23.1%, pooled by season) tagged Gulf

Sturgeon had both a high number of days between first and last detections and a high cumulative detection time within the array (Table 16).



Fish numbers and corresponding data can be found in Table 12. A sturgeon was considered present if it was detected at least twice in one day.

Figure 6. Abacus Plot of Gulf Sturgeon Detected within Defined Portions of the Gulfport Acoustic Monitoring Array by Date During the Year 1 Monitoring Period.



Fish numbers and corresponding data can be found in Table 13. A sturgeon was considered present if it was detected at least twice in one day.

Figure 7. Abacus Plot of Gulf Sturgeon Detected within Defined Portions of the Gulfport Acoustic Monitoring Array by Date During the Year 2 Monitoring Period.

The number of detections per fish and time within the array varied greatly among all detected Gulf Sturgeon during the 20 September 2013–3 September 2014 monitoring period (Table 17). For example, three individuals (i.e., 30187, 46208, 45746) experienced relatively long periods between first and last detections with their actual elapsed time within the entire Gulfport array also being relatively long (Table 17); suggesting non-transitory movement within the array during the monitoring period (Table 17). In contrast, the remaining detected individuals exhibited a relatively long time period between first and last detection with some exhibiting long detection time (e.g., 45714, 45717, 30163, 45746, 45748, 45752) within the entire Gulfport array (Table 17) whereas others had short detection times (e.g., 46210, 30598, 32244, 46183, 45753) within the array (Table 17). The former group appears to exhibit non-transitory behavior while the latter group appeared to be more transitory in nature (Table 17). Finally, 3 of 23 (13.0%) tagged Gulf Sturgeon had both a high number of days between first and last detections and a high cumulative detection time within the array (Table 17).

Interestingly, four adult Gulf Sturgeon (45717, 45746, 46208, and 46210) were detected in both years of the monitoring period in the acoustic array (Tables 16 and 17); two from the Pearl and two from the Pascagoula drainages. This suggests some level of consistent and repeatable regional-scale movement patterns in Gulf Sturgeon from western Gulf of Mexico drainages.

The overall pattern of detections by life-history stage illustrates a high number of detections of adult fish within the array followed in descending order by sub-adults and juvenile stages (Figures 8 and 9). This pattern reflects, in part, the relative number of tagged individuals representing each life-history stage during the monitoring period (Tables 12 and 14). However, the high incident of adults along with generally high and consistent number of detections within the entire Gulfport array, regardless of year, season and river of origin, suggests Gulf Sturgeon are present within the area in more than a transitory manner, as previously considered.

During our 2012 and 2013 combined netting/tagging efforts, 35 Gulf sturgeon were processed and tagged with 54.3% (19) equipped with tags supplied by the Mississippi Port Authority to address the objectives of this project (see Tables 9 and 10). However, we have documented tagged individuals from both the Pearl and Pascagoula systems, as well as eastern population fish (Escambia, Choctawhatchee and Blackwater (recaptured fish) rivers), occurring within the entire Gulfport array but that were not tagged during the course of the current study. These fish were tagged during the course of other contemporaneous studies being conducted within each of the respective systems. Regardless of the source of the tagging efforts, these data do not negate the overall detection patterns or depicted periods of occurrence by Gulf Sturgeon within the project area.

Table 16
Summarized Detection Information for Gulf Sturgeon Reported in the Entire Gulfport Acoustic Array from 10 September 2012 through 19 September 2013.

Tag Number	River of Origin	Season	Stage	FL (cm)	Total Detections	Total Receivers	First Detection	Last Detection	Days Between First and Last Detection	Detection Time within Array (hr:min)	Detection Time within Array (days,hr,min)
31795	PA	F/W	J	67.6	35	6	12/9/2012	12/20/2012	12	265:33:00	11days 1hrs 33mins
31794	PA	F/W	SA	95.6	12	4	10/31/2012	11/1/2012	2	15:04:00	0days 15hrs 4mins
45746	PE	F/W	A	132	4653	8	10/30/2012	12/22/2012	54	1275:57:00	22days 3hrs 57mins
46208	PA	F/W	A	138	2035	19	11/6/2012	11/28/2012	23	522:22:00	21days 18hrs 22mins
45767	PE	F/W	A	148	387	10	11/3/2012	11/4/2012	2	30:23:00	1days 6hrs 23mins
45717	PE	F/W	A	162.5	868	18	9/20/2012	11/5/2012	47	1106:31:00	15days 2hrs 31mins
45729	PE	S/S	SA	119	15	3	4/15/2013	4/15/2013	1	0:50:00	0days 0hrs 50mins
45752	PE	S/S	A	127.6	27	3	3/24/2013	3/24/2013	1	6:21:00	0days 6hrs 21mins
45746	PE	S/S	A	132	2577	12	2/9/2013	3/15/2013	35	821:43:00	3days 5hrs 43mins
46208	PA	S/S	A	138	767	7	3/12/2013	3/17/2013	6	126:32:00	5days 6hrs 32mins
46215	PA	S/S	A	147	659	8	3/19/2013	3/21/2013	3	33:11:00	1days 9hrs 11mins
46210	PA	S/S	A	147.2	138	2	3/12/2013	3/12/2013	1	6:38:00	0days 6hrs 38mins
45717	PE	S/S	A	162.5	115	12	3/1/2013	5/31/2013	92	2177:38:00	30days 17hrs 38mins

Table 16 (continued).

	Interval Between Detections (hr:min)						
Tag Number	Min	Max	Mode	Mean	STD	CV	Total Distance Traveled (km)
31795	0:01	2:57	0:02	7:48	0:08	3.09	22.96
31794	0:01	13:40	0:02	1:22	4:05	2.99	15.32
45746	0:01	1:41	0:01	0:16	6:30	23.75	1511.92
46208	0:01	2:51	0:01	0:12	2:05	10.01	602.88
45767	0:01	1:19	0:02	0:04	0:08	1.76	86.21
45717	0:01	23:51	0:02	1:16	12:43	9.98	302.44
45729	0:01	0:13	0:02	0:03	0:03	1.04	1.18
45752	0:01	5:18	0:02	0:14	1:01	4.23	1.79
45746	0:01	21:52	0:01	0:19	7:22	23.12	1060.42
46208	0:01	6:52	0:01	0:09	1:27	8.85	154.46
46215	0:01	7:26	0:01	0:03	0:19	6.45	237.58
46210	0:01	1:11	0:02	0:02	0:07	2.47	15.73
45717	0:01	22:44	0:01	19:06	5:42	10.35	115.32

River of origin: PA=Pascagoula, PE=Pearl.

Season: F/W = fall/winter, S/S = spring/summer.

Stage: J=juvenile, SA=sub-adult, A=adult.

Complete tag numbers are listed in Appendix 2.

Days between first and last detection: total number of calendar days between first and last detection day within the array.

Detection time within array (hr:min): sum of elapsed time between successive detections for an individual fish within the array for a specified telemetry period.

Detection time within array (days,hr,min): value for detection time within array (hr:min) converted to equivalent days,hr,min format.

Total Distance Traveled*: Total cumulative distance traveled. This includes all the moves between stations regardless of where the stations are located in relation to each other. For example, if a fish travels back and forth four times between two stations located 1 km apart, he will have traveled 4 * 2 * 1 = 8km (if ending on the station it started). The fish will have a net displacement of zero, a range of 1km and a total distance traveled of 8km.

* Definitions and calculations derived from AquaTracker ver 1.10B. José J. Reyes-Tomassini and Megan Moore with Barry Berejikian and Jonathan Lee in association with the NOAA Pacific Northwest Fisheries Science Center and the Puget Sound Telemetry Workgroup.

Table 17
Summarized Detection Information for Gulf Sturgeon Reported in the Entire Gulfport Acoustic Array from 20 September 2013 through 3 September 2014.

Tag Number	River of Origin	Season	Stage	FL (cm)	Total Detections	Total Receivers	First Detection	Last Detection	Days Between First and Last Detection	Detection Time within Array (hr:min)	Detection Time within Array (days,hr,min)
2643	PA	F/W	J	58.0	25	3	12/13/2013	12/14/2013	0.50	12:04:55	0days 12hrs 4mins
30163	PA	F/W	J	80.4	73	7	11/25/2013	11/27/2013	1.62	38:59:24	1days 14hrs 59mins
30172	PA	F/W	SA	100.0	20	3	11/18/2013	11/18/2013	0.03	0:47:40	0days 0hrs 47mins
45714	PE	F/W	SA	101.0	138	12	11/16/2013	11/18/2013	2.03	48:37:18	2days 0hrs 37mins
45717	PE	F/W	A	162.5	56	9	10/23/2013	10/27/2013	3.95	94:51:38	3days 22hrs 51mins
45746	PE	F/W	A	132.0	181	9	10/28/2013	10/31/2013	2.55	61:10:56	2days 13hrs 10mins
45748	PE	F/W	A	159.0	395	3	11/5/2013	11/7/2013	1.83	43:58:47	1days 19hrs 58mins
45752	PE	F/W	A	127.6	6	3	11/12/2013	11/14/2013	1.89	45:15:40	1days 21hrs 15mins
46208	PA	F/W	A	138.0	411	15	11/10/2013	11/22/2013	11.82	283:34:36	11days 19hrs
46210	PA	F/W	A	138.0	50	7	11/6/2013	11/6/2013	0.07	1:37:33	0days 1hrs 37mins
30163	PA	S/S	J	80.4	73	9	3/22/2014	3/23/2014	0.32	7:44:38	0days 7hrs 44mins
30187	PE	S/S	SA	95.0	123	5	2/18/2014	3/20/2014	30.50	732:03:08	30days 12hrs 3mins
30598	ER	S/S	A	137.0	31	4	4/9/2014	4/9/2014	0.22	5:20:24	0days 5hrs 20mins
32244	PE	S/S	A	135.9	56	3	4/23/2014	4/23/2014	0.05	1:16:56	0days 1hrs 16mins
45714	PE	S/S	SA	101.0	95	9	4/30/2014	5/1/2014	0.46	10:55:25	0days 10hrs 55mins
45721	PE	S/S	A	148.0	11	2	3/14/2014	3/14/2014	0.01	0:17:47	0days 0hrs 17mins
45737	PE	S/S	A	151.0	27	2	3/22/2014	3/22/2014	0.04	0:52:35	0days 0hrs 52mins
45746	PE	S/S	A	132.0	8	5	3/2/2014	3/13/2014	11.38	273:08:59	11days 9hrs 8mins
45748	PE	S/S	A	159.0	105	10	3/23/2014	3/23/2014	0.42	10:10:33	0days 10hrs 10mins
45753	PE	S/S	A	137.0	37	9	4/10/2014	4/11/2014	0.87	20:56:14	0days 20hrs 56mins
46183	CR	S/S	A	133.0	145	12	4/9/2014	4/9/2014	0.55	13:14:35	0days 13hrs 14mins
46208	PA	S/S	A	138.0	110	8	3/21/2014	3/23/2014	1.39	33:28:03	1days 9hrs 28mins
46210	PA	S/S	A	138.0	196	3	3/29/2014	3/29/2014	0.18	4:18:54	0days 4hrs 18mins

Table 17 (continued).

	Interval Between Detections (hr:min)						
Tag Number	Min	Max	Mode	Mean	STD	CV	Total Distance Traveled (km)
2643	0:01	7:08	0:01	0:30	1:37	3.24	11.27
30163	0:00	21:03	0:00	0:32	2:45	5.10	26.28
30172	0:00	0:09	0:00	0:02	0:02	1.02	0.97
45714	0:00	16:18	0:00	0:21	3:27	9.73	51.27
45717	0:00	17:13	0:00	1:43	3:53	2.26	33.09
45746	0:00	17:04	0:00	0:20	1:43	5.06	67.65
45748	0:00	23:09	0:00	0:06	1:10	10.54	202.50
45752	0:00	16:42	N/A	9:03	17:44	1.96	1.22
46208	0:00	1:53	0:00	0:41	7:33	10.92	185.93
46210	0:00	0:50	0:00	0:01	0:07	3.60	21.34
30163	0:00	4:48	0:00	0:06	0:34	5.33	21.54
30187	0:00	7:01	0:00	6:00	17:49	10.97	42.54
30598	0:00	4:33	0:00	0:10	0:49	4.64	21.21
32244	0:00	0:12	0:00	0:01	0:02	1.63	15.59
45714	0:00	4:20	0:00	0:06	0:33	4.86	16.99
45721	0:00	0:03	0:02	0:01	0:01	0.62	0.61
45737	0:00	0:10	0:00	0:02	0:02	1.07	14.99
45746	0:00	5:42	N/A	10:10	5:43	2.98	0.61
45748	0:00	3:27	0:00	0:05	0:29	4.98	35.72
45753	0:00	13:22	0:00	0:34	2:17	3.95	9.70
46183	0:00	6:55	0:00	0:05	0:35	6.47	49.24
46208	0:00	15:07	0:00	0:18	1:37	5.32	38.66
46210	0:00	0:12	0:00	0:01	0:01	1.04	79.33

River of origin: PA=Pascagoula, PE=Pearl, ER=Escambia; CR=Choctawhatchee.
Season: F/W = fall/winter, S/S = spring/summer.
Stage: J=juvenile, SA=sub-adult, A=adult.

Complete tag numbers are listed in Appendix 2.

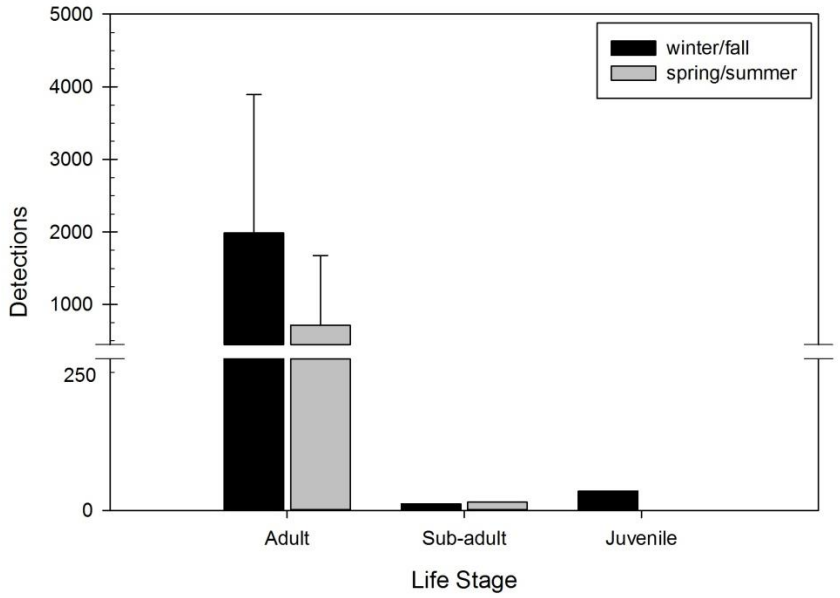
Days between first and last detection: total number of calendar days between first and last detection day within the array.

Detection time within array (hr:min): sum of elapsed time between successive detections for an individual fish within the array for a specified telemetry period.

Detection time within array (days,hr,min): value for detection time within array (hr:min) converted to equivalent days,hr,min format.

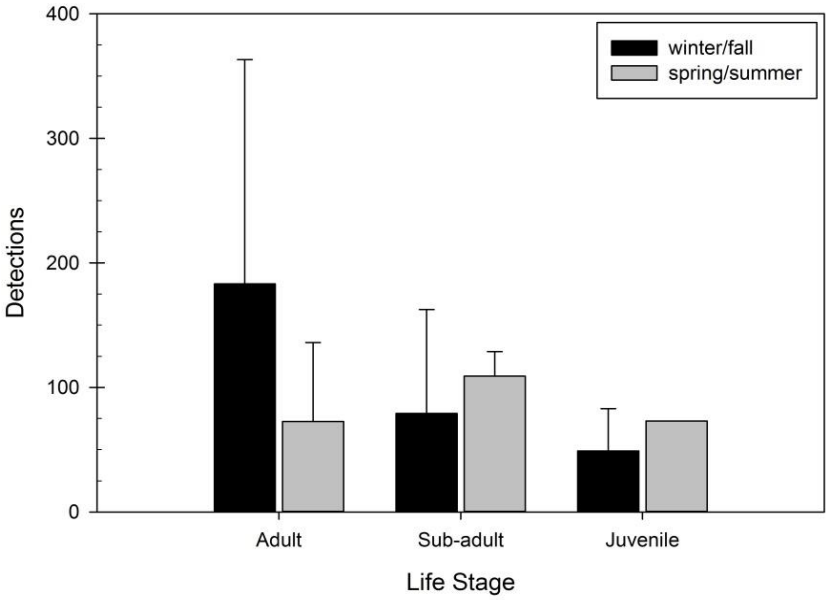
Total Distance Traveled*: Total cumulative distance traveled. This includes all the moves between stations regardless of where the stations are located in relation to each other. For example, if a fish travels back and forth four times between two stations located 1 km apart, he will have traveled 4 * 2 * 1 = 8km (if ending on the station it started). The fish will have a net displacement of zero, a range of 1km and a total distance traveled of 8km.

* Definitions and calculations derived from AquaTracker ver 1.10B. José J. Reyes-Tomassini and Megan Moore with Barry Berejikian and Jonathan Lee in association with the NOAA Pacific Northwest Fisheries Science Center and the Puget Sound Telemetry Workgroup.



The vertical bar represents 1 standard deviation. These data include simultaneous detections as defined in the text.

Figure 8. Mean Number of Detections per Individual within Each Life-History Stage by Season During the Year 1 Monitoring Period.



The vertical bar represents 1 standard deviation. These data include simultaneous detections as defined in the text.

Figure 9. Mean Number of Detections per Individual within Each Life-History Stage by Season During the Year 2 Monitoring Period.

Interpretation of Monitoring Results

The detection histories noted during the monitoring period illustrate a pattern contrary to our initial hypotheses. We originally proposed that juvenile and sub-adult life-history stages of Gulf sturgeon would be more prevalent within the near shore habitat typified within the Gulfport Harbor project area based on studies conducted in other parts of the species range (Sulak and Clugston, 1999; Sulak et al., 2009). However, more adults have been documented within the project area during the monitoring period, presumably during pre- and post-migratory periods. The relative low occurrence of juveniles and sub-adults within the project area suggests these life-history stages may experience restricted movements away from estuaries of natal rivers as young fish and only begin to exploit other more expansive habitats in their later developmental years (Peterson et al., 2013). An alternative explanation considers that the number of individuals per life-history stage documented within the array is simply a reflection of their relative abundance within the sampling areas of their respective river systems. Thus, the number of tagged fish detected within the array mirrors the relative abundance of those respective life-history stages. However, despite the low occurrence of juveniles and sub-adults within the project area during our monitoring period, the occurrence patterns documented do illustrate the importance of the area as "used" by Gulf Sturgeon, whether the habitat serves as a corridor (Havrylkoff et al., 2012; Peterson et al., 2013) between other more suitable habitats, a feeding zone, or a pre-/post-migratory acclimation zone.

Key Results

►Adult Gulf Sturgeon are mainly from the Pascagoula and Pearl drainages but there were some eastern population fish (Escambia, Choctawhatchee and Blackwater (recaptured fish) drainages) that appeared in the Gulfport array.

►Adults were more common than sub-adult and juveniles in shallow waters associated with Gulfport array.

►Overall, Gulf Sturgeon occurrence appears to be more concentrated on east gate and eastern portion of the Gulfport array compared to the west gate and western portion of the array.

►Total detections were markedly lower in the year 2 data set than year 1, with four individuals (two from each drainage) returning to the array over the 2 years of this project.

►In the Year 1 monitoring period, 3 of 13 (23.1%, pooled by season) tagged Gulf Sturgeon had both a high number of days between first and last detections and a high cumulative detection time within the array, whereas in Year 2, 3 of 23 (13.0%) tagged Gulf Sturgeon had both a high number of days between first and last detections and a high cumulative detection time within the array.

Assumptions/Caveats

Many studies have noted the reduction/interference in the detection range of acoustic signals by the VR2W receivers by both environmental (water column properties, biological noise, tidal and weather

conditions) and anthropogenic factors (physical structures, mechanical noise, boat motors) (Heupel et al., 2006; Simpfendorfer et al., 2008; Payne et al., 2010; Topping and Szedlmayer, 2011; Mathies et al., 2014). We used a conservative detection radius for our deployed receivers (300-m detection radius from center of deployed receiver) to optimize our ability to detect tagged fish within the acoustic area of interest. However, there may be some windows of time where the detection radius was larger (clear, low-noise periods of time, calm weather, etc.) and other periods of time (dredging, heavy boat traffic, etc.) where the radius may be < 300 m.

The initial assessment for any telemetry-based study is to examine the overall pattern of detections among the receivers making up the acoustic array (all fish combined) to evaluate "hot spots" within the project area. We feel we have been able to do this in a conservative approach. A high number of total detections or high number of detected individual Gulf Sturgeon within a consistent zone may help to discriminate or define more-favorable habitat or conditions. However, a high number of detections on a receiver may be interpreted as (1) the tagged fish spends an enormous amount of time exclusively within the detection radius, generally exhibiting a relatively stationary behavior with little movement, or (2) the tagged fish passes through the detection radius multiple times, repeatedly over the course of the detection period (i.e., extreme movement). This type of analytical approach was not within the scope of the SOW.

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Appendix 1

Proposed schedule of major tasks associated with tagging and monitoring telemetry tagged Gulf sturgeon for the Gulfport Harbor monitoring project.

						Project YR 1													Project YR 2											Project YR 3						
	2012												2013												2014												2015
MAJOR TASKS	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J
Buoys & Receivers																																					
Buoy construction						X	X	X																													
Array deployment								X																													
Receiver downloads									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					
Array retrieval																																X					
Gulf Sturgeon																																					
Tagging activities								X	X	X	X						X	X	X	X	X	X	X							X							
Reports																																					
Annual												X	X	X																								
Final																																				X	X	X

Appendix 2

Listing of all acoustic tag codes used in the Port of Gulfport Gulf Sturgeon monitoring study. Project category 'Other' = studies not funded by Atkins International Gulfport project that were either conducted by the USM/ERDC teams or other sturgeon teams in other systems; thee are most likely V16 tags.

Abbreviated Tag ID	Tag ID	River of Origin	Date Tagged	FL (cm)	Project	Tag Type
2638	A69-1601-2638	Pascagoula	10/8/2013	56.0	NOAA Sect 6	V9
2643	A69-1601-2643	Pascagoula	9/30/2013	58	NOAA Sect 6	V9
6214	A69-1601-6214	Pascagoula	10/16/2012	57.2	MSPA	V9
6217	A69-1601-6217	Pearl	7/10/2013	50.3	MSPA	V9
6219	A69-1601-6219	Pascagoula	11/1/2012	64.6	MSPA	V9
6220	A69-1601-6220	Pascagoula	11/6/2013	70.4	MSPA	V9
6222	A69-1601-6222	Pearl	7/11/2013	42.8	MSPA	V9
29896	A69-9001-29896	Pascagoula	10/28/2013	152.8	NOAA	V16
29898	A69-9001-29898	Pascagoula	11/4/2013	100.0	NOAA	V16
29899	A69-9001-29899	Pascagoula	10/31/2012	131.6	NOAA	V16
29901	A69-9001-29901	Pascagoula	11/4/2013	138.6	NOAA	V16
29902	A69-9001-29902	Pascagoula	11/5/2013	135.0	NOAA	V16
29904	A69-9001-29904	Pascagoula	11/7/2013	142.2	NOAA	V16
30163	A69-1601-30163	Pascagoula	11/5/2013	80.4	MSPA	V13
30165	A69-1601-30165	Pascagoula	10/31/2012	75.0	MSPA	V13
30166	A69-1601-30166	Pascagoula	10/28/2013	71.6	MSPA	V13
30167	A69-1601-30167	Pascagoula	10/28/2013	78.2	MSPA	V13
30169	A69-1601-30169	Pascagoula	10/22/2013	88.2	MSPA	V13
30172	A69-1601-30172	Pascagoula	10/28/2013	100	MSPA	V13
30174	A69-1601-30174	Pascagoula	11/7/2013	88.0	MSPA	V13
30177	A69-1601-30177	Pearl	9/26/2012	64	MSPA	V13
30179	A69-1601-30179	Pearl	5/20/2013	74.0	MSPA	V13
30180	A69-1601-30180	Pearl	5/25/2013	100.0	MSPA	V13
30181	A69-1601-30181	Pearl	5/26/2013	81.0	MSPA	V13
30182	A69-1601-30182	Pearl	10/9/2012	65.5	MSPA	V13
30183	A69-1601-30183	Pascagoula	11/7/2012	80	MSPA	V13
30187	A69-1601-30187	Pearl	10/22/2013	95	MSPA	V13
30587	A69-9001-30587	Pascagoula	5/30/2013	139.8	NOAA	V16
30598	A69-9001-30598	Escambia	10/17/2011	137	NOAA	V16
31785	A69-1601-31785	Pascagoula	10/15/2013	155.0	NOAA Sect 6	V9
31787	A69-1601-31787	Pascagoula	10/30/2013	75.0	NOAA Sect 6	V9
31790	A69-1601-31790	Pascagoula	10/25/2012	123.5	NOAA Sect 6	V9
31794	A69-1601-31794	Pascagoula	10/13/2011	95.6	NOAA Sect 6	V9
31795	A69-1601-31795	Pascagoula	10/18/2011	67.6	NOAA Sect 6	V9
32239	A69-1601-32239	Pearl	6/25/2014	92.5	SHIP	V16
32244	A69-1601-32244	Pearl	6/20/2013	135.9	SHIP	V16

32247	A69-1601-32247	Pearl	6/25/2014	88.1	SHIP	V16
40495	A69-1303-40495	Pearl	6/25/2014	59.9	NOAA Sect 6	V9
40496	A69-1303-40496	Pascagoula	6/24/2013	45.0	NOAA Sect 6	V9
45052	A69-1303-45052	Pearl	6/25/2014	58.3	NOAA Sect 6	V13
45054	A69-1303-45054	Pearl	6/25/2014	60.9	NOAA Sect 6	V13
45055	A69-1303-45055	Pearl	6/25/2014	60.4	NOAA Sect 6	V13
45714	A69-1303-45714	Pearl	9/10/2013	101	Other	V16
45717	A69-1303-45717	Pearl	9/28/2010	162.5	Other	V16
45721	A69-1303-45721	Pearl	10/13/2010	148	Other	V16
45729	A69-1303-45729	Pearl	10/7/2010	119	Other	V16
45737	A69-1303-45737	Pearl	9/11/2013	151	Other	*
45746	A69-1303-45746	Pearl	9/28/2010	132	Other	V16
45748	A69-1303-45748	Pearl	9/9/2013	159	Other	*
45752	A69-1303-45752	Pearl	9/28/2011	127.6	Other	V16
45753	A69-1303-45753	Pearl	9/9/2013	137	Other	*
45767	A69-1303-45767	Pearl	10/15/2010	148	Other	V16
46183	A69-1303-46183	Choctawhatchee	10/12/2010	133	Other	V16
46183	A69-1303-46183	Blackwater	10/11/2011	137	Other	V16
46208	A69-1303-46208	Pascagoula	10/24/2011	138	NOAA	V16
46210	A69-1303-46210	Pascagoula	10/31/2012	147.2	NOAA	V16
46215	A69-1303-46215	Pascagoula	10/7/2010	147	NOAA	V16

Appendix P

Noise and Vibration Technical Report

Technical Report

Noise and Vibration Assessment

Port of Gulfport Expansion Project Environmental Impact Statement

Gulfport, Mississippi

Prepared by:
North Wind, Inc.

August 2015

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Noise and Vibration Assessment
Port of Gulfport Expansion Project
Environmental Impact Statement
Port of Gulfport to Hattiesburg, Mississippi

Introduction

This technical report describes the assessment methodology employed for determination of potential impacts related to the operational airborne noise and vibrations from the increased rail traffic resulting from the proposed improvements to the Port of Gulfport. The analysis was conducted to support The Port of Gulfport Expansion Project Environmental Impact Statement (EIS). The region of influence (ROI) for this analysis was the Kansas City Southern (KCS) railway, which begins at the Port of Gulfport, and terminates approximately 70 miles to the north in Hattiesburg, Mississippi (MS). From there it connects with the Norfolk Southern line that continues into the northeast U.S. connecting to networks serving the entire eastern U.S. The KCS railway line also connects to the Canadian National line in Hattiesburg and continues to Chicago and Canada.

The project team performed a General Noise Assessment and General Vibration Assessment in accordance with Federal Railroad Administration (FRA) guidance and Federal Transit Administration (FTA) guidelines published in "Transit Noise and Vibration Impact Assessment" (May 2006, available at http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf). Noise and vibration impacts of future rail traffic associated with the No-Action Alternative and the Proposed Project Alternative were evaluated to assess the project-related effects of airborne noise and vibration. Analysis results indicated a number of potential airborne noise impacts throughout the Project corridor, with the largest concentration in the Gulfport and Hattiesburg areas. Ground-borne vibration (GBV) impacts would affect considerably fewer receptors than airborne noise impacts, and were generally located in the high-speed rural areas. No receptors currently fall within the ground-borne noise (GBN) impact contours, and none would be impacted under either the No-Action or Proposed Project Alternatives.

1. AIRBORNE NOISE

1.1 Background

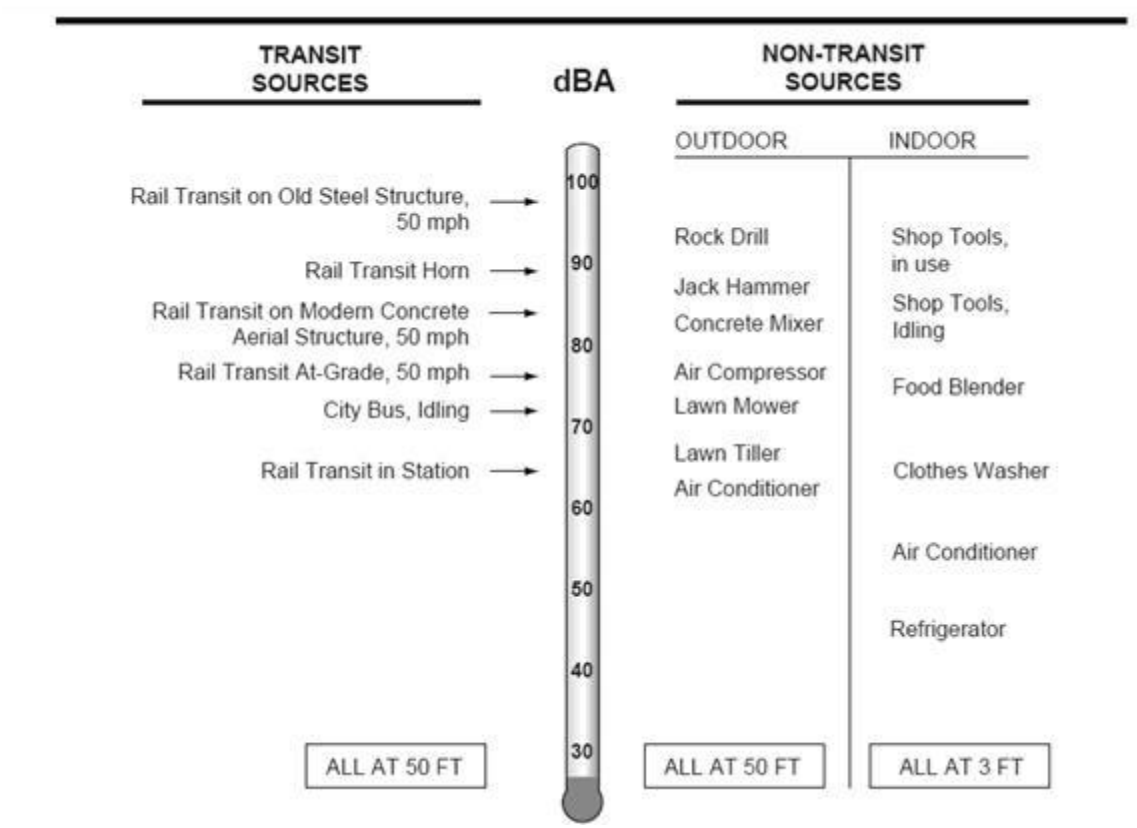
The following is a summary of basic noise concepts. The FTA guidance manual, “Transit Noise and Vibration Impact Assessment" (May 2006) discusses these concepts in greater detail.

Sound travels through the air as waves of tiny air pressure fluctuations caused by vibration. In general, sound waves travel away from the noise source as an expanding spherical surface. As a result, the energy contained in a sound wave is spread over an increasing area as it travels away from the source, resulting in a decrease in loudness at greater distances from the noise source. Noise is typically defined as unwanted or undesirable sound.

The intensity or loudness of a sound is determined by how much the sound pressure fluctuates above and below the atmospheric pressure and is expressed in units of decibels. The decibel (dB) scale used to describe sound is a logarithmic scale that accounts for the large range of sound pressure levels in the environment. Using this scale, the range of sound normally encountered can be expressed by values between 0 and about 140 dB.

The average human ear does not perceive all frequencies equally. Therefore, the A-weighting scale was developed to approximate the way the human ear responds to sound levels; it mathematically applies less "weight" to frequencies we don't hear well, and applies more "weight" to frequencies we do hear well. The A-weighted decibel (dBA) is the unit of measurement adopted in the FTA impact assessment procedures. For comparison purposes, typical dBA noise levels for various types of sound sources are summarized in Figure 1.

The logarithmic nature of dB scales is such that individual dB levels for different noise sources cannot be added directly to give the noise level for the combined noise source. For example, two noise sources that produce equal dBA levels at a given location will produce a combined noise level that is 3 dBA greater than either sound alone. When two noise sources differ by 10 dBA, the combined noise level will be 0.4 dBA greater than the louder source alone.



Source: FTA, "Transit Noise and Vibration Impact Assessment" (May 2006)

Figure 1. Typical A-weighted sound levels

People generally perceive a 10 dBA increase in a noise level as a doubling of loudness. For example, an average person will perceive a 70 dBA sound as twice as loud as a 60 dBA sound. People generally cannot detect differences of one dBA to two dBA. Most people with average hearing abilities can detect differences of three dBA. Most people under normal listening conditions would likely perceive a five-dBA change as a noticeable change.

When distance is the only factor considered, sound levels from isolated point sources of noise typically decrease by about six dBA for every doubling of distance (e.g., increasing from 50 feet to 100 feet, 100 feet to 200 feet, 200 to 400 feet) from the noise source. When the noise source is a continuous line (e.g.,

train moving along a track) noise levels decrease by about three dBA for every doubling of distance away from the source.

The equivalent sound level (Leq) is often used to describe sound levels that vary over time, usually a one-hour period. Leq is the descriptor adopted in the FTA impact assessment procedures when evaluating noise sensitive sites with primarily daytime and evening use. The Leq is considered an energy-based average noise level. Using twenty-four consecutive one-hour Leq values it is possible to calculate daily cumulative noise exposure. The descriptor used to express daily cumulative noise exposure is the Day-Night Sound Level (Ldn). Ldn is the descriptor adopted in the FTA impact assessment procedures when evaluating sensitive sites with a nighttime sensitivity to noise. The Ldn includes a 10-dBA increase imposed on noise that occurs during the nighttime hours (defined in the 2006 FTA guidance manual as between 10 p.m. and 7a.m.) to account for greater nighttime sensitivity to noise. The 10-dBA increase makes the Ldn useful when assessing noise sensitive land uses with nighttime use such as residences and other buildings where people normally sleep.

1.2 Noise Impact Criteria

The following is a summary of noise impact criteria established to evaluate potential noise impacts. The FTA guidance manual, "Transit Noise and Vibration Impact Assessment" (May 2006) discusses development of the noise impact criteria in greater detail.

FTA noise impact criteria depend upon the land use of affected receptors, as well as existing noise exposure at that receptor. The FTA recognizes three land use categories for assessing airborne noise impacts, identified and described in Table 1, and assigns a noise descriptor to each land use category.

Table 1. Categories for Noise-Sensitive Receptors

Land-Use Category	Noise Descriptor, dBA	Description of Land-Use Category
1	Outdoor Leq(h)*	Tracts of land where quiet is an essential element in their intended purpose. This category includes lands set aside for serenity and quiet, such as outdoor amphitheaters and concert pavilions, as well as national historic landmarks with significant outdoor use. Also included are recording studios and concert halls.
2	Outdoor Ldn	Residences and buildings where people normally sleep. This category includes homes, hospitals, and hotels where a nighttime sensitivity to noise is assumed to be of utmost importance.
3	Outdoor Leq(h)[2]	Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, and churches where it is important to avoid interference with such activities as speech, meditation, and concentration on reading material. Places for meditation or study associated with cemeteries, monuments, museums, campgrounds and recreational facilities can also be considered to be in this category. Certain historical sites and parks are also included.

*Source: FTA, "Transit Noise and Vibration Impact Assessment" (May 2006). *Leq for the noisiest hour of transit-related activity during hours of noise sensitivity.*

The FTA noise impact criteria (summarized in Figure 2, FTA Noise Impact Criteria) are defined by two curves, representing severe and moderate noise impacts, as defined below.

> *Severe Impact.* A significant percentage of people are highly annoyed by noise in this range. Noise mitigation would normally be specified for severe impact areas unless it is not feasible or reasonable (there is no practical method of mitigating the impact).
>
> *Moderate Impact.* In this range, other project-specific factors are considered to determine the magnitude of the impact and the need for mitigation. Other factors include the predicted increase over existing noise levels, the types and number of noise-sensitive land uses affected, and existing outdoor-indoor sound insulation, and the cost-effectiveness of mitigating noise to more acceptable levels. Noise levels in the moderate impact range also require consideration and implementation of mitigation measures determined to be reasonable.

Figure 2 shows that noise impact criteria are determined as a function of existing noise exposure versus project-related noise exposure.

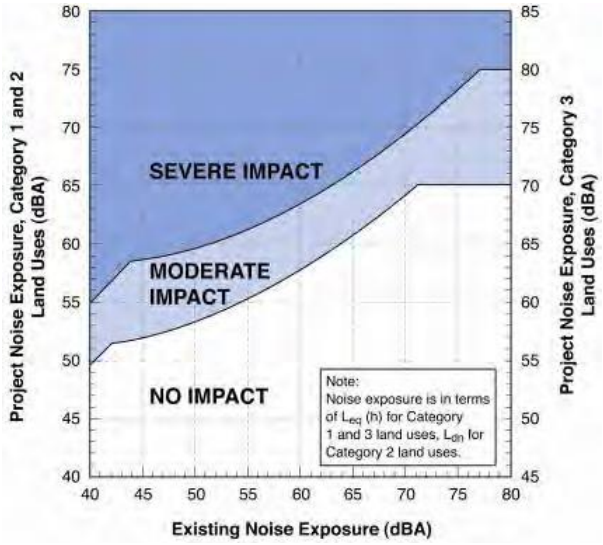


Figure 2. FTA noise impact criteria

1.3 Noise Assessment Methodology

The noise analysis was performed in accordance with FTA guidelines published in the "Transit Noise and Vibration Impact Assessment" (May 2006). The FTA guidance manual provides three levels of evaluation: 1) a Noise Screening Procedure, 2) a General Noise Assessment Procedure and 3) a Detailed Noise Analysis Procedure. Consistent with FTA application, the General Noise Assessment was performed for comparison of the No-Action Alternative and the Proposed Project Alternative described in Section 2.8 of the EIS.

Because the Proposed Project Alternative would include an increase in rail traffic only during nighttime hours, the noise analysis evaluated rail-related noise at land uses where overnight sleep occurs. This includes Category 2 and certain Category 3 land uses (i.e. campgrounds). However, we did conduct a search for Category 1 land uses using the methods described below. None were identified.

Using the Geographic Information System (GIS), a 0.5-mile buffer was created on either side of the track for the length of the rail line to determine the locations of potentially affected noise-sensitive receptors. Residences and other sensitive land uses where people normally sleep were identified using current high-resolution aerial photography combined with Google Street View. Residences in densely populated areas in Harris County (i.e., Gulfport) were crosschecked against county tax department parcel data and land-use records. This process effectively filtered former residential structures (Land Use Category 2) that are currently used for business purposes (not identified as noise sensitive).

Ambient noise levels were measured at 24 residential receptor locations along the KCS railway corridor. Receptors were selected to represent a range of population densities along the length of the rail line. Receptor locations, sample times, and Leq and calculated Ldn are provided in Appendix 1. Noise was measured during June 2-4, 2014 with SoundProDL1 Datalogging sound level meters (serial numbers BLN050002 and BLG06004), encased in a Quest 2900 outdoor monitoring kit. The meters were calibrated at the beginning of each sampling day in accordance with manufacturer instructions. Noise was measured (in accordance with Option 4 for residential land uses identified in Appendix D of the 2006 FTA "Transit Noise and Vibration Impact Assessment") for a one-hour period between 7:30 a.m. and 5:30 p.m. The Leq that was measured during that period was converted to Ldn by subtracting two dB from the Leq. As documented by FTA, this method results in a moderate underestimation of the computed Ldn.

In 2000, the Federal Railway Administration (FRA) published the *Horn Noise MS Excel Spreadsheet Model* to assess the impacts of locomotive horns on the local noise environment. The project team completed model runs including scenarios that incorporated existing noise levels, number of trains, train speed, presence or absence of horns, and noise shielding. The model results were incorporated into the GIS and compared with the locations of residential receptors to determine the number of impacted receptors. Existing noise impacts from train traffic were not evaluated, as those impacts were already incorporated into the noise data collected during the June 2014 sampling period. Rail traffic associated with the No-Action Alternative and the Proposed Project Alternative was evaluated in order to assess the project-related effects of airborne noise.

1.4 Existing Conditions

Two general areas of existing noise conditions were identified along the Project corridor according to similarities in ambient conditions and average noise levels. These included the developed areas of Gulfport and Hattiesburg at the north and south ends of the KCS railway line, and the rural/small town areas between.

The Gulfport and Hattiesburg noise environment includes two segments on each end of the KCS line. The Gulfport segment extends from the southern terminus of the KCS line to Clark Drive, located just north of the KCS line/Interstate 10 intersection. The Hattiesburg segment extends from the KCS line/Highway 98 intersection to the northern terminus of the line. Common ambient noise sources in these predominantly urban and suburban areas included vehicular traffic, rail traffic, aircraft, and human voices/activity. The average Ldn within these segments was 53 dBA.

The rural/small town segment includes the portion of the line between the Gulfport and Hattiesburg segments. Ambient noise sources in these predominantly rural areas included vehicular traffic, rail traffic, barking dogs, and birds. The average Ldn within these segments was 50 dBA. Noise data and location information for existing conditions are provided in Appendix 1, Table A1-1 and Figure A1-1.

1.5 Noise Impact Assessment

Impacts for the No-Action Alternative and the Proposed Project Alternative are based on maximum Port facility throughput, which is expected to occur in 2060. The rail impacts analysis includes horn noise in the vicinity of at-grade crossings, as well as wayside noise, which results from the interaction between train wheels and the tracks.

1.5.1 No – Action Alternative

Under the No-Action Alternative, the Port would generate approximately 14 trains per day from the Port to the Gulfport Rail yard. Nine trains per day would be anticipated from the rail yard to the KCS railway northern terminus. All Port rail traffic would operate between 10 p.m. and 7 a.m. to minimize extensive vehicular traffic backups at road/rail crossings.

Table 2 presents the calculated distance from the track to the moderate and severe impact contours for Land Use Category 2 receptors associated with the No-Action Alternative. Impact contours for various shielding scenarios and speed regimes were calculated and are shown in Appendix 2, Figure A2-1. Table 3 shows the number of noise sensitive receptors that would fall within the moderate and severe noise impact contours under the No-Action scenario. The Land Use Category 2 receptors are primarily single-family residences. However, the impacted receptors include two hotels and 18 multi-unit residences within the moderate noise impact contour, and seven multi-unit residences in the severe noise impact contour. Two campgrounds located adjacent to the KCS railway line are included as Land Use Category 3 receptors. Both campgrounds fall within the severe noise impact contour.

As shown on Table 3, 1,054 Land Use Category 2 receptors (approximately 15 per mile) would be included in the moderate impact contour, and 1,638 (approximately 24 per mile) would fall within the severe impact contour. The majority of these receptors are located in or near the cities of Gulfport and Hattiesburg, primarily due to the combination of population density and the high number of at-grade crossings in these more urbanized areas.

Table 2. No-Action Alternative – Distance to Noise Impact Contours

Segment Location	Ambient Noise Level	Train Speed (mph)	Train Length (Rail Cars)	Trains Per Day	Distance to Moderate Impact Contour (feet)		Distance to Severe Impact Contour (feet)	
					Road Crossing	Wayside	Road Crossing	Wayside
Port North to Rail Yard (33rd St.)	53	10	(2,400' (37)	14	1,572	680	952	386
Rail Yard (33rd St.) to Polk St.	53	10	3,900' (60)	9	1,346	579	806	324
Polk St. to Dedeaux Rd.	53	20	3,900' (60)	9	1,313	533	838	295
Dedeaux Rd. to Clark Rd.	53	49	3,900' (60)	9	1,199	857	760	505
Clark Rd. to Hwy 98	50	49	3,900' (60)	9	1,969	1013	1,216	590
Hwy 98 North to MP 65	53	49	3,900' (60)	9	1,456	857	898	505
MP 65 to Northern Terminus	53	10	3,900' (60)	9	1,149	538	726	317

Table 3. No-Action – Impacted Receptors

Land Use Category	Moderate Impact	Severe Impact
Category 2	1,054	1,638
Category 3	0	2

1.5.2 Proposed Project Alternative

Under the Proposed Project Alternative, the Port would generate up to 23 trains per day from the Port to the Gulfport Rail yard, nine more than the No-Action Alternative. Fourteen trains per day (five more than the No-Actin Alternative) would be anticipated from the rail yard to the KCS railway northern terminus. As with the No-Action Alternative, all Port rail traffic would operate between 10 p.m. and 7 a.m. to minimize extensive vehicular traffic delays at road/rail crossings.

Table 4 presents the calculated distance from the track to the moderate and severe impact contours for Land Use Category 2 receptors associated with the Proposed Project Alternative. Impact contours for various shielding scenarios and speed regimes were calculated and are shown in Appendix 2, Figure A2-2. Table 5 shows the number of noise sensitive receptors that would fall within the moderate and severe noise impact contours under the Proposed Project Alternative scenario. The Category 2 receptors are primarily single-family residences. However, the impacted receptors include three hotels (one more than the No-Action Alternative) and 18 multi-unit residences (the same as the No-Action Alternative) within the moderate noise impact contour. One hotel (one more than the No-Action Alternative) and eight multi-unit residences (one more than the No-Action Alternative) would occur within the severe noise impact contour. Two Land Use Category 3 receptors (the same two campgrounds as the No-Action Alternative) would be within the severe noise impact contour under the Proposed Project Alternative scenario. The number of receptors within the moderate impact contour would increase by 268 (a 25 percent increase) compared to the No-Action Alternative, and receptors in the severe impact contour would increase by 144 (a nine percent increase) (Table 5).

Table 4. Proposed Project Alternative – Distance to Noise Impact Contours

Segment Location	Ambient Noise Level	Train Speed	Train Length (Rail Cars)	Trains Per Day	Distance to Moderate Impact Contour (feet)		Distance to Severe Impact Contour (feet)	
					Road Crossing	Wayside	Road Crossing	Wayside
Port North to Rail Yard (33rd St.)	53	10	(2,400' (37)	23	1,867	825	1,144	476
Rail Yard (33rd St.) to Polk St.	53	10	3,900' (60)	15	1,612	709	978	403
Polk St. to Dedeaux Rd.	53	20	3,900' (60)	15	1,342	601	858	358
Dedeaux Rd. to Clark Rd.	53	49	3,900' (60)	15	1,408	1,030	903	617
Clark Rd. to Hwy 98	50	49	3,900' (60)	15	2,013	1,213	1,246	719
Hwy 98 North to MP 65	53	49	3,900' (60)	15	1,726	1,030	1,078	617
MP 65 to Northern Terminus	53	20	3,900' (60)	15	1,651	756	1,028	440

Table 5. Proposed Project Alternative – Impacted Receptors

Land Use Category	Moderate Impact	Change from No-Action	Severe Impact	Change from No-Action
Category 2	1,322	+268	1,782	+144
Category 3	0	0	2	0

1.5.3 Summary of Potential Airborne Noise Impacts

The Proposed Project Alternative would result in increased train-generated noise along the KCS railway when compared to the No-Action Alternative. Table 6 provides a summary of the impacts to Land Use Category 2 receptors. No Land Use Category 1 receptors were identified within the impact contours. Two Land Use Category 3 receptors were included in the analysis (campgrounds situated near the KCS railway line in the rural area between Gulfport and Hattiesburg). These two receptors would be within the severe impact contours for both the No-Action Alternative and the Proposed Project Alternative. Table 6 summarizes the change in noise impacts between the No-Action and Proposed Project Alternatives. Under the Proposed Project Alternative, the number of moderately impacted receptors would increase by 25 percent, and the number of severely impacted receptors would increase by nine percent. The implementation of the Proposed Project Alternative would result in an additional four receptors per mile that would be moderately impacted, and two receptors per mile that would be severely impacted compared to the No-Action Alternative.

Table 6. Summary of Noise Impacts to Category 2 Receptors

	Impacted Category 2 Receptors	Change from No-Action	Percentage Change in Impacted Receptors	Number of Impacted Receptors per Mile
No Action Alternative				
Moderate Impact	1,054	NA	NA	15
Severe Impact	1,638	NA	NA	24
Proposed Project Alternative				
Moderate Impact	1,322	+268	+25%	19
Severe Impact	1,782	+144	+9%	26

1.6 Noise Mitigation

The FTA and FRA require that mitigation measures be considered when a noise assessment suggests either severe or moderate impacts. The Proposed Project Alternative would result in an increase in both severe and moderate impacts to noise-sensitive receptors. The majority of these impacts would occur in the Hattiesburg and Gulfport areas due to the combination of high population densities and numerous at-grade rail crossings (with their associated horn noise).

Reducing horn noise by the use of noise barriers is generally not feasible because they reduce driver visibility at intersections. Residential soundproofing is a mitigation option for smaller scale impacts, but is not feasible in this case due to the large number of impacted receptors. The most feasible noise mitigation measure would likely be the establishments of Quiet Zones in the Greater Gulfport and Hattiesburg areas.

By adopting approved Supplemental Safety Measures (SSMs) at each public grade crossing, a Quiet Zone of at least a half-mile long can be established that would preclude the need for use of a horn at rail

crossings, and thus eliminate this noise source. These measures would be applicable in addition to the standard safety devices required at most public grade crossings (e.g. stop signs, reflective cross bucks, flashing lights with gates that do not completely block travel over the tracks). The six SSM's identified below have been predetermined by the FRA to fully or in tandem compensate for the lack of a locomotive horn:

1. *Reconstruct the street crossing into an under-over pass.* This measure, while expensive, would completely eliminate the need for a train to sound its horn.
2. *Temporary closure of a public highway-rail grade crossing.* This measure requires closure of the grade crossing one period for each 24 hours, and must be closed the same time each day.
3. *Four-quadrant gate system.* This measure involves the installation of at least one gate for each direction of traffic to fully block vehicles from entering the crossing.
4. *Gates with medians or channelization devices.* This measure keeps traffic in the proper travel lanes as it approaches the crossing. This denies the driver the option of circumventing the gates by traveling in the opposing lane.
5. *One-way street with gates.* This measure consists of one-way streets with gates installed so that all approaching travel lanes are completely blocked.
6. *Pole-mounted wayside warning horns.* This measure places warning horns on signal poles directly at the street crossing in question. The wayside horns are still relatively loud (92 dBA at 100 feet) but can be effectively aimed directly down the affected street to minimize disturbance to adjacent neighborhoods.

The lead agency in designating a Quiet Zone is the local public authority responsible for traffic control and law enforcement on the roads crossing the tracks. In order to satisfy the FRA regulatory requirements, the public transit agency must work closely with the highway/traffic agency while also coordinating with any freight or passenger railroad operator sharing the right-of-way.

2. GROUND-BORNE VIBRATION

This section summarizes potential ground-borne vibration (GBV) impacts associated with the proposed Project. The General Vibration Assessment described here was prepared in accordance with FTA guidelines ("Transit Noise and Vibration Impact Assessment," May 2006); the FRA relies on the FTA for noise and vibration impact assessment guidance. The purpose of this assessment is to determine the number of potential GBV impacts associated with the proposed Project at vibration-sensitive land uses (receptors) throughout the Project corridor. Existing and future rail traffic scenarios were analyzed, and the incremental increase in GBV associated with the proposed Project was identified.

2.1 Background

The following is a summary of basic GBV concepts. The FTA guidance manual, "Transit Noise and Vibration Impact Assessment" (May 2006) discusses these concepts in greater detail.

GBV can be a serious concern for residents or at facilities that are vibration-sensitive, such as laboratories or sound recording studios. The effects of GBV include perceptible movement of building floors, interference with vibration sensitive instruments, rattling of windows, and shaking of items on shelves or hanging on walls. Additionally, GBV can cause the vibration of room surfaces resulting in ground-borne noise (GBN). GBN is typically perceived as a low frequency rumbling sound.

Vibration consists of rapidly fluctuating motions. However, human response to vibration is a function of the average motion over a longer (but still relatively short) time period, such as one second. The root mean square (RMS) amplitude of a motion over a one second period is commonly used to predict human response to vibration. For convenience, decibel notation is used to describe vibration relative to a reference level. In this section, vibration decibels (VdB) relative to a reference of 10^{-6} inches per second (1 µin/sec) are used. VdB is the unit of measurement adopted in the FTA impact assessment procedure.

In contrast to airborne noise, GBV is not a phenomenon that most people experience every day. The background vibration level in residential areas is usually 50 VdB or lower. This is well below the threshold of perception for humans, which is around 65 VdB. Levels at which vibration interferes with sensitive instrumentation such as nuclear magnetic resonance (NMR) equipment and other optical instrumentation can be much lower than the threshold of human perception. Most perceptible indoor vibration is caused by sources within a building such as the operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible GBV are construction equipment, steel-wheeled trains, and traffic on rough roads.

Vibration as it relates to railway movements is generally caused by uneven interactions between the wheels of the train and the railway surfaces. Examples of this include wheels rolling over rail joints and flat spots on wheels that are not true. These uneven interactions result in vibration that travels through the adjacent ground. This vibration can range from barely perceptible to very disruptive.

2.2 FTA Vibration Criteria

The following is a summary of vibration impact criteria established to evaluate potential vibration impacts. The FTA guidance manual, "Transit Noise and Vibration Impact Assessment" (May 2006) discusses development of the vibration impact criteria in greater detail.

The FTA recognizes three land use categories for assessing general vibration impacts.

Land Use Category 1 - High Vibration Sensitivity: This category includes environments where low ambient vibration is essential for building operations. Acceptable levels of vibration in these environments are well below the levels associated with human annoyance. Typical Category 1 land uses include vibration-sensitive research and manufacturing facilities, hospitals, and university research operations. Land Use Category 1 also includes special land uses, such as concert halls, television and recording studios, and theaters, which can be very sensitive to vibration and ground-borne noise. The FTA has developed special vibration criteria for these land uses.

Land Use Category 2 - *Residential:* This category includes all residential land uses and any building where people sleep, such as hotels and hospitals.

Land Use Category 3 - Institutional: This category includes schools, churches, other institutions, and quiet offices that do not have vibration-sensitive equipment, but still have the potential for activity interference.

FTA identifies separate criteria for both GBV and GBN. GBN is often masked by airborne-noise; therefore GBN criteria are primarily applied to subway operations in which airborne noise is negligible. The GBV and GBN criteria used in this assessment are shown in Table 7. These are the criteria adopted in the FTA impact assessment procedures when evaluating potential vibration impacts. The FTA recommends that the frequent-event criterion be applied for line-haul freight trains because of the lengthy vibration event caused by the rail cars.

The frequent event vibration impact threshold is lower than the other event vibration impact thresholds for occasional or infrequent events, and thus represents the most conservative case scenario.

Table 7. Ground-Borne Vibration and Ground-Borne Noise Impact Criteria

Land Use Category	Ground Borne Vibration Impact Levels (VdB re 1 Micro-inch/sec)			Ground Borne Noise Impact Levels (dB re 20 Micro pascals)		
	Frequent Events [1]	Occasional Events[2]	Infrequent Events[3]	Frequent Events [1]	Occasional Events[2]	Infrequent Events[3]
Category 1: Buildings where vibration would interfere with interior operations	65 VdB[4]	65 VdB[4]	65 VdB[4]	NA[4]	NA[4]	NA[4]
Category 2: Residences and buildings where people normally sleep	72 VdB	75 VdB	80 VdB	35 dBA	38 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use	75 VdB	78 VdB	83 VdB	40 dBA	43 dBA	48 dBA

dB = decibels
VdB = vibration decibels
dBA = A-weighted sound level
NA = Not Applicable
Source: FTA. "Transit Noise and Vibration Assessment" (May 2006)(FTA-VA-90-1103-06) page 8-3
Note: If the building will rarely be occupied when the trains are operating, there is no need to consider impact.

1. "Frequent events" is defined as more than 70 vibration events per day.
2. "Occasional Events" is defined as between 30 and 70 vibration events of the same source per day. Most commuter trunk lines have this many operations.
3. "Infrequent Events" is defined as fewer than 30 vibration events of the same source per day. This category includes most commuter rail branch lines.
4. This Criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research would require detailed evaluation to define acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC system and stiffened floors.
5. Vibration-sensitive equipment is generally not sensitive to ground-borne noise.

2.3 Ground-Borne Vibration Assessment Methodology

The FTA guidance manual provides three levels of evaluation 1) Vibration Screening Procedure, 2) General Vibration Assessment and 3) Detailed Vibration Analysis. A General Vibration Assessment was performed to determine incremental GBV and GBN effects of the No-Action Alternative and the Proposed Project Alternative. The General Vibration Assessment as described by the FTA guidance manual (2006) is the potential vibration in terms of the overall vibration velocity level and the A-weighted sound level. Estimated GBV and GBN levels are compared to the impact criteria and potential impact distances are provided for comparison purposes. GBV and GBN effects were calculated for existing conditions, the No-Action Alternative and the Proposed Project Alternative, based on current and

proposed rail traffic. The differences between the existing conditions, the No-Action alternative and the Proposed Project Alternative conditions are the incremental impacts.

This vibration assessment principally assessed project-related GBV at Land Use Category 2 and Land Use Category 3 (i.e., campgrounds). This vibration assessment also included a search for Land Use Category 1 sites where vibration levels below human perception may affect the use of the building. No Land Use Category 1 sites were identified.

The assessment began with data gathering and construction of GIS base maps for the project. The railroad alignments, train traffic data (number of locomotives and rail cars per train), aerial photography, and surface geology were among the critical information gathered. Train traffic data were compiled during the noise assessment. The traffic conditions developed for use in the noise assessment documented in the first part of this section were also applied in the vibration analysis. Likewise, receptors identified through the noise assessment aerial photography reconnaissance were also utilized in the vibration assessment.

Using GIS, a 0.5-mile buffer was created on either side of the track for the length of the rail line to determine the locations of potentially affected vibration and GBN-sensitive receptors. Residences and other sensitive land uses where people normally sleep were identified using current high-resolution aerial photography combined with Google Street View. Residences in densely populated areas in Harris County (i.e., Gulfport) were crosschecked against county tax department parcel data and land-use records. This process effectively filtered former residential structures (Land Use Category 2) currently used for business and not identified as vibration sensitive.

Based on a review of geologic maps of Mississippi (http://www.epa.gov/gmpo/edresources/geology-image-02.html ,http://mrdata.usgs.gov/geology/state/state.php?state=MS), the Gulfport area is underlain by coastal deposits, which consist primarily of loams, sands, gravel, and clay. North of Gulfport the geology consists of the Citronelle Formation and Pascagoula and Hattiesburg Formation. The Citronelle Formation is composed of gravel and sandstone with a few thin layers of silt or clay. The Pascagoula and Hattiesburg Formation is composed of clay, sandy clay, and sand. Based on the FTA guidance manual, these three formations would be relatively inefficient at propagating GBV when compared to stiff clay or bedrock dominated formations.

There was no evidence discovered during the online research indicating that stiff clay or shallow bedrock, which are typically associated with efficient propagation of GBV, occur along the project alignment. It is therefore assumed that the geologic materials underlying the project are inefficient at propagating GBV.

The generalized ground surface vibration curves (Figure 10-1 in the *FTA Transit Noise and Vibration Assessment*) provide the distance from track centerline versus vibration decibel (VdB) levels. These curves represent the upper range of measured vibration levels for generalized conditions and well-maintained systems. In order to determine potential impacts at receptors, the generalized (reference) ground surface vibration curve needs to be adjusted to reflect conditions particular to a project and often for different conditions particular to a location within a project.

The GBV reference curve most applicable to this Project assumes a locomotive-powered passenger or freight train traveling at 50 miles per hour (mph); adjustments were applied to this reference curve to reflect the particular conditions for this Project, including speed adjustments, source adjustments, path adjustments and receptor adjustments.

Table 8 shows the adjustments used to determine an appropriate estimate of vibration levels for existing conditions. The adjustments accounted for track type, vehicle type and the speed regimes identified in the noise assessment.

Table 8. Existing Vibration Curve Adjustment Factors

Base Curve:			
Vehicle type:	Locomotive Powered passenger or freight		
Speed	50 mph		
Source Vibration Adjustment Factors:			
Speed Adjustment:	Particular to speed regimes, below		
Vehicle Parameters:	No special vehicle parameters		
Track Conditions:	CWR, special trackwork where applicable		10 VdB
Path Vibration Adjustment Factors:			
Geology:	Stiff clay/ Bedrock (efficient soil)	0 linear feet	10 VdB
	Sand /Gravel/Sediment (inefficient soil)	396,600 linear feet	0 VdB
	Total	396,600 linear feet	0 VdB
Rock Layer:	no rock layer		0 VdB
Foundation Coupling:	wood framed house		-5 VdB
Receiver Vibration Adjustment Factors:			
Floor Attenuation:	Number of floors above grade	1 floor	-2 VdB
Floor Resonance:	Amplification		6 VdB
Conversion to GBN:	Low-Frequency (<30 Hertz)		-50 VdB
49 MPH Speed Regime			
Speed Adjustment:	Speed	49 MPH	0 VdB
Total Adjustment for GBV:			
Wayside:			-1VdB
Total Adjustment for GBN			
Wayside:			-51 VdB
20 MPH Speed Regime			
Speed Adjustment:	Speed	20 MPH	-8 VdB
Total Adjustment for GBV:			
Wayside:			-9 VdB
Total Adjustment for GBN			
Wayside:			-59 VdB
10 MPH Speed Regime			
Speed Adjustment:	Speed	10 MPH	-14VdB
Total Adjustment for GBV:			
Wayside:			-15 VdB
Total Adjustment for GBN			
Wayside:			-65 VdB

CWR = Continuous Welded Rail
Mph = miles per hour
GBV = ground-borne vibration
GBN = ground-borne noise
VdB = vibration decibels

GBV curves, based on the adjustment factors for existing conditions contained in Table 8, are shown in Figure 3. Distances to GBV and GBN impact levels for existing conditions, based on the GBV curves and the thresholds listed in Table 7 are shown in Tables 9 and 10. Because the rail line is not used frequently, and trains do not run during nighttime hours, the "*occasional events*" GBV and GBN levels were used for existing condition. Following FTA recommendation, the "*frequent events*" criteria levels were used to assess impacts that would occur under the No-Action Alternative or the Proposed Project Alternative.

2.4 Existing Conditions

The KCS railway is currently utilized infrequently; maximum current usage is about six trains per day. As shown on Table 9, the General Vibration Assessment identified 60 Land Use Category 2 receptors that are currently within the GBV impact contour. In Addition, two Land Use Category 3 receptors (campgrounds) are currently within the GBV impact contour. All receptors that fall within the GBV impact contour for the existing condition are located between Dedeaux Road and milepost 65 (i.e., the 49 mph speed zone).

As shown on Table 10, the maximum distance for GBN impacts is 20 feet, in the 49 mph speed zone between Dedeaux Road and milepost 65. No receptors were identified within the GBN impact contours.

2.5 Ground-Borne Vibration Impact Assessment

2.5.1 No – Action Alternative

Under the No-Action Alternative, the Port would generate approximately 14 trains per day from the Port to the Gulfport Rail yard. Nine trains per day would be anticipated from the rail yard to the KCS railway northern terminus. All Port rail traffic would operate between 10 p.m. and 7 a.m. to minimize conflicts with vehicular traffic at road/rail crossings. Lower GBV and GBN criteria levels were used for the No-Action Alternative to account for the increase in freight traffic and the fact that the trains will be operating on the line during nighttime hours.

Table 11 shows the calculated distance to the GBV impact contours and the number of receptors for Land Use Category 2 receptors associated with the No-Action Alternative. Table 12 presents the calculated distance to the GBN impact contours under the No-Action scenario. The impacted Land Use Category 2 receptors are limited to single-family residences. Two campgrounds located near the KCS railway line are included as Land Use Category 3 receptors and fall within the GBV impact contour. Both fall outside the GBN impact contour.

As shown on Table 13, 122 Land Use Category 2 receptors (approximately two per mile) would be included in the GBV impact contours, the majority of which are located in rural areas. This is primarily due to the higher train speed, which increases the impact of GBV. As with the existing conditions, two Category 3 receptors (campgrounds) would be within the 49 mph GBV impact contour. As shown in Table 12, no receptors would be included in the GBN impact contours under the No-Action Alternative.

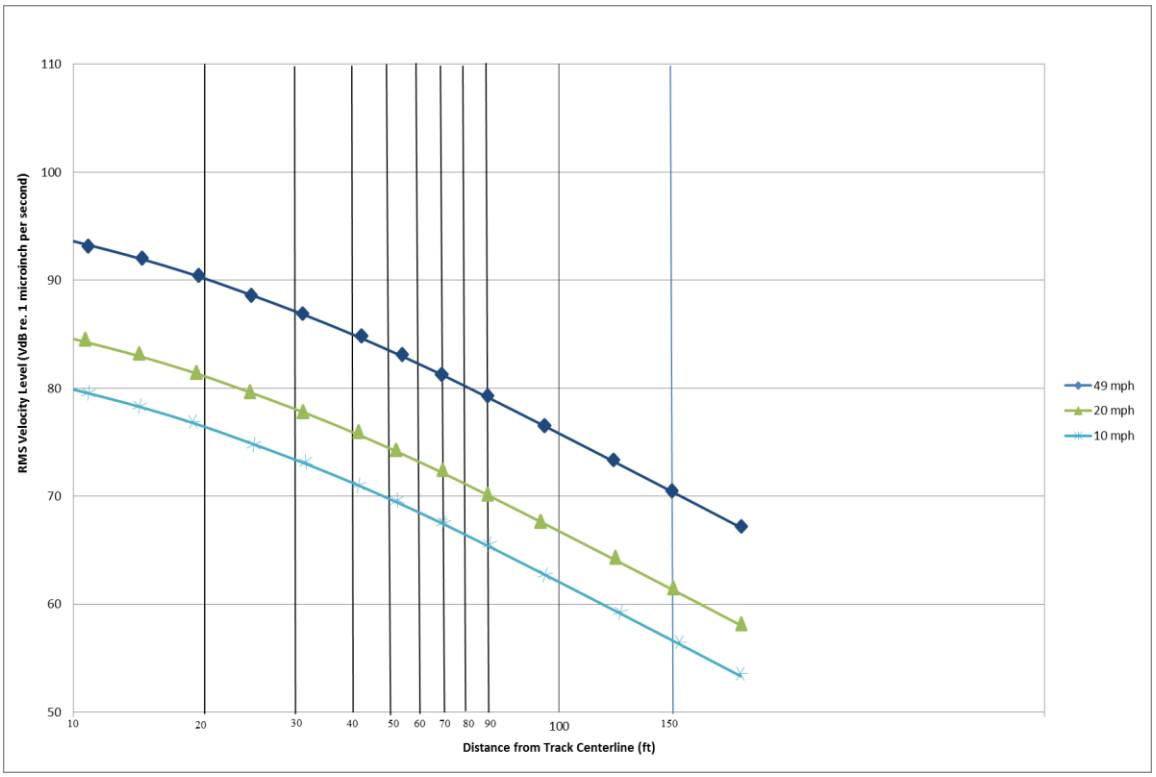


Figure 3. Ground-Borne Vibration Curves (adjusted)

Table 9. Existing Ground-Borne Vibration (GBV) Impact Contour Distances and Number of Receptors

Train Speed (mph)	10	20	49
Impact Distances (feet)	30	50	125
Number of Receptors	0	0	60

Note: 75 VdB was used as the GBN impact level based on the current infrequent use of the track.
mph = miles per hour

Table 10. Existing Ground-Borne Noise (GBN) Impact Contour Distances and Number of Receptors

Train Speed (mph)	10	20	49
Impact Distances (feet)	20	<20	20
Number of Receptors	0	0	0

Note: 40 VdB was used as the GBN impact level based on the current infrequent use of the track.

Table 11. No-Action Alternative Ground-Borne Vibration (GBV) Impact Contour Distances and Number of Receptors

Train Speed (mph)	10	20	49
Impact Distances (feet)	45	80	153
Number of Receptors	10	0	112

Note: 72 VdB was used as the GBN impact level to account for the increased frequency and the nighttime use of the track.
mph = miles per hour

Table 12. No-Action Alternative Ground-Borne Noise (GBN) Impact Contour Distances and Number of Receptors

Train Speed (mph)	10	20	49
Impact Distances (feet)	<20	<20	40
Number of Receptors	0	0	0

Note: 35 dBA was used as the GBN impact level to account for the increased frequency and the night use of the track.
mph = miles per hour

2.5.2 Proposed Project Alternative

Under the Proposed Project Alternative, the Port would generate up to 23 trains per day from the Port to the Gulfport Rail yard, nine more than the No-Action Alternative. Fourteen trains per day (five more than the No-Actin Alternative) would be anticipated from the rail yard to the KCS railway northern terminus. Because this alternative represents less than a doubling of train traffic compared to the No-Action Alternative, the GBN and GBV impacts that are described in Section 2.5.1 for the No-Action Alternative would be applicable to the Proposed Project Alternative.

2.5.3 Summary of Ground- Borne Vibration and Noise Potential Impacts

The project team performed a General Vibration Assessment to determine potential GBV and GBN impacts that would be associated with implementation of the No-Action Alternative or the Proposed Project Alternative. Impacts would be similar for the No-Action Alternative and the Proposed Project Alternative. Table 13 provides a comparison between the existing conditions and the No-Action and Proposed Project Alternative for Land Use Category 2 receptors. No Land Use Category 1 receptors were identified within 0.5 miles of the KCS railway, and the number of Land Use Category 3 receptors (campgrounds) located within the GBV impact contours would remain at two regardless of the alternative selected. As the table shows, the number of impacted Land Use Category 2 receptors would approximately double, from 60 to 122 compared to existing conditions for the No-Action and Proposed Project Alternatives. Of the additional receptors that would be impacted, all but 10 would be located in the rural areas, where the train speeds can reach 49 mph.

No receptors currently fall within the GBN impact contours, and none would be impacted under either the No-Action or Proposed Project Alternatives.

Table 13. Summary of Ground- Borne Vibration Impacts

Scenario	Impacted Category 2 Receptors	Change From Existing Conditions	Percentage Change in Impacted Receptors	Number of Impacted Receptors per Mile
Existing Conditions	60	NA	NA	0.85
No-Action Alternative and Proposed Project Alternative	122	+62	+103%	1.74

2.6 Ground-Borne Vibration Mitigation

The proposed increase in rail traffic would occur in an existing corridor, so relocating tracks or creating buffer zones are not viable mitigation options. Regular maintenance could be used as a mitigation measure against the effects of vibration. Maintenance may include regularly scheduled rail grinding, wheel truing programs, use of wheel-flat detectors and general reconditioning programs.

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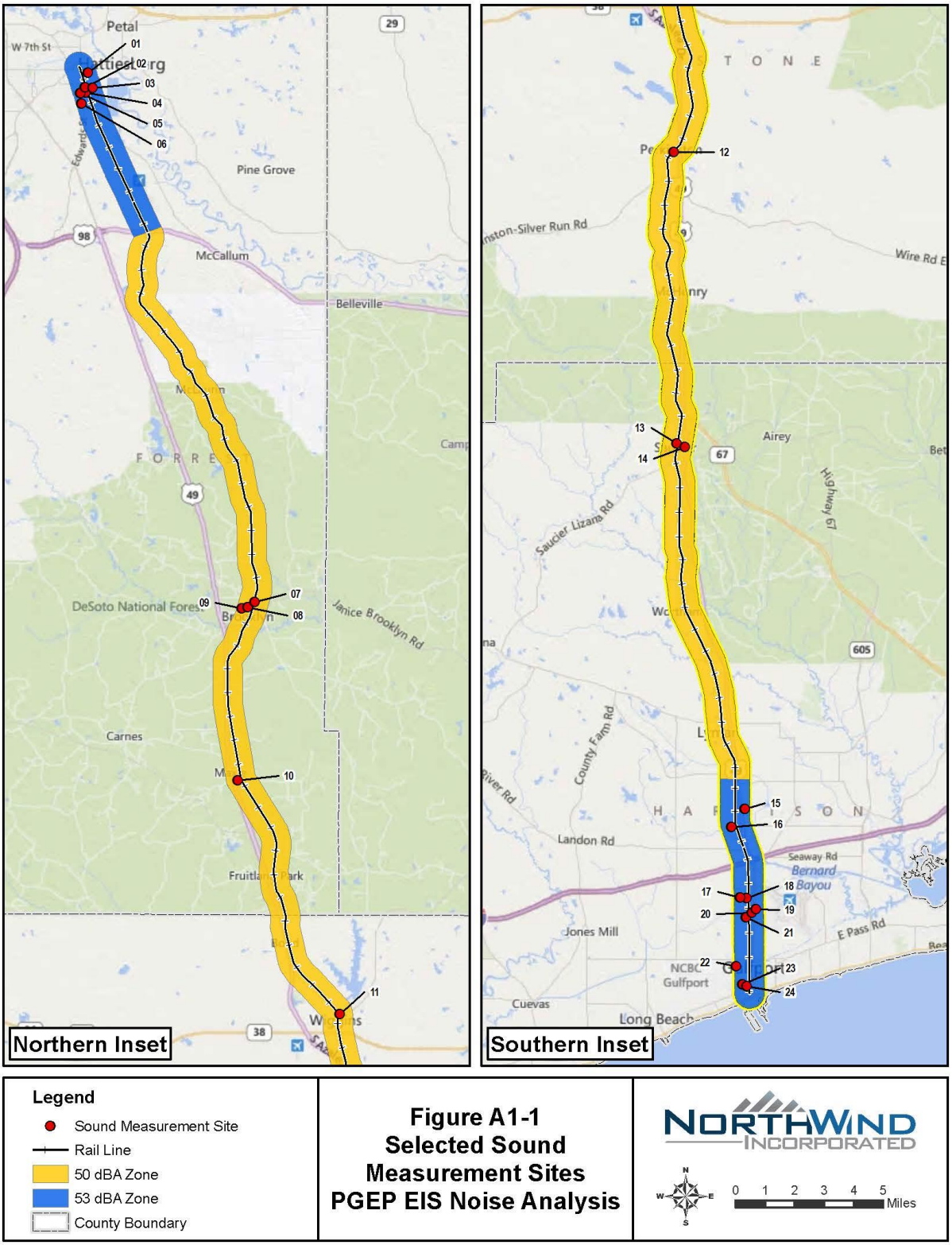
APPENDIX A

Sound Monitoring Receptor Data And Location Map

Table A1-1. Monitored Receptor Sites.

SAMPLE NAME	SAMPLE ID	TIME START	TIME END	LEQ (dBA)	CALCULATED LDN (dBA) (LEQ-2db)
1	07-SO20-03062014-195158(50002)	10:18:00 AM (cst)	10:19:00 AM (cst)	48.8	46.8
2	06-SO19-03062014-195158(50002)	09:11:00 AM (cst)	10:11:00 AM (cst)	67.3	65.3
3	08-SO24-03062014-195159(50002)	11:28:00 AM (cst)	12:28:00 PM (cst)	55.3	53.3
4	06-SO11-03062014-191601(60004)	09:19:43 AM (cst)	10:20:15 AM (cst)	52.6	50.6
5	07-SO12-03062014-191601(60004)	10:33:12 AM (cst)	10:34:04 AM (cst)	51.6	49.6
6	08-SO13-03062014-191602(60004)	11:40:14 AM (cst)	12:40:36 AM (cst)	56.0	54
7	09-SO25-03062014-195200(50002)	15:00:00 PM (cst)	16:00:00 PM (cst)	45.3	43.3
8	10-SO16-03062014-191602(60004)	15:40:56 PM (cst)	16:40:56 PM (cst)	58.6	56.6
9	09-SO15-03062014-191602(60004)	14:28:56 PM (cst)	15:28:56 PM (cst)	51.0	49
10	10-SO26-03062014-205854(50002)	16:14:00 PM (cst)	17:14:00 PM (cst)	45.4	43.4
11	01-SO04-02062014-205855(50002)	08:23:00 AM (cst)	09:23:00 AM (cst)	52.9	50.9
12	03-SO06-02062014-205855(50002)	11:45:00 AM (cst)	12:45:00 PM (cst)	56.2	54.2
13	04-SO07-02062014-205855(50002)	14:29:00 PM (cst)	15:29:00 PM (cst)	51.7	49.7
14	05-SO08-02062014-205855(50002)	16:19:00 PM (cst)	17:19:00 PM (cst)	55.8	53.8
15	11-SO17-04062014-205443(60004)	07:38:55 AM (cst)	08:38:55 AM (cst)	51.9	49.9
16	12-SO18-04062014-205443(60004)	08:51:04 AM (cst)	09:51:04 AM (cst)	60.4	58.4
17	15-SO21-04062014-205444(60004)	13:38:00 PM (cst)	14:38:00 PM (cst)	50.2	48.2
18	13-SO19-04062014-205444(60004)	10:09:35 AM (cst)	11:09:35 AM (cst)	50.5	48.5
19	15-SO31-04062014-205855(50002)	13:38:00 PM (cst)	14:38:00 PM (cst)	61.0	59
20	14-SO30-04062014-205855(50002)	12:29:00 PM (cst)	13:29:00 PM (cst)	59.6	57.6
21	14-SO20-04062014-205444(60004)	12:25:00 PM (cst)	13:25:00 PM (cst)	58.1	56.1
22	11-SO27-04062014-205854(50002)	07:30:00 AM (cst)	08:30:00 AM (cst)	54.9	52.9
23	12-SO28-04062014-205854(50002)	08:39:00 AM (cst)	09:39:00 AM (cst)	54.9	52.9
24	13-SO29-04062014-205855(50002)	10:09:00 AM (cst)	11:09:00 AM (cst)	54.6	52.6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Belleville
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Carnes
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County Farm Rd
Landon Rd
Seaway Rd
Bernard Bayou
Jones Mill
E Pass Rd
NCBC Gulfport
Cuevas
Long Beach
Wire Rd
Highway 67
Southern Inset
Legend
Sound Measurement Site
Rail Line
50 dBA Zone
53 dBA Zone
County Boundary
Figure A1-1
Selected Sound
Measurement Sites
PGEP EIS Noise Analysis
NORTHWIND INCORPORATED
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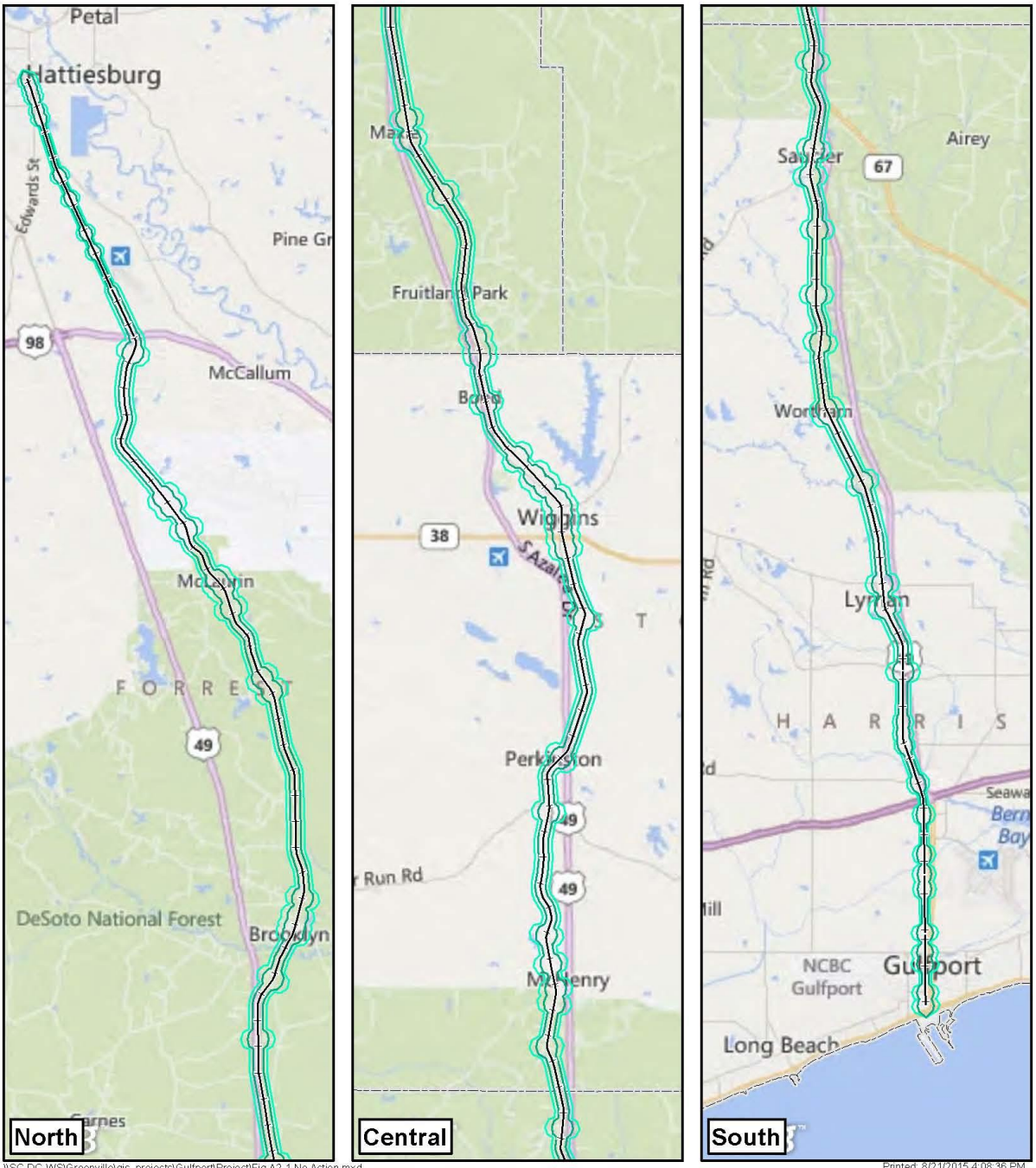
Miles

APPENDIX B

NOISE IMPACT CONTOUR MAPS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Edwards St
Pine Gr
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McCallum
McLaurin
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DeSoto National Forest
Brooklyn
Carnes
North
Fruitland Park
Boles
Wiggins
38
Perkinston
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Run Rd
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Mt Henry
Central
Airey
67
Wortham
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Long Beach
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Legend
Rail Line
Severe Impact Contour
Moderate Impact Contour
County Boundary
Figure A2-1
Noise Impact Contours
No Action Alternative
PGEP EIS Rail Noise Analysis
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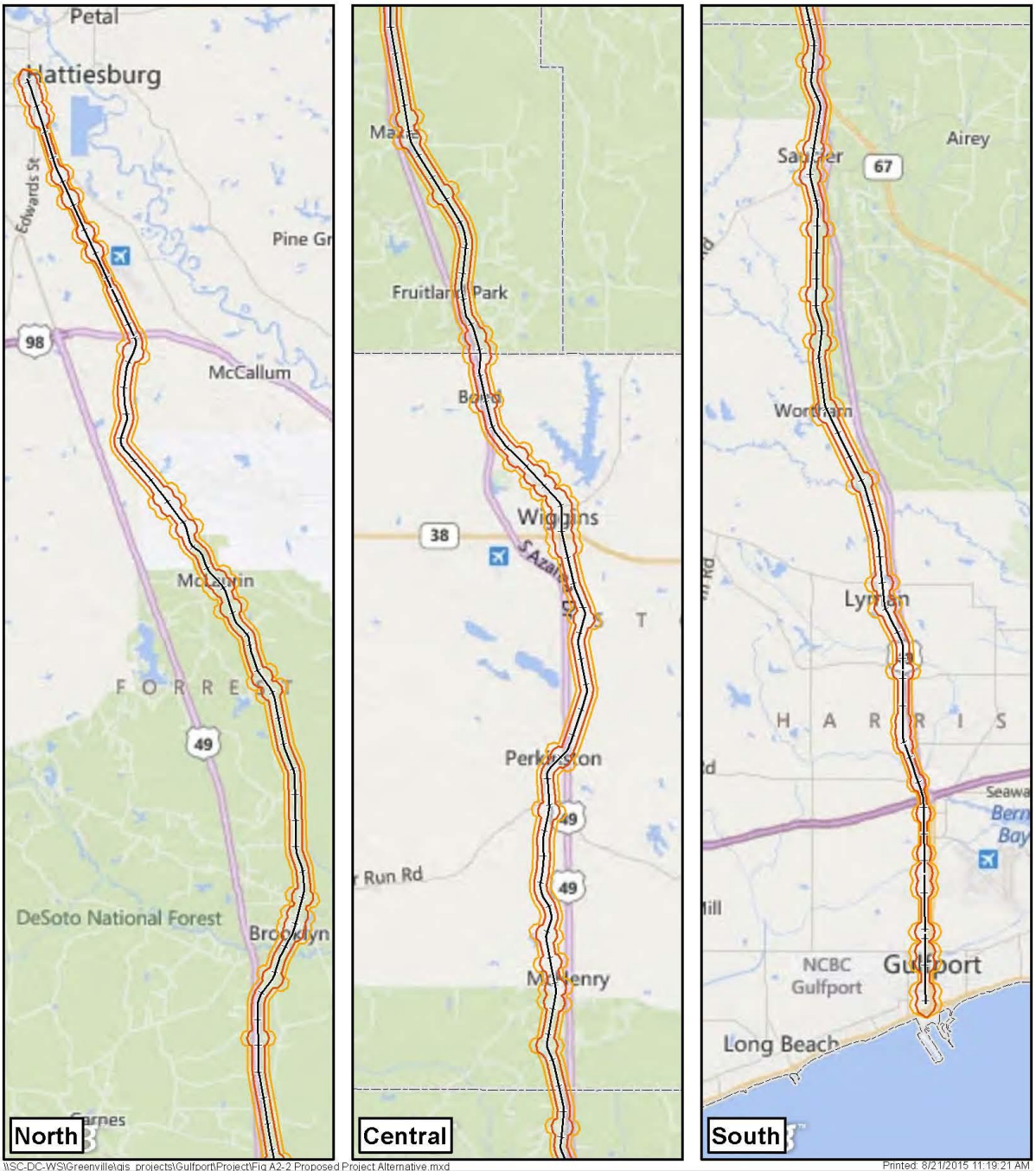
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Fruitland Park
Boyd
Wiggins
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Perkinston
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49
Run Rd
McHenry
Central
Airey
67
Wortham
Lyman
HARRIS
Seawa
Bay
NCBC
Gulfport
Gulfport
Long Beach
South
\\SC-DC-WS\Greenville\gis_projects\Gulfport\Project\Fig A2-2 Proposed Project Alternative.mxd
Printed: 8/21/2015 11:19:21 AM
Legend
Rail Line
Severe Impact Contour
Moderate Impact Contour
County Boundary
Figure A2-2
Noise Impact Contours
Proposed Project Alternative
PGEP EIS Rail Noise Analysis
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