

DRAFT
ENVIRONMENTAL ASSESSMENT



National Oceanic and Atmospheric Administration
Office of Marine and Aviation Operations

**OMAO Lease Acquisition for Uncrewed Maritime Systems
Headquarters and Pier Space in Gulfport, Mississippi**

December 2022

Designation: Draft Environmental Assessment

Title of Proposed Action: OMAO Lease Acquisition for Uncrewed Maritime Systems Headquarters and Pier Space in Gulfport, Mississippi

Project Location: Port of Gulfport, Mississippi

Lead Agency for the EA: National Oceanic and Atmospheric Administration

Action Proponent: National Oceanic and Atmospheric Administration

Research Vessels: *NOAA Atlantic Fleet Research Vessels*

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Executive Summary

The National Oceanic and Atmospheric Administration (NOAA) Office of Marine and Aviation Operations (OMAO) is responsible for managing and operating NOAA's fleet of ships and aircraft. The overall purpose of the Project is to establish a headquarters location for the Uncrewed Marine Systems (UMS) Program that is co-located with storage, pier, and office space in the Gulfport, Mississippi area to meet growing mission needs, including those set forth in the Commercial Engagement through Ocean Technology Act of 2018 (CENOTE, P.L. 115-394, 2018). This will facilitate the increased use of UMS in every NOAA mission area and therefore improve the quality and timeliness of NOAA science, products, and services, consistent with the CENOTE Act. To accomplish this, NOAA proposes to lease existing office, storage, and pier space in Gulfport, Mississippi to (1) support the establishment of a headquarters for NOAA's new (UMS) program and (2) expand the dedicated pier space available for NOAA's Atlantic fleet research vessels' increasing number of missions.

Proposed Action

Under the Proposed Action, NOAA would lease office, storage, and pier space at the Ocean Enterprise Facility (OEF) (**Figure ES-1**) owned by the Port of Gulfport and leased by the University of Southern Mississippi (USM), to headquarter NOAA's newly established UMS program and expand the dedicated pier space available to NOAA's Atlantic fleet research vessels and their growing fleet and number of missions. The Proposed Action is consistent with the CENOTE Act of 2018, NOAA's Uncrewed Systems Strategy (2020), the NOAA – USCG Fleet Plan (2016), and NOAA's Cooperative Maritime Strategy (2013). The Proposed Action includes lease of:

- dedicated space for two research vessels along 575 linear feet (lf) of the larger east pier;
- dedicated space for six smaller boats, ranging from small ship support boats to the 46-foot Bertram in the west small craft harbor;
- storage space for ship and boat support (approximately 6,800 square feet (sf));
- administrative space (approximately 6,600 sf);
- laboratory and associated space (approximately 5,000 sf);
- parking spaces (68),

and modifications to:

- expand utilities to both piers in support of vessel operations;
- add security fencing along both piers, and
- install a security gate at the small pier.

The Project area includes the OEF building and vicinity, and access corridors to both piers at the Port of Gulfport (Figure ES-1). The OEF building will be completed prior to and regardless of NOAA's lease at the OEF. Therefore, the environmental impacts of the OEF project are not evaluated in this EA. NOAA OMAO requires some interior and exterior modifications prior to moving into the facility, the impacts of which are analyzed in this Environmental Assessment (EA). These modifications include interior modifications, expansion of water, fire, sewer, and electric utilities along both piers, addition of a security gate to the smaller pier, and addition of security fencing along the large pier. Modifications are estimated to require approximately six months to complete. The entire Project area is within the FEMA-designated 100-year floodplain and coastal high hazard area (VE Zone), and the OEF was constructed with the first floor above the Base and Flood Elevation (BFE). In addition, the OEF building has specialized hurricane resiliency features. This lease will provide additional pier space for the NOAA Atlantic fleet vessels in support of increased numbers of missions and two additional vessels anticipated

to be online in 2025 and 2026. Homeport, transient berthing, and other related capabilities will be maintained at the GMSF in Pascagoula, Mississippi.

The Proposed Action is the Preferred Alternative. The Proposed Action and a No Action Alternative are being evaluated by NOAA per Section 102 of the NEPA under 42 U.S. Code (U.S.C.) Section 4332, Council on Environmental Quality (CEQ) Regulations for Implementing Procedural Provisions of NEPA at 40 Code of Federal Regulations (CFR) 1500-1508, and NOAA Administrative Order Series 216-6A, and the NOAA Companion Manual, Policy and Procedures for Compliance with the National Environmental Policy Act and Related Authorities (NOAA 2017). This EA was prepared to evaluate the potential consequences of the Proposed Action, the lease of existing facilities and modifications required to meet NOAA's mission. The EA does not evaluate impacts of the existing facilities. Modifications do not include in-water activities and include only minor ground-disturbing activities associated with security fence installation. Potential environmental effects to resource areas and topics analyzed are summarized in Table ES-1.

Purpose and Need for the Proposed Action

The overall purpose of the Project is to establish NOAA's new UMS headquarters and to facilitate NOAA's uninterrupted operational Atlantic fleet capabilities. To accomplish this, OMAO needs additional office, storage, and pier space in the Gulfport, Mississippi area. The 2018 CENOTE Act directs OMAO to expand research, assessment, and acquisition of UMS and partner with universities, private sector, and the U.S. Navy. It further narrowed the potential geographic location of the UMS program headquarters to areas where NOAA has established cooperative activities with institutions such as Cooperative Institutes and Sea Grant Colleges. USM is a NOAA-designated Cooperative Institute and a Sea Grant College, with an established Uncrewed Systems Certification Program. The CENOTE Act also encourages NOAA to "seek to utilize Naval unmanned systems test or training ranges, such as the Gulf of Mexico Unmanned Systems Test and Training Range of the Naval Meteorology and Oceanography Command (NMOPDC)," now the Naval Information Warfare Training Group Gulfport (IWTG Gulfport). Consequently, the Mississippi Gulf coast was identified as the most suitable geographic area for the UMS headquarters.

The UMS and NOAA's Atlantic fleet both collect high quality data essential for protecting lives and property, facilitating stewardship of ecosystem resources, and conducting applied research on ocean and atmospheric processes. NOAA's research vessels support hydrographic survey and in-situ scientific data collections in marine, coastal, and freshwater environments. Research vessel missions vary from year to year and support to vessels during missions is imperative. In addition, two new vessels (*Oceanographer* and *Discoverer*) are anticipated to expecting to join OMAO's Atlantic fleet in 2025 and 2026. The Proposed Action supports operations of NOAA's Atlantic fleet research vessels and the increasing numbers of vessel missions as well as the new UMS operations.

Alternatives Considered

NEPA's implementing regulations provide guidance on the consideration of alternatives to a federally Proposed Action and require rigorous exploration and objective evaluation of reasonable alternatives. Only those alternatives determined to be reasonable and that meet the purpose and need for the Proposed Action require detailed analysis.

Alternatives were developed and evaluated with respect to the Project Purpose and Need, technical feasibility regarding operational requirements for achieving NOAA missions, and consistency with

federal statutes and regulations. These included physical setting and availability of the site, navigation and pier structure requirements, and landside facility and services requirements. General criteria for evaluation included:

- Direct port access with no limitations (e.g., no docks, drawbridges, etc.)
- Adequate office, laboratory, storage space (approximately 18,400 sf), and related utilities, telecommunications, and security to support NOAA's UMS program headquarters.
- Dedicated pier space for up to two NOAA research vessels, including 575 lf of berth space, pier width at least 40 feet and 500 pounds per square foot load capacity, pier height 10-15 feet above MLLW for storm surge protection, and a minimum channel depth of -23 feet MLLW

NOAA published a Request for Lease Proposals (RLP 21EKA0028C) for lease space in the Gulfport, Mississippi area based on mission needs and requirements under the CENOTE Act. In addition to the No Action and Proposed Action, an additional proposal received in response to RLP was evaluated as an Action Alternative. The Action Alternative included a potential waterfront location on Bayou Bernard, approximately three miles southeast (downstream) of Interstate 10 (I-10) and several miles upstream of the Gulf of Mexico. This Action Alternative was evaluated and was subsequently found to be deficient to mission needs with respect to channel width and depth, as well as port access.

Consequently, NOAA is considering two alternatives: the Proposed Action and the No Action Alternative. Under the No Action Alternative, NOAA would not lease space at the OEF and NOAA's UMS program would not be established near designated universities, private sector, and/or US Navy partners, nor near dedicated pier space used by NOAA's vessels. Additional dedicated pier space for NOAA's Atlantic fleet research vessels would also not be available to NOAA in the Gulfport area. No capital investments to enhance capabilities or meet gaps in operating requirements would be made at the OEF in support of these activities. Future opportunities to expand NOAA's UMS program through NOAA's partnership with USM would be reduced.

Analysis of Environmental Consequences of the No Action Alternative and the Proposed Action

This EA analyzes the potential environmental consequences of implementing the Proposed Action and No Action Alternative. Factors that may be relevant to the Proposed Action are listed in Table ES-1. Cumulative impacts of this Project with other past, present, and reasonably foreseeable actions in the Project area were also assessed. Potential impacts to resource areas analyzed are summarized in Table ES-1. No significant effects to the resources analyzed in this EA would result from the Proposed Action. No adverse impacts were identified in relation to any resource topic for the No Action Alternative. Under the No Action Alternative, the lease would not be established between NOAA and USM, and the facilities and office, storage, and pier space would be available for lease by others.



Figure ES-1. Location of Ocean Enterprise Facility (OEF) at the Port of Gulfport, Mississippi.

Table ES-1. Summary of Potential Direct Impacts.

Resource	No Action Alternative	Proposed Action
Air quality	No effect	No significant impacts. Air emissions during very minor construction activities are below applicable de minimis criteria. The addition of two vessels and six small vessels will add a negligible impact to the air quality of this existing industrial area.
Noise	No effect	No significant impacts. Temporary increase of noise will occur during the minor construction activities. Temporary underwater noise from the slight increase in potential vessel traffic in the area.
Geologic resources and soils	No effect	No effect. There are no groundbreaking activities associated with the proposed action.
Hazardous materials	No effect	No significant impacts. Temporary increase in hazardous materials and wastes during the minor construction activities. Potential minor long-term increases in hazardous materials and wastes during vessel operations or potential for a spill of hazardous materials.
Surface water and ground water	No effect	No significant impacts.
Wetlands and other waters of the U.S.	No effect	No significant impacts. No wetlands will be impacted during construction or during vessel operations.
Floodplains and other Executive Orders	No effect	No significant impacts. The facilities, including the dock, are within the FEMA 100- year floodplain; however, the buildings will be constructed at an elevation that is above the 100-year floodplain. The utilities will be installed on the permanent dock. The FEMA 8 step decision-making process will be adhered to.
Aquatic resources, fish, and Essential Fish Habitat	No effect	No significant impacts. No construction activities will occur in the water. Temporary impacts to aquatic resources could include increased turbidity from vessel traffic and an increased risk of hazardous materials spills. Minor temporary impacts to fish and EFH could result from the small increase in potential vessel traffic.
Endangered and threatened resources	No effect	Negligible. No habitat loss will occur as a result of the proposed action. All construction will occur on land and not in the water. The small increase in potential vessel traffic could temporarily impact marine mammals, reptiles, birds, and other protected species.
Land use and recreation	No effect	No effect. The land use will not be changed as it is already industrial.
Utilities	No effect	No effect.
Navigation	No effect.	No effect. Vessel traffic and number of trips less than projected.
Transportation	No effect	Negligible. A small increase in vehicle traffic will occur as a result of the proposed action. The area has the capacity to facilitate the additional vehicles that come with staff that will be working on NOAA activities.
Socioeconomics and environmental justice	No effect	Negligible. Short, temporary increase in socioeconomic opportunity during the construction activities. The number of staff that will be working at the facility is fewer than 12.
Visual resources	No effect	Negligible. The additional vessels will add to the current vessels in the area.
Cultural & historic resources	No effect	No effect. No adverse impacts on archeological and historical resources.

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List of Acronyms and Abbreviations

AOC	Aircraft Operations Center
ATON	Aids to Navigation
BA	Biological Assessment
BFE	base flood elevation
BGEPA	Bald and Golden Eagle Protection Act
BMPs	best management practices
BO	Biological Opinion
CAA	Clean Air Act]
CEJST	Climate and Economic Justice Screening Tool
CEQ	Council on Environmental Quality
CEPA	Coastal Electric Power Association
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DA	Department of the Army
dB	decibels
dBA	A-weighted decibels
DO	dissolved oxygen
MDOT	Mississippi Department of Transportation
EA	Environmental Assessment
EFH	essential fish habitat
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
GCR	General Conformity Rule
GHG	greenhouse gas

HAPs	hazardous air pollutants
HCUA	Harrison County Utility Authority
IHA	Incidental Harassment Authorization
IWTG	Information Warfare Training Group
m	meter
MASGC	Mississippi-Alabama Sea Grant Consortium
MBTA	Migratory Bird Treaty Act
MDAH	Mississippi Department of Archives and History
MDMR	Mississippi Department of Marine Resources
MDWFP	Mississippi Department of Wildlife, Fisheries, and Parks
MHW	mean high water
MLW	mean low water
MLLW	mean lowest low water
MMPA	Marine Mammal Protection Act
MNHP	Mississippi Natural Heritage Program
MOC-A	Marine Operations Center-Atlantic
MOC-P	Marine Operations Center-Pacific
MSPA	Mississippi State Port Authority
mph	miles per hour
MsCIP	Mississippi Coastal Improvements Program
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
NAAQS	National Ambient Air Quality Standards
NAVD88	North American Vertical Datum of 1988
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards of Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service, also referred to as NOAA
NMOPDC	Naval Meteorology and Oceanography Command
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO _x	nitrogen oxides

NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
NPS	National Park Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O ₃	ozone
OEF	Ocean Enterprise Facility
OMAO	Office of Marine and Aviation Operations
OSHA	Occupational Safety and Health Administration
Pb	lead
ppb	parts per billion
ppm	parts per million
PGEP	Port of Gulfport Expansion Project
ppb	parts per billion
RCRA	Resource Conservation and Recovery Act
RHA	Rivers and Harbors Act
ROD	Record of Decision
RPGs	reasonable progress goals
SAV	submerged aquatic vegetation
sf	square feet
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SWPPP	Stormwater Pollution Prevention Plan
TNC	The Nature Conservancy
U.S.	United States
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish and Wildlife Service
USM	University of Southern Mississippi
WOUS	Waters of the U.S.

1.0 Purpose and Need

1.1 Overview

The primary missions of the National Oceanic and Atmospheric Administration (NOAA) include charting and hydrographic surveying; assessment of living marine resources; oceanographic monitoring, research, and modeling; and emergency response. NOAA's Office of Marine and Aviation Operations (OMAO) supports NOAA's primary missions by operating, managing, and maintaining NOAA's fleet of vessels, vessel equipment, and instruments, and NOAA's Uncrewed Systems Operation Program. OMAO maintains these vessels, equipment, and systems at mission-readiness levels, facilitating all of NOAA's at-sea and data collection requirements. Consistent with this mission, OMAO manages and operates NOAA's fleet of 16 oceanographic research and fishery survey ships, and 10 mission-ready aircraft and professional crews to support the scientific community. NOAA also operates uncrewed maritime systems (UMS) used to observe marine life, seabirds, and their habitat via its Aircraft Operations Center (AOC), which operates, manages, and maintains NOAA's fleet of crewed aircraft and UMS from the Lakeland Linder Regional Airport in Lakeland, Florida, and provides capable, mission-ready aircraft and professional crews to the scientific community. The UMS Division also coordinates airspace approvals for operations within the U.S. National Airspace System, special use airspace, and foreign airspace.

OMAO's research and survey ships comprise the largest fleet of federal research ships in the nation. Ranging from large oceanographic research vessels capable of exploring the world's deepest ocean to smaller ships responsible for charting the shallow bays and inlets of the United States, the fleet supports a wide range of marine activities including fisheries research, nautical charting, and ocean and climate studies. Administrative, engineering, maintenance, and logistical support for the NOAA fleet are based out of either the Marine Operations Center-Atlantic (MOC-A), the Marine Operations Center-Pacific (MOC-P), or the Marine Operations Center-Pacific Islands (MOC-PI). The MOC-A is in Norfolk, Virginia, and the MOC-P is in Newport, Oregon. NOAA ships are typically berthed at locations closer to their dedicated or primary mission support areas for efficiency and continuance of operation. Each year, NOAA ships conduct more than 100 missions to collect data critical for nautical charts, fishery quotas, exploration of the nation's 4.3-million-square-mile Exclusive Economic Zone, storm surge modeling, and climate research. The NOAA MOC-A serves as a homeport for one NOAA survey ship and provides administrative, engineering, maintenance, and logistical support to NOAA's Atlantic fleet, made up of nine ships.

In February 2021, NOAA and the University of Southern Mississippi (USM) signed a 10-year agreement to partner on ways to improve how UMS are used to collect important ocean observation data and augment NOAA's operational capabilities. UMS are sensor-equipped vehicles that operate autonomously or are remotely piloted. NOAA currently uses UMS for seafloor and habitat mapping, ocean exploration, marine mammal and fishery stock assessments, emergency response, and at-sea observations that improve forecasting of extreme events, such as hurricanes, harmful algal blooms and hypoxia. The agreement helps NOAA meet the objectives of the Commercial Engagement Through Ocean Technology (CENOTE) Act of 2018, which requires the agency to coordinate research, assess, and acquire uncrewed systems with the U.S. Navy, other federal agencies, industry, and academia. The agreement also provides a framework for collaboration among NOAA scientists and UMS operators on projects to further UMS research, development, and operations.

NOAA proposes to establish a long-term lease with the USM at the Port of Gulfport in Gulfport, Mississippi (Figure 1-1), to maximize NOAA OMAO mission effectiveness by leasing space to support NOAA’s newly established UMS program headquarters and expanding the pier space available to NOAA’s Atlantic fleet research vessels. NOAA proposes to lease adequate pier, landside, support space, and facilities to expand the UMS program and provide additional year-round support for up to two NOAA Atlantic fleet vessels at the newly constructed Ocean Enterprise Facility (OEF) under lease by USM at the Port of Gulfport.

This Environmental Assessment (EA) provides an analysis of potential environmental impacts associated with the Proposed Action and the No Action Alternative for expanding NOAA’s UMS program and increasing the amount of available dedicated space to support Atlantic fleet missions. The environmental resource areas analyzed in this EA include land use, geological resources, hydrological processes, air quality, water resources, cultural resources, flora and fauna, wetlands, floodplains, coastal zone management, noise, transportation, utilities and solid waste, visual impacts, and hazardous materials. The study area for each resource analyzed may differ due to how the Proposed Action interacts with or impacts the resource. For instance, the study area for geological resources may only include the construction footprint of a building while the noise study area would expand beyond the construction footprint to include areas that may be impacted by construction noise.

Additional information related to the Proposed Action is presented in this EA and is sufficient in scope to address federal, state, and local requirements with respect to the proposed Project activities and permit approvals, and to address requirements of NEPA.



Figure 1-1. Location of Ocean Enterprise Facility (OEF) at the Port of Gulfport, Mississippi.

1.2 Purpose

The overall purpose of the Project is to establish a headquarters location for the Uncrewed Marine Systems (UMS) Program that is co-located with storage, pier, and office space in the Gulfport, Mississippi area to meet growing mission needs, including those set forth in the Commercial Engagement through Ocean Technology Act of 2018 (CENOTE, P.L. 115-394, 2018). This will facilitate the increased use of UMS in every NOAA mission area and therefore improve the quality and timeliness of NOAA science, products, and services, consistent with the CENOTE Act. To accomplish this, NOAA proposes to lease office, storage, and pier space in the Gulfport, Mississippi area to (1) support the establishment of NOAA's new (UMS) program and (2) expand the dedicated pier space available to NOAA's Atlantic fleet research vessels' increasing number of missions.

1.3 Need

The overall need for the Project is to facilitate the increased use of UMS in every NOAA mission area and therefore improve the quality and timeliness of NOAA science, products, and services, consistent with the CENOTE Act. The 2018 CENOTE Act also directs OMAO to expand research, assessment, and acquisition of UMS and partner with universities, private sector, and the U.S. Navy. It further narrows the potential location of the UMS program headquarters to areas where NOAA has established cooperative activities with institutions such as Cooperative Institutes and Sea Grant Colleges. The USM is a NOAA-designated Cooperative Institute and a Sea Grant College, with an established Uncrewed Systems Certification Program. The CENOTE Act encourages NOAA to "seek to utilize Naval unmanned systems test or training ranges, such as the Gulf of Mexico Unmanned Systems Test and Training Range of the Naval Meteorology and Oceanography Command (NMOPDC)," now the Naval Information Warfare Training Group Gulfport (IWTG Gulfport). Consequently, the Mississippi Gulf coast was identified as the most suitable geographic area for the UMS headquarters.

The UMS and NOAA's Atlantic fleet both collect high quality data essential for protecting lives and property, facilitating stewardship of ecosystem resources, and conducting applied research on ocean and atmospheric processes. NOAA's research vessels support hydrographic survey and in-situ scientific data collections in marine, coastal, and freshwater environments. Research vessel missions vary from year to year and support to vessels during missions is imperative. In addition, two new vessels (*Oceanographer* and *Discoverer*) are anticipated to expecting to join the Atlantic fleet in 2025 and 2026. The Proposed Action supports operations of NOAA's Atlantic fleet research vessels and the increasing numbers of vessel missions as well as the new UMS operations.

1.4 Project Alternatives

NEPA's implementing regulations provide guidance on the consideration of alternatives to a federally Proposed Action and require rigorous exploration and objective evaluation of reasonable alternatives. Only those alternatives determined to be reasonable and that meet the purpose and need for the Proposed Action require detailed analysis.

The 2018 CENOTE Act directs OMAO to expand research, assessment, and acquisition of UMS and partner with universities, private sector, and the U.S. Navy. Geographically, the CENOTE Act narrowed the potential geographic location of the UMS program headquarters to areas where NOAA has established cooperative activities with institutions such as Cooperative Institutes and Sea Grant

Colleges. The USM is a NOAA-designated Cooperative Institute and a Sea Grant College, with an established Uncrewed Systems Certification Program. The CENOTE Act encourages NOAA to “seek to utilize Naval unmanned systems test or training ranges, such as the Gulf of Mexico Unmanned Systems Test and Training Range of the Naval Meteorology and Oceanography Command (NMOPDC),” now the Naval Information Warfare Training Group Gulfport (IWTG Gulfport). The final location of the UMS Program was selected based on proximity to the USM and Naval IWTG Gulfport locations, which support NOAA’s mission and are consistent with the CENOTE Act as described below.

- The USM is one of 16 NOAA-designated Cooperative Institutes across the Nation and the only one on the Gulf of Mexico. USM is also a member of the Mississippi-Alabama Sea Grant Consortium (MASGC), a federal/state partnership that matches NOAA Sea Grant expertise and resources with state academic institutions. Both the Northern Gulf Institute Collaboration Institute (a NOAA Collaborative Institute) and the MASGC predate the CENOTE legislation, but the partnerships form the basis of ongoing collaboration in and around the Gulfport area. USM has an established Uncrewed Systems Certification Program, providing an effective means of cooperative support for NOAA’s UMS Program.
- NOAA has partnered with the Navy to jointly expand the development and operations of UMS in the U.S. and across the globe, enabling NOAA to leverage Naval expertise, infrastructure, best practices, and training to accelerate its science, service, and stewardship mission. The IWTG trains officers in meteorology and oceanography and recently partnered with the Port of Gulfport to host their first uncrewed systems operational demonstration.

Project alternatives were subsequently developed and evaluated with respect to the Purpose and Need, technical feasibility of operational requirements for achieving NOAA missions, and consistency with federal statutes and regulations. Screening criteria included physical setting and availability of the site, navigation and pier structure requirements, landside facility and services requirements. NOAA’s long term space requirements and availability at the Port are listed in Table 1-1. General criteria included:

- Direct port access with no limitations (e.g., no docks, drawbridges, etc.)
- Adequate office, laboratory, storage space (approximately 18,400 sf), and related utilities, telecommunications, and security to support NOAA’s UMS Program
- Dedicated pier space for up to two NOAA research vessels, including 575 lf of berth space, pier width at least 40 feet and 500 pounds per square foot (psf) load capacity, pier height 10-15 feet above MLLW for storm surge protection, and a minimum channel depth of -23 feet MLLW

NOAA considered three alternatives: the Proposed Action, the No Action Alternative, and an Action Alternative. The Action Alternative, located near Biloxi, MS, and is deficient with respect to required operational specifications including channel depth and width and downstream structures that limit vessel access, e.g., I-10 and Hwy 90 bridges. The Action Alternative was therefore eliminated from further analysis.

Table 1-1. OMAO Gulfport Long Term Space Requirements and Availability under the Proposed Action.

Space Requirements	Status at Lease Signing
<p>Pier space for two vessels, dedicated for NOAA's exclusive use – 575 lf Two Berths and no vessel limitations (e.g., locks, drawbridges) Main Channel Depth = 23' minimum; Main Channel Width = 300' minimum Turning Basin Depth = 23' MLLW minimum; Bert Depth = 23' MLLW minimum Berth Maneuver Width = 3 times beam @ berth depth (150') Pier/Berth Length = 575' (includes spacing) Single sided Pier Width = greater than or equal to 40' to provide 30' clearance Pier Loading = >500 psf ; Pier Height/Storm Surge Protection within 10'-15' > MLLW</p>	<p>Available</p> <ul style="list-style-type: none"> ● Pier already existing ● Utilities - water, fire, sewer, and electric are not available and would be added to meet NOAA mission needs.
<p>Small Boat Pier for six small boats, dedicated for NOAA's exclusive use – 180 lf 46' Bertram; 33' Survey Boat; 22' Utility Boat; 3 Small Boats (Ship Support) Ramp access for 46' Boat and/or 34' launch. dedicated boat slip/ access to floating dock or transient slip) Davit with 1.5 ton capability adjacent to waterfront for deployment of UMS systems Pier capable of withstanding category 5 wind and wave forces</p>	<p>Available</p> <ul style="list-style-type: none"> ● Small boat pier located on west side of shallow water bay constructed already. ● Security gate to be installed after lease signing to meet NOAA mission needs. ● Utilities - water, fire, sewer, electric are not available and would be added to meet NOAA mission needs.
<p>Storage space for Ship Support – 6,000 sf 16' high clearance required at ship storage portion, overhead doors; 12' high for enclosed storage 18'x50'x14' dedicated parking for boat</p>	<p>Not available, to be completed after lease is signed to meet NOAA mission needs.</p>
<p>Laydown / Ware Yard for Ship Support – 0.5 acres Total square feet: 0.5 acre or 21,780 sf with dedicated space for HAZMAT storage locker (approx. 102"x215"x67") and boat washdown; and An automatic gate shall be located at entrance into the lot</p>	<p>Not available. Electrical, network cables to be installed to meet NOAA needs. Security fencing, minor civil work (paving, site work for laydown) to be completed to meet NOAA needs.</p>
<p>Li-PO Battery Storage Building – 200 sf Compliant with UFC 3-520-05, NFPA 70, National Electrical Code (NEC), NFPA 1, Fire Code, NFPA 704, Standard System for the Identification of the Hazards of Materials for Emergency Response, and NAVSEA S9310-AQ-SAF-010 for battery room design requirements.</p>	<p>Not available. Mobile van unit parked in the laydown area to be completed after to meet NOAA mission needs.</p>
<p>Parking – 68 spaces, 21,420 sf - Located exterior to the building Automotive parking for government owned vehicles: 2 F-350 trucks, 1 Suburban, 4 ASVs (6' long) Trailer parking in laydown Space: 18' Utility Box trailer, egress/ingress space to turn tow vehicle</p>	<p>Available</p>
<p>Severe weather storage Offsite storage during severe weather events, outside the floodplain zone; fenced and secured; access to emergency power Onsite storage during severe weather events located within the laydown space, two secure tie downs to support equipment with 30' x 10' dimensions</p>	<p>Not available at lease signing, to be completed after lease is signed to meet NOAA mission needs.</p>

Consequently, NOAA is considering two alternatives: the Proposed Action and the No Action Alternative. Under the No Action Alternative, NOAA would not lease the OEF space: NOAA's UMS program would not be established at or use the facilities at the OEF and additional pier space for NOAA's Atlantic fleet research vessels would not be available at the Port of Gulfport. No capital investments to enhance capabilities or meet gaps in operating requirements would be made at the OEF in support of these activities and opportunities to expand NOAA's UMS program through NOAA's partnership with USM would be reduced. Under the No Action Alternative, NOAA would not lease the space and facilities at the Port of Gulfport and the lease space would be available for lease by others

1.5 Proposed Action (Preferred Alternative)

Under the Proposed Action, NOAA would lease landside, pier, and support facilities at the Center for Ocean Enterprise facility owned by the Port of Gulfport in Gulfport, Mississippi (**Figure 1-1**), and leased by USM, to support NOAA's newly established UMS program and expand the dedicated pier space available to NOAA Atlantic fleet research vessels. The Proposed Action is consistent with NOAA's mission and operational requirements, the CENOTE Act (2018), the NOAA – USCG Fleet Plan (2016), and NOAA's Cooperative Maritime Strategy (2013). No in-water activities are planned and minor ground-disturbing activities would be limited to fence installation. The Proposed Action meets the following requirements:

- Direct port access with no limitations (e.g., no docks, drawbridges, etc.)
- Adequate office, laboratory, storage space (approximately 18,400 sf), and related utilities, telecommunications, and security to support NOAA's UMS Program
- Dedicated pier space for up to two NOAA research vessels, including 575 lf of berth space, pier width at least 40 feet and 500 pounds per square foot (psf) load capacity, pier height 10-15 feet above MLLW for storm surge protection, and a minimum channel depth of -23 feet MLLW

Features included with the Proposed Action include:

- Dedicated space for two research vessels (575 lf) along the larger east pier
- Dedicated space for six smaller boats, ranging from small ship support boats to the 46-foot Bertram in the west small craft harbor
- Storage space for ship and boat support and administrative, including office and related space (6,600 sf), storage and related space (6,800 sf), and laboratory and related space (5,000 sf)
- Parking spaces (68)
- Upgrade utilities to include both piers to support vessel operations
- Addition of security fencing along the pier and installation of a security gate at the small pier
- Capacity to support 11 OMAO employees

The OEF will open in 2024 and will include laboratory, training, and conference space, as well as deep and shallow water access to support research and development partnerships related to UMS and technology innovation and oceanographic research. OMAO staff would work at the OEF. Nearly all the required infrastructure would be in place prior to finalization of the lease. Under the lease arrangement, modifications would be made by the lessor to meet NOAA operating requirements, prior to moving into the facility. These include the installation of: water, fire, sewer, and electric utilities to both piers, a security gate for access to the smaller pier, and security fencing around the 0.5-acre laydown area. Modifications are estimated to require approximately six months to complete. Modifications that would be made are summarized in Table 1-2.

Table 1-2. Services required and to be added by NOAA.

Electrical
Battery Storage - Comply with UFC 3-520-05 design for the LiPo battery requirements
Laydown / Ware-yard
Electrical connections for 4 NOAA Provided Conex boxes: 2-480 VAC 100 amp connections; 1- 125/250 VAC 50 amp and 2-110V 15 amp receptacles HAZMAT building power 120/240V 100A Lighting - Provide illumination in the laydown space: must be integrated with the lightning protection system; poles must support catenary wire and floodlights.
Deep Water Pier Electrical power distribution system would comply with UFC 4-150-02, Dockside Utilities for Ship Service, NFPA 70 and the requirements of the "Electrical Power Distribution System" and the requirements per berth are listed below: At least 4 new electrical power outlet assemblies along waterfront of the pier; new conduits, wiring, controls, and receptacles, as part of the new electrical power outlet assemblies. The electrical power outlet assemblies for each vessel (4/each) must include the following to support each of the two NOAA Vessels. Provide at least 4 new ship power receptacles for 480V volts, 400 Amp, 3-Phase NATO, and at least (3) 110v AC ports for the ship service at each of the berths. Lighting - Provide illumination along the edge of the pier appropriate for marine conditions with photo control and back up emergency power.
Small Boat Pier: Maintain minimal 'marina type' dockside electrical connections: Six 120/208V 30 A receptacles (1/small boat); Six 110V 15 A receptacles (1/small boat) Wharf lighting, power and emergency back-up
Mechanical and Water
Battery Storage Shed - Comply with UFC 3-520-05 design requirements for the LiPo batteries
Laydown / Ware-yard - ¾" Water spigot for boat washdown and proper drainage for boat washdown station that comply with environmental code
Deep Water Pier Potable water - Provide new potable water utility connections (risers) along the waterfront face of the pier. Potable water risers must include outlets for ship service connection and fire protection use. At a minimum the design must include the following requirement per berth: (One for each vessel) Sanitary Sewer - Provide two new sanitary sewer connections (risers) along the waterfront face of the pier. Provide drainable spill containment concrete pad and curbing with drain pipe and valve for the risers. Construct spill containment pad and curb to contain spills and drips occurring during hose disconnection. Drain pipe and valve are for manual removal of rainwater.
Small Boat Pier – potable water
Security – fencing, gates, parking, entry and exits
Secure the site using a 8' high chain link security fence with three stands of barbed wire with two, 20' entry slide gate for pedestrian and vehicle access, to include a card reader and automatic closer, and one 20 foot exit slide gate for pedestrian and vehicle traffic with automatic opening and closing sensors. Security fence: provide one single line fence[s] surrounding the restricted area, entry security, card readers, posted signs, authorized parking, lighting, CCTV surveillance. Provide security clear zones as required. Provide outriggers and three strands of barbed wire, bollards at entrances and exits, and power back-up

The OEF is being constructed by the Port of Gulfport and the USM, regardless of NOAA's presence and would be available for use at the time of lease signing by NOAA or other parties. It is considered an existing facility. The pier facilities already exist at the Port of Gulfport. Therefore, these existing facilities) are not federal actions and NOAA is not evaluating the environmental impacts of the existing buildings and piers. Modifications to meet NOAA mission are being considered within this EA.

Under the Proposed Action, dedicated pier space would be available for up to two of NOAA's Atlantic fleet ships at the Port of Gulfport. NOAA's Atlantic fleet vessels are listed in Table 1-3 along with estimates of the amount of time at the Port and arrival and departure activity that would be expected. Homeport, transient berthing, and other OMAO capabilities and functions that currently take place at the GMSF in Pascagoula, MS, would continue. Facilities at the Port of Gulfport would provide year-round support for the NOAA research vessels at the newly constructed OEF leased from USM.

The Proposed Action is the Preferred Alternative. The Proposed Action and a No Action Alternative are being evaluated by NOAA per Section 102 of the NEPA under 42 U.S. Code (U.S.C.) Section 4332, Council on Environmental Quality (CEQ) Regulations for Implementing Procedural Provisions of NEPA at 40 Code of Federal Regulations (CFR) 1500-1508, and NOAA Administrative Order Series 216-6A (NOAA 2017). This EA was prepared to evaluate the potential consequences of the Proposed Action because existing facilities require modifications to meet NOAA's requirements prior to lease approval. No significant effects to the resources analyzed in this EA would result from the Proposed Action. No adverse impacts were identified in relation to any resource topic for the No Action Alternative.

Table 1-3. NOAA Atlantic fleet research vessels and estimated activity in the Port of Gulfport under the Proposed Action.

NOAA Research/Survey Ships in Atlantic Fleet (length, in feet/ minimum draft, in feet)	Anticipated Activity at Port of Gulfport	Measure of Activity
Ferdinand R. Hassler (123/13)	Number of Atlantic ships that may be supported	9
Gordon Gunter (224/15)	Maximum no. of ships in Port of Gulfport at one time	2
Henry B. Bigelow (209/19.4)	Average days per year typically in port (per vessel)	175
Nancy Foster (187/11.2)	Average annual no. of missions (per ship)	13
Okeanos Explorer (224/17)	Maximum no. of departures/ arrivals anticipated/ year	26
Oregon II (170/15)	Range in ship lengths	123 -274 feet
Pisces (209/19.4)	Range in ship drafts	11.2 – 19.4 feet
Ronald H. Brown (274/17)		
Thomas Jefferson (208/14)		

1.5.1 No Action Alternative

Under the No Action Alternative, NOAA would not lease space and facilities at the Port of Gulfport. Consequently, the new UMS program would continue to be housed in leased office space in Gulfport but not adjacent to the pier space not co-located with the USM programs. NOAA would make no investment in equipment or modifications at the Port of Gulfport with respect to the relevant lease to meet requirement gaps or expanded mission requirements such as those for the UMS maritime program.

Opportunities for partnering with USM to expand NOAA's UMS maritime program in a shared space would not be available and opportunities to further establish and expand the program with support

from USM would be, at a minimum, delayed. NOAA's February 2021 agreement with USM to partner on ways to improve how uncrewed systems for collecting important ocean observation data and augment NOAA's operational capabilities would also be delayed; as a result, alternative means for collaboration among NOAA scientists and UMS operators on projects to further UMS research, development and operations would need to be developed in the absence of the UMS program at the OEF. NOAA would also need to identify alternative means of meeting the objectives of the CENOTE Act of 2018, which requires the agency to coordinate research, assess, and acquire uncrewed systems with the U.S. Navy, other federal agencies, industry, and academia.

NOAA's Atlantic fleet would continue berthing and transiting among other locations during the field season, as dictated by mission and area of operations, under this alternative.

Under the No Action Alternative, NOAA would not lease the space and facilities at the Port of Gulfport. However, the No Action Alternative does not preclude alternate tenants leasing building and/or pier space at the Port of Gulfport. Presumably, alternative tenants would use the building and pier space and have similar effects on the environment. Additional impacts to environmental resources would be expected if the amount of cargo or number of vessels the port handles, and thereby the activities that require additional vehicles, machinery, employees, or other resources, was increased beyond what is anticipated from the Proposed Action. For this EA, and in the absence of information regarding alternative leases, it is assumed that another tenant would lease building and pier space in the absence of NOAA establishing a lease, and that the potential impacts would be the same as that described for the Proposed Action.

1.5.2 Alternatives Considered and Rejected

An Action Alternative was evaluated for a location along an upstream portion of Bayou Bernard that included a pier, just north of the Gulfport-Biloxi International Airport in Gulfport, Mississippi, and approximately 25 miles from open water in Biloxi Bay. The site was deficient with respect to operational specifications for channel depth and width; and downstream structures such as the I-10 and Hwy 90 bridges limit vessel access for vessels. Therefore, the second alternative was not carried forward for further analysis.

2.0 Affected Environment

The study area is entirely within the East Gulf Coastal Plain, which makes up the portion of the Gulf Coastal Plain from southwest Georgia, across the Florida panhandle and south Mississippi and Alabama, to southeastern Louisiana (USGS 2003). The East Gulf Coastal Plain consists of level and nearly level floodplains that extend to foothills and bluffs at the eastern edge of the plain.

The Port of Gulfport has a humid subtropical climate with hot humid summers, mild winters, and year-round precipitation. Temperatures range from an average high of 82°F in July and August to an average low of 50°F in December and January. Humidity levels range from a high of over 90 percent in the late summer to a low of about 82 percent in the winter. The Port is vulnerable to tropical storms and hurricanes.

The Project area is at the Port of Gulfport in the City of Gulfport in Harrison County, Mississippi, and is approximately 7 miles south of Interstate (I)- 10, approximately 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 and 10 miles from the Gulf of Mexico and Gulf Island National Seashore. The Project area is approximately 8 acres in size and has both deep-water and shallow-water access. The property is destined for use by the Roger F. Wicker Center for OEF, which is presently under construction.

The Port of Gulfport is a deep-water access port that was built on fill material in the 1940s. The Port has a channel for commercial shipping that allows large vessels to enter through the barrier island from the south. The Port is a commercial facility with intermodal land transportation facilities (road and rail) and interconnections for the distribution of cargoes to inland destinations.

Shoreline erosion is a significant geologic process in the region. Currently, shoreline erosion rates in the Gulfport area range from -2.3 to -3.3 feet per year, representing a major concern to the Port since there is a limited sediment supply to the longshore sedimentary processes. Hurricanes and storms can accelerate the erosion and sedimentation process of Gulf shorelines and storm surges, common during several months in the year, remove sediment from the beaches, resulting in further shoreline erosion. The sediments eroded from the shorelines are normally deposited onto the continental shelf or to the backside of barrier islands. During the last 100 years, shoreline erosion has been the characteristic process that is controlling the shape of the Mississippi coast (Morton and Moore 2005). Maintenance dredging and vessel traffic, however, contribute to localized sediment deposits and increases in channel sedimentation at the Port.

The Project area is within the East Gulf Coastal Plain ecoregion, as defined by The Nature Conservancy (TNC) and used by the Mississippi Department of Wildlife, Fisheries, and Parks (MDWFP) (TNC 1999). The East Gulf Coastal Plain spans five states and over 42 million acres, extending from Georgia to Louisiana, and includes a diverse assemblage of ecological systems, ranging from sandhills and rolling longleaf pine-dominated uplands to pine flatwoods and savannas, seepage bogs, and bottomland hardwood forests (MMNS 2005). The region is characterized by level topography with little relief and soils derived largely from unconsolidated sands, silts, and clays resulting from the erosion and outwash of the Appalachian Mountains. This ecoregion experiences a warm-to-hot, humid maritime climate and is influenced by wildfire and soil geochemistry. Coastal communities are frequently subjected to intense disturbance events from hurricanes or other storm systems (MMNS 2005).

The Project area is barren of vegetation due to fill and paving material to accommodate port activities and is currently an active construction site. There is no submerged aquatic vegetation (SAV) within 5 miles of the proposed Project area (USACE 2017). Most of the area immediately adjacent to the existing Port facility is considered urban and suburban land and characterized by impervious surfaces with little opportunity for vegetation other than ruderal and invasive species to become established. Natural bays, lakes, marshes, and woodlands are present in undeveloped areas north of the Project area, along interior protected shorelines, and farther inland. Barrier island beaches, barrier island passes, barrier island uplands, and barrier island wetland habitats occur in the southern region of the study area along the barrier islands (MMNS 2005).

Due to the previously developed nature of the Project area, several resources were considered absent and eliminated from detailed analysis, as summarized in Table 2-1.

Table 2-1. Resources Dismissed for Analysis in the EA.

Resource	Rationale for Elimination
Vegetation (terrestrial and aquatic)	The location for the Proposed Action is zoned heavy industry and has been filled and paved since the 1940s. SAV is not found within 5 miles of the proposed project location (USACE 2017). Therefore, vegetation is not considered further for this EA. The Proposed Action would not involve the temporary or permanent disturbance or alteration of upland vegetation and would not result in temporary or permanent disruptions of current or future vegetation. Therefore, vegetation resources were dismissed from further analysis in this EA.
Farmlands	<p>In 1980, the CEQ issued an Environmental Statement Memorandum “Prime and Unique Agricultural Lands” as a supplement to the NEPA procedures. Additionally, the FPPA was passed in 1981, requiring consideration of those soils, which the USDA defines as best suited for food, forage, fiber, and oilseed production, with the highest yield relative to the lowest expenditure of energy and economic resources.</p> <p>In the study area, the Harrison County Soil Survey (NRCS 2013) lists 11 mapping units as prime farmland, two as prime farmland, if drained, and seven as farmland of statewide importance or other important farmland. However, the Project area itself is constructed on fill material and has been paved numerous times and includes no Prime Farmland units. The addition of fill material between 1952 and 1975 and additional fill and pavement are evident from aerial photographs available from 1952 to 2012.</p> <p>Activities not subject to the FPPA include “projects on land already in urban development or used for water storage”. Therefore, the Proposed Action and No Action Alternative are not subject to FPPA review.</p>
Topography, bathymetry	The Proposed Action includes two berthing two research vessels and six smaller ships and boats that do require additional space or channel depth beyond what is present. No alterations in topography or bathymetry will be made and therefore are not considered further for this EA. No ground disturbing activities would occur.
Navigation Aids	No work in the Federal Navigation Channel or in any federal waters would occur. No Aids to Navigation would be impacted by the Project. Therefore, navigation is not considered further as part of this EA.

3.0 Affected Resources and Environmental Consequences

Analyses of the potential impacts to environmental resources under the Proposed Action are presented in the following sections. Impacts of the Proposed Action are limited to the addition of security fencing and gate, the expansion of utilities to the large and small piers, and the addition of vessels berthing and using the pier at the Port of Gulfport.

As described earlier, another tenant is expected to lease space at the OEF and pier space in the absence of NOAA establishing a lease and the potential impacts would therefore be the same (or greater) as that described for the Proposed Action. Under the No Action Alternative, environmental consequences of the No Action Alternative would be the same or greater than the Proposed Action, depending on the tenant. Therefore, the potential impacts of the No Action Alternative are not presented for individual resources.

As used in NEPA, the term “significant” requires considerations of both *context* and *intensity*. *Context* means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend on the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.

Intensity refers to the severity of impact. Responsible federal officials must bear in mind that more than one agency may make decisions about partial aspects of a major action. The following should be considered in evaluating intensity:

- Impacts that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect will be beneficial.
- The degree to which the proposed action affects public health or safety.
- Unique characteristics of the geographic area such as proximity to historic or cultural resources, parklands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.
- The degree to which the effects on the quality of the human environment are likely to be highly controversial.
- The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.
- The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
- Whether the action is related to other actions with individually insignificant, but cumulatively significant, impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.
- The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places (NRHP) or may cause loss or destruction of significant scientific, cultural, or historical resources.
- The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
- Whether the action threatens a violation of federal, state, or local law or requirements imposed for the protection of the environment.

For this analysis, the intensity of an impact is assessed in terms of change or degree of change in a resource condition. Common characterizations used include the degree of change from existing conditions or effects to managed or scarce resources, often expressed as the relative area of impact, measured units of change, differences in levels of use, etc. Terminology used for depicting the overall magnitude of impact include:

- No Effect—The proposed action would not cause a detectable change.
- Negligible—The impact would be at the lowest level of detection; the impact would not be significant.
- Minor—The impact would be slight but detectable; the impact would not be significant.
- Moderate—The impact would be readily apparent; the impact would not be significant.
- Major—The impact would be clearly adverse or beneficial; the impact has the potential to be significant.

These levels of potential effect can consider duration, geographic extent, and the potential likelihood to occur, as indicated below.

- Duration—How long the impact would be expected to occur or last, measured in length of time. Common characterizations are short-term, long-term, permanent, etc.
- Geographic extent—Where the impact would be expected to occur geographically in the project area. Common characterizations for this Proposed Action are largely local or regional in nature.
- Potential to occur (likelihood)—How probable the impact would be. Common characterizations include the likelihood of the impact if the project were to be permitted, or probability of occurrence based on the results of analysis. Common characterizations are unlikely, possible, probable, or certain to occur.

The Mississippi State Port Authority (MSPA) obtained a USACE permit for the expansion of the Port of Gulfport, with modifications to the west pier, east pier, north harbor, and turning basin, and construction of a breakwater on the eastern side of the Gulfport Harbor Federal Navigation Channel. An EIS was prepared by USACE (2017) to assess the environmental impacts associated with the proposed action or Port of Gulfport Expansion Project (PGEP). The PGEP has been completed and impacts are no longer being analyzed. However, much of the information presented in the EIS is relevant to the Project area with respect to the affected environment and potential impacts of the Proposed Action because the Proposed Action occurs within the footprint of the PGEP and is referenced throughout this EA.

3.1 Air Quality

Ambient air quality in the Project area is directly related to anthropogenic-originating emissions from stationary sources (stacks, vents, etc.); emissions from mobile sources such as vehicles, ships, trains, etc.; chemical reactions in the atmosphere such as the formation of ozone (O₃); and natural sources such as trees, fires, and wind-blown dust. Because all of these sources must be considered in an assessment of air quality, the EPA has identified air emissions inventories and ambient air monitoring as key methods for assessing air quality.

3.1.1 Regulatory Setting

The Clean Air Act (CAA) of 1970 (42 U.S.C. 7401 et seq.), as amended in 1977 and 1990, is the core federal statute governing air pollution. In addition to federal regulations, the Clean Air Act provides

states with the authority to regulate air quality within state boundaries. The CAA regulates air emissions from area, stationary, and mobile sources and requires the EPA to establish National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. Provisions of the CAA and state regulations potentially relevant to the project include, but are not limited to:

- National Ambient Air Quality Standards (NAAQS)
- General Conformity Rule
- Mobile Source Regulations
- Visibility and Regional Haze
- Greenhouse Gas Reporting Rule

MDEQ's Air Division develops and maintains state specific air emissions standards for Mississippi. Additionally, EPA's Federal Standards are adopted by reference. Beginning January 2019, MDEQ incorporated Federally Equivalent Method instruments for measuring PM_{2.5} on a continuous basis to determine NAAQS compliance at several Mississippi sites including Gulfport (MDEQ 2021).

NAAQS. The EPA has set NAAQS for seven principal pollutants, referred to as "criteria" pollutants. They are carbon monoxide (CO), nitrogen dioxide (NO₂), O₃, lead (Pb), inhalable particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns (PM₁₀), fine particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 microns (PM_{2.5}), and sulfur dioxide SO₂ (SO₂). The NAAQS are further defined in 40 CFR Part 50. Ambient air concentrations of certain air contaminants within Harrison County are measured by air- monitoring stations, and the results are reported to the EPA. Current (2020) monitoring data for Harrison County are available for PM_{2.5} and O₃. Harrison County is currently designated as attainment or unclassifiable with the NAAQS for all regulated pollutant as of July 31, 2022 (EPA 2022, accessed August 19, 2022/https://www3.epa.gov/airquality/greenbook/phistory_ms.html).

General Conformity Rule. The EPA has promulgated a General Conformity Rule (GCR) (Section 110 of the CAA and Title 40 CFR Part 51.853) that requires responsible federal agencies to make a determination of conformity with an affected State Implementation Plan (SIP). Mississippi's SIP was approved in December 2021 (<https://www.epa.gov/sips-ms/epa-approved-statutes-and-regulations-mississippi-sip>; <https://www.federalregister.gov/documents/2022/07/15/2022-15124/air-plan-approval-mississippi-infrastructure-requirements-for-the-2015-8-hour-ozone-national-ambient>) and addresses infrastructure improvements to SIP elements such as requirements for monitoring, basic program requirements, and legal authority to assure attainment and maintenance of the NAAQS.

Mobile Source Air Pollution Control Requirements. Mobile source air pollution control requirements for gasoline and diesel in on-road engines are codified in 40 CFR 80, 40 CFR 85, and 40 CFR 86. The EPA's mobile source regulations in 40 CFR 80 Subpart I (Motor Vehicle Diesel Fuel; Nonroad, Locomotive, and Marine Diesel Fuel; and United States Emissions Control Area Marine Fuel) contain provisions restricting diesel fuel sulfur content for fuel used in mobile sources to prevent damage to the emission control systems. These restrictions were phased in for highway diesel fuel starting in 2006 and for nonroad diesel fuel in 2007 and require the use of ultra-low sulfur diesel with a maximum sulfur content of 15 parts per million in on-road vehicles and nonroad equipment. Since January 2020, all ships must burn fuel with a content of 0.5 percent sulfur to comply with an International Maritime Organization amendment to the International Convention for the Prevention of Pollution from Ships (MARPOL).

Visibility Protection Requirement and Regional Haze Rule. Atmospheric visibility is defined by the ability of the human eye to distinguish an object from the surrounding background. Aerosols that have a diameter between 0.01- 1 μ m scatter light most efficiently and therefore have a larger effect on visibility. The greatest reduction in visibility is at high relative humidity when the aerosols swell by uptake of water; this phenomenon is known as haze (EPA 1999). The federal Regional Haze Rule (promulgated in 18 AAC 50.300 to 18 AAC 50.309) requires states to develop long-term plans for reducing pollutant emissions that contribute to visibility degradation, and to establish goals aimed at improving visibility in Class I areas in those plans.

Marine Vessel Emissions. These vessel emissions are not regulated. However, International engines installed on U.S. vessels are subject to fuel standards and engine emission standards that EPA has adopted under the Clean Air Act (see Mobile Source Air Pollution Requirements, above). The final National Emission Standards of Hazardous Air Pollutants (NESHAP) regulation for shipbuilding and ship repair facilities is applicable to existing and new shipbuilding and ship repair facilities that are “major sources” of hazardous air pollutants (HAPs) or are located at facilities that are major sources. Section 112(a) of the CAA defines “major source” as a source or group of sources located within a contiguous area and under common control that emits, or has the potential to emit, considering controls, 10 tons per year or more of any individual HAP or 25 tons per year or more of any combination of HAP. Potentially polluting substances would be managed using BMPs to ensure that HAP emissions are minimized or eliminated.

Greenhouse Gas Reporting Rule. Greenhouse gases (GHGs) are natural or anthropogenic gases that trap heat in the atmosphere and contribute to gradual atmospheric temperature increases, i.e., the greenhouse effect. In October 2009, the EPA issued the Mandatory Reporting of Greenhouse Gas Rule (EPA 2009), which required reporting of GHG data and other relevant information from large stationary sources and suppliers in the United States. In general, the rule is referred to as 40 CFR 98 (Part 98). Implementation of Part 98 is referred to as the GHG reporting program. Per 40 CFR 98 Subpart A, research and development activities are not required to report GHG emissions to the EPA (EPA 2013). The gases covered by Part 98 are carbon dioxide (CO₂), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride, and other fluorinated gases.

3.1.2 Affected Resources

Projected air emissions at the Port were evaluated in the PGEP EIS and small, temporary increases in emissions in comparison to Harrison County were predicted (USACE 2017). Increases ranged from 0.03 to 0.05 percent of total emission for Harrison County for SO₂, VOCs, PM₁₀, and HAPs; from 0.15 to 0.68 percent for PM_{2.5}, CO, and CO_{2e} (CO₂ equivalent); to a maximum of 2.32 percent for NO₂. The largest increases (NO_x and CO_{2e}) were primarily due to the increase in truck, railroad, and container ship traffic at the Port. On-road and employee vehicles made up the small portion of any other activity examined (e.g., nonroad construction equipment, maintenance dredging). For context, EPA reports the average annual CO₂ emissions from a typical passenger vehicle result in 4.6 metric tons of carbon/year, assuming about 22 miles/gallon in a gas-fueled vehicle (EPA 2014). This would amount to a total of 50.6 metric tons of carbon. This is minor compared with a predicted 2,653 metric tons of carbon from Port activities in 2020 (USACE 2017). The State of Mississippi produces approximately 69.4 million metric tons of carbon/year. Recent air emissions in Harrison County are summarized in Table 3-1.

Table 3-1. Harrison County, MS Air Emissions Inventory (MDEQ 2017, 2021).

Measure	Ozone 8-hour (ppb) average concentration (ppb)	PM _{2.5} Annual average (µg/m ³)	PM _{2.5} 24-hour average (µg/m ³) 98 th percentile µg/m ³	PM _{2.5} 10 24-hour average (µg/m ³)
Standard	70	12	35	150
Value (Gulfport)*	58	9.2	19	-
Value (County)	62 (Harrison)	8.9 (Harrison)	19 (Harrison)	72 (Hinds)

Measure	CO 8-hour average (ppm)	CO 1-hour average (ppm)	NO ₂ annual average (ppb)	NO ₂ 1-hour average (ppb)	SO ₂ 1-hour average (ppb)	SO ₂ max. annual average (ppm)	SO ₂ 24-hour average (ppm) not exceeded > 1/year
Standard	9	35	53	100	75	0.030	0.14
County	Hinds		Jackson		Hinds/ Jackson		
Value (County)	1.1	1.4	3	28	3/5	0/0	0/0

*Note that Ozone and PM are reported for Gulfport (MDEQ 2021), while other constituent values are available only at the county level.

Mississippi's SIP in December 2021 (<https://www.epa.gov/sips-ms/epa-approved-statutes-and-regulations-mississippi-sip>; <https://www.federalregister.gov/documents/2022/07/15/2022-15124/air-plan-approval-mississippi-infrastructure-requirements-for-the-2015-8-hour-ozone-national-ambient>), addresses infrastructure improvements to SIP elements such as requirements for monitoring, basic program requirements, and legal authority to assure attainment and maintenance of the NAAQS.

3.1.3 Environmental Consequences

Under the Proposed Project, two NOAA research vessels would be berthed and transit to and from the Port of Gulfport between research cruises and would be supported by six support ships located at the Port. Emissions from the two vessels would result in a negligible, albeit permanent, increase in local air emissions from the vessels themselves and from vehicle emissions due to additional 11 NOAA staff at the OEF. As described later in this section, the number of vessel trips occurring at the Port of Gulfport in 2021 was below the baseline number of trips reported in 2017 (USACE 2017) and 2020, and well below the number of trips projected for 2060. Consequently, the emissions associated with two NOAA research vessels are not expected to have any effect on air quality. Under the Proposed Action, an additional 11 NOAA employees are expected to drive to and from the OEF. If commuting separately, this would increase commuter traffic by 22 trips per day. No NAAQS violations are anticipated.

Because the Project location is in Harrison County and the County has been designated in attainment or unclassifiable with the 2008 8-hour O₃ standard, the General Conformity requirements are not applicable, and a General Conformity Determination will not be required for the Proposed Action. However, should the attainment status change prior to construction, MSPA would need to coordinate with MDEQ regarding a General Conformity Determination.

The Proposed Action would have no direct compliance responsibility with regard to vehicles and engine emissions standards and the use of equipment to install security fencing and utilities would have negligible total air emissions. Because they conform with emission standards, NOAA vessels and the six support ships would be in compliance with mobile source air pollution control requirements under the Proposed Action.

Mississippi's SIP includes the State's first periodic report describing progress towards reasonable progress goals and contains the associated determination that the State's regional haze SIP is adequate to meet these RPGs for the first implementation period (EPS 2021). Therefore, the Proposed Action would be in compliance with the visibility protection requirements and Haze Rule.

NOAA vessels are anticipated to spend the majority of their time at sea and repair activities at the Port of Gulfport would be intermittent. Therefore, it is unlikely the vessels would be a significant source of HAPs related to repairs or that Gulfport's status as an area source to a major source.

The Port of Gulfport is expected to contribute to higher GHG emissions in the long-term, largely due to the increased container throughput and associated activities, rather than inefficiencies by the Port (USACE 2017). However, based on activities anticipated under the Proposed Action, NOAA is not a producer or a supplier of industrial emissions that would require GHG reporting and is exempt from the GHG reporting program.

Due to the short-term duration of the maintenance dredging activities once every ten years, emissions from these activities were not expected to adversely impact the long-term air quality in the area. Due to the limited duration of these activities, emissions from these construction activities were not expected to adversely impact the long-term air quality in the area. The Proposed Action includes no dredging or heavy machinery and is not expected to have significant impacts on air quality.

3.2 Noise

Noise is defined as unwanted sound that disrupts or interferes with normal activities or that diminishes the quality of the environment. Noise is usually caused by human activity and is added to the natural, or ambient, acoustic setting of an area. Individuals respond to similar noise events differently based upon various factors, including existing background level, noise character, level fluctuation, time of day, the perceived importance of the noise, the appropriateness of the setting, and the sensitivity of the individual.

3.2.1 Regulatory Setting

Federal agencies have developed criteria to determine whether noise attributable to a project or source would affect residential areas. These criteria are only applied to projects requiring an action by that particular Federal agency.

- FAA Criteria activities
- FHWA Criteria – Hourly Leq of 67 dBA or greater caused by motor vehicles
- HUD Criteria – DNL of 65 dBA or greater in a HUD-financed community
- FTA Criteria – Existing noise level plus 10 dBA or more caused by trains or transit sources.

The Noise Control Act of 1972 (PL 92-574) and several other Federal laws require the Federal government to set and enforce uniform noise standards for aircraft and airports, interstate motor carriers and railroads, workplace activities, medium- and heavy-duty trucks, motorcycles and mopeds, portable air compressors, Federal highway projects, and Federal housing projects. The Noise Control Act also requires Federal agencies to comply with all Federal, state, and local noise requirements.

No state noise ordinances would be applicable to this Project. State ordinances are limited to specific activities (e.g., mufflers on automobiles, restrictions on locating shooting ranges). The State of

Mississippi delegates the “power to make all needful police regulations necessary for the preservation of good order and peace of the municipality and to prevent injury to, destruction of, or interference with public or private property” to “the governing authorities of municipalities” (Mississippi Code of 1972, § 21-19-15). Local noise regulations or requirements relevant to the proposed Project activities include the following (excerpted from the Code of Ordinances for the City of Gulfport, Mississippi 1963, § 17-19; Ord. No. 2133, §§ IV–XII, 3-17-98):

Specific noises interfering with enjoyment of property or public peace and comfort enumerated. The following acts, among others, are declared to create loud and raucous noises, and shall be deemed a violation of this section, but such enumeration shall not be deemed to be exclusive:

The sounding of any horn or signal device on any motor vehicle, motorcycle, or motorboat, except as a danger signal, as required by state law.

The use of any motor vehicle, motorcycle, or motorboat so out of repair which emits or creates loud, raucous, or rattling noises.

The discharge into the open air of the exhaust from any motor vehicle, motorcycle, or motorboat, except through a muffler, or other device, which will effectively and efficiently prevent loud and raucous noises.

Use of bell, siren, compression, or exhaust whistle on motor vehicles, motorcycles, and motorboats. Except as specifically authorized or permitted elsewhere in this section, no person shall use upon a motor vehicle, motorcycle, or motorboat any bell, siren, compression or exhaust whistle, except that motor vehicles, motorcycles, and motorboats operated in the performance of any emergency work or in the performance of any duty by law enforcement officers, fire department, and ambulances may attach and use a bell, siren, compression or exhaust whistle.

Exemptions. The following are exempt from the provisions of this section:

Noises from construction and demolition activities for which a building permit has been issued by the city are exempt from this section between the hours of 7:00 AM and 9:00 PM, provided that mufflers on construction equipment shall be maintained.

Interstate railway locomotives and motor vehicles, aircraft, trucks, or other motor vehicles in interstate commerce, or those which are in all respects operated in accordance with or pursuant to applicable Federal laws or regulations.

3.2.2 Affected Resources

Noise-sensitive receptors in the vicinity of the Project area are located in the City of Gulfport. The existing noise environment of the City of Gulfport is affected by a number of sources, most of which are transportation-related (e.g., railways, roadways). Waterborne transportation activities that contribute to the region’s ambient noise environment include ship traffic, barges, commercial fishing/shrimping vessels, sport and recreation boats, and maintenance dredging. Noise studies at other ports have documented noise levels generated from port activities ranging between 55 and 70 dBA at a distance of 1,100 feet (Port of Los Angeles, 2008). The land uses commonly evaluated by Federal agencies that have established noise impact criteria include residential, institutional (e.g., schools and churches), and recreational. The residential area nearest to the proposed Project area is located approximately 2,300 feet north-northwest of the site on 11th Street. The nearest school, Covenant Christian School, is approximately 2,300 feet north of the site. The nearest church, St. Matthew Evangelical Lutheran

Church, is located 3,000 feet northeast of the site. The nearest recreational area is Harbor Square Park, located 2,100 feet east-northeast of the site.

Noise is typically measured in decibels (dB) to describe the amplitude of sound. The most common is the A-weighted sound level or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Studies have shown that the A-weighted level is closely correlated with annoyance. For example, a large truck passing by about 30 feet away has an average noise level of 85 dBA, pile driving has an average noise level of 100 dBA, and normal speech has a noise level of about 65 dBA. Ambient noise levels were measured at 24 residential receptor locations in the vicinity of the Port of Gulfport for the PGEP EIS (2017). The average noise level for these receptors was 53 dBA. Ambient noise sources in predominantly rural areas included vehicular traffic, rail traffic, barking dogs, and birds and the average noise level was 50 dBA.

3.2.3 Environmental Consequences

A noise study completed for the PGEP EIS (USACE 2017) calculated the potential noise levels at the Port of Gulfport west pier (greatest activity and noise) using the operational range from the Port of Los Angeles, which has an operational noise level of 55 to 70 dBA at 1,100 feet and throughput of approximately 8.0 million Twenty-foot Equivalent Units (or “TEU”, which are measures of cargo capacity for container ships and terminals). Accounting for TEUs (<200,000 TEUs at Gulfport), the operational noise was estimated at 39 to 54 dBA for the year 2060.

Under the Proposed Action, intermittent vessel activity would be ongoing and noise would be consistent with background noise at the Port. Extension of utilities and construction of security fencing and a gate would be short term and temporary and no noise impacts are anticipated. Assuming the requirements of applicable Federal laws are met, Project activities would either be exempt from or would comply with the City of Gulfport noise-related ordinances. No ground-disturbing vibrations would occur as part of the Project.

Under the No Action Alternative, no additional construction or vessel transit activities by NOAA would occur and no adverse impacts to noise levels in the area would occur. Therefore, no noise above background port activities is anticipated under the Proposed Action. The Proposed Action would not significantly affect noise levels in the Project area or vicinity.

3.3 Geologic Resources and Soils

3.3.1 Regulatory Setting

Federal Land Policy and Management Act

The Federal Land Policy and Management Act of 1976 (PL 94-579) requires that the public lands be managed in a manner that protects the “quality of scientific” and other values, which includes paleontological resources, such as fossils. Paleontological resources may also be protected by the Antiquities Act or the Archaeological Resources Protection Act.

3.3.2 Affected Resources

The Project area is within the East Gulf Coastal Plain and is composed of Miocene, Pliocene, Pleistocene, and Holocene geologic formations (USACE 2017). Modern sediments in the area consist mostly of sandy,

fine-grained silt sand clays with organic materials. Shoreline (retreat) erosion is an important geologic process in this area. Harrison County is predominantly underlain by one of America's largest unconfined aquifer systems, the Graham Ferry Formation (BMA 2022). This mix of well-sorted sands and gravels is the result of stream deposits from glacial outwash at the end of the most recent ice age, approximately 11,500 years ago during the Pleistocene Epoch. The Graham Ferry Formation is present mainly north of I-10 in Harrison County. Bed thickness can exceed 100 feet in the northern end of the county. South of I-10 is a mix of highly permeable, sand-sized, and well-sorted Holocene Epoch deposits that mirror the properties of the Graham Ferry Formation. Bed thickness ranges from 1-30 feet in higher elevations.

Both the Holocene and Pleistocene deposits are underlain by the Miocene-aged Pascagoula Formation, which acts as an aquitard, forcing groundwater to flow laterally, down slope. The contact between terrigenous clastic sediments and fine-grained marine deposits is present in the county at elevations just above mean high water. The Project area has an average elevation of 10 feet above MSL and groundwater depths are approximately 3 feet below land surface (BMA 2022). The potentiometric surface slopes to the South, towards The Mississippi Sound.

Most soils in the vicinity of the Project area were formed from coastal deposits inundated with saltwater from the Gulf and the local water table. Soils in the vicinity of the Port are well drained with loamy subsoil conditions and extend along the entire coast of the Mississippi (SCS 1971). The Eustis-Latonia-Lakeland association is used for industrial, commercial, and recreational areas. The high content of sand, limited clays, and the consistency depth make these soils useful for infrastructure. Highways, pipelines, and underground cables are commonly constructed on these soils. Where the parent material is exposed, the soils have been mined as sand sources.

Maintenance dredging maintains the channel depth and dredge material is disposed of at ocean dredged material disposal sites (ODMDSs) (Anchor QEA LLC, 2017). 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.

3.3.3 Environmental Consequences

Under the Proposed Action, utilities would be extended along the east pier via casing pipes and would require no ground disturbance. Chain link fencing would be installed using fence posts buried approximately 4 feet deep at intervals of approximately 9-10 feet along the perimeter of the secure area., resulting in minor ground disturbance during construction. A security gate would be installed at the small ship harbor and would be constructed as a component of the pier. Since the Project area is constructed on fill material, no significant adverse impacts to natural soils would occur. The security gate would be attached to a pier.

Therefore, the Proposed Action is not expected to result in any significant adverse impacts to geological resources, soils, or sediments.

3.4 Hazardous Materials

A Phase I Environmental Site Assessment (ESA) in accordance with ASTM International Standard E1527 was prepared for the Project area. The evaluation included an onsite visit and review of available public information relating to the hazardous material issues within the study area (BMA 2022). The purpose of the Phase I ESA was to determine presence of Recognized Environmental Conditions (RECs) on the

property, defined as: *“The presence or likely presence of hazardous substances/petroleum products released to the environment or the material threat thereof.”* The assessment was performed in accordance with ASTM International E1527-21, as described in the report.

3.4.1 Regulatory Setting

Resource Conservation and Recovery Act and Comprehensive Environmental Response, Compensation, and Liability Act

The EPA is responsible for implementing and enforcing federal laws and regulations pertaining to hazardous materials. The primary legislation includes the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act and the Emergency Planning and Community Right-to-Know Act. Hazardous materials storage and reporting requirements, known as Tier II Requirements, have been delegated to the states by the EPA.

Occupational Safety and Health Act

The Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor is responsible for implementing and enforcing federal laws and regulations that address worker health and safety. OSHA requires training for those using or otherwise handling hazardous materials or involved in the investigation and/or clean-up of contaminated sites. Training is to include procedures for personal safety, hazardous materials storage and handling, and emergency response.

Code of Federal Regulations, Titles 29 and 40

CFR Title 29 includes requirements to manage and control exposure to lead-based paint and asbestos-containing materials. OSHA is the agency responsible for ensuring worker safety in the workplace, including safety during construction activities that may result in exposure to hazardous materials. Federal OSHA also has an asbestos survey requirement under CFR Title 29, which requires facilities to take all necessary precautions to protect employees and the public from exposure to asbestos. The removal and handling of asbestos-containing materials is governed primarily by EPA regulations under CFR Title 40. The regulations require that the appropriate state agency be notified before any demolition, or before any renovations, of buildings that could contain asbestos or asbestos-containing materials above a specified threshold.

3.4.2 Affected Resources

Vegetation is nearly absent from the subject property due to fill material and paving since the 1950s. Isolated vegetation is present where maintenance inadvertently left it. No signs of vegetation stress or released materials were apparent. A “tenacious clay” is described as present across the Project Area (BMA 2022) that acts as an aquitard, forcing groundwater to flow laterally, along a downward gradient from about 10 feet relative to MSL, towards the Mississippi Sound. Groundwater depths in the project area are reportedly approximately 3 feet below land surface (BMA 2022).

Stormwater flows overland into the harbor, where waters are considered estuarine. There are no active Underground or aboveground storage tanks on the subject property and no Federal/State regulations apply to the subject property due to releases of hazardous waste/petroleum products. Interviews

conducted revealed no history of RECs and the property has never been used for hazardous materials generation, storage, or disposal.

An adjacent site owned by Dole Fresh Fruit included a former LUST site that was discovered and remediated with a No Further Action status issued in 2007. Other ASTs/USTs with No Further Action status occur on adjacent property. The location of the Chemtex Superfund site is approximately 5 miles east, as described in Section 3.4.

No Superfund sites were found or recorded as occurring in the Project area. The closest Superfund site is in Gulfport, approximately 5 miles east of the Port of Gulfport and has no impact on the Project area. Operations at the site from 1955-1998 consisted of production of synthetic hydrocarbon resins and waxes from petroleum products (EPA 2017). These operations resulted in soil, sediments and groundwater contamination. The site was finalized on the National Priorities List (NPL) in 2012, followed by cleanup and remediation (completed in 2017). In the 2021 five-year review, EPA announced a partial deletion at the Chemfax site from the NPL for 11 acres of soils and sediments, with no further response actions necessary other than operation and maintenance (EPA 2021). The groundwater portion of the site will remain on the NPL and is not being considered for deletion as part of this action and will continue to be monitored until it meets EPA criteria for NPL deletion.

3.4.3 Environmental Consequences

No Recognized Environmental Conditions (RECs) were observed at the Project area or found during a review for the ESA. There is a low probability of encountering hazardous materials or waste during construction and there is little to no potential to encounter hazardous material during operations and installation of fencing.

The Proposed Action includes the installation of a backup power generator, with a double-walled diesel fuel supply. The size of the diesel tank would not exceed 1,000-gallons capacity and therefore would not be regulated by EPA. MDEQ regulates storage of more than 110 gallons in above ground storage tanks. NOAA employees and their contractors would be required to comply with all relevant statutes and regulations related to the transport, use, storage, or disposal of hazardous materials/waste, as well as OSHA regulations to protect workers through hazard communication and provision of adequate training.

Activities anticipated under the Proposed Action would include use of hazardous materials such as fuels, oil, lubricants, and paints for minor boat maintenance and workshop activities in the storage or laydown area. However, no major boat maintenance would be conducted. Improper handling, storage, or disposal during minor maintenance activities could result in accidental spills during construction or operation that could adversely impact the environment, particularly if the spills occur in or flow to reach marine waters.

The quantities of hazardous substances used during construction or operation of the Proposed Action would not exceed quantities used at typical construction sites or at other facilities undertaking minor boat maintenance activities. Adherence to applicable laws and industry standard BMPs would reduce the likelihood of accidental spills or mishandling of hazardous materials. Therefore, the Proposed Action is expected to have no significant adverse impact relating to the use and handling of hazardous materials.

3.5 Surface Water and Ground Water

Mississippi has approximately 84 miles of coastal shoreline and 758 square miles of coastal waters including large estuaries, smaller bays and tidal rivers, creeks, and bayous. Inland or bay type estuaries include St. Louis Bay, Back Bay of Biloxi, and Pascagoula Bay (MDEQ 2020). The state's largest estuary (550 square miles) is the Mississippi Sound which extends from the southern edge of the state's contiguous land mass to the Gulf of Mexico and a chain of barrier islands (Cat, Ship, Horn, and Petit Bois Islands) located approximately 11 miles offshore. The state classifies the Gulf of Mexico as an estuary within Mississippi waters to the state boundary located 3 miles south of the barrier islands.

3.5.1 Regulatory Setting

Clean Water Act

The Clean Water Act (CWA) is a 1977 amendment to the Federal Water Pollution Control Act of 1972 (U.S.C. Title 33), which established the basic structure for regulating pollutant discharges to navigable waters of the United States. The CWA sets forth procedures for effluent limitations, water quality standards and implementation plans, national performance standards, and point source (e.g., municipal wastewater discharges) and nonpoint source programs (e.g., stormwater). The CWA also establishes permits for dredged or fill material under Section 404, certifications that activities meet water quality standards under Section 401, the National Pollutant Discharge Elimination System (NPDES) under Sections 402, and allows for a list of impaired water bodies under Section 303(d) that can assist in improving water quality in impaired water bodies.

MDEQ provides surface water quality assessments on three conventional water quality parameters: dissolved oxygen (DO), pH, and temperature. Bacteriological data include water column surveys for fecal coliform bacteria or other bacteriological indicators (i.e., enterococci). These data are used to assess the recreation use for waters to protect the public in swimming and other water related activities. For the 2020 §305(b) assessment, bacteriological data were provided by the MDEQ Beach Monitoring Program and MDEQ Recreational Monitoring Network. The Port of Gulfport has no swimming beaches so beach data are not reported here.

Section 10 of the Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 U.S.C. 403) establishes a program to regulate all work or structures in or affecting the course, condition, location, or capacity of jurisdictional wetlands. Jurisdictional wetlands include waters that are subject to the ebb and flow of the tide and/or are presently used or where used in the past or may be susceptible for use to transport interstate or foreign commerce. Activities requiring Department of the Army (DA) permits under Section 10 of RHA include structures (e.g., piers, wharfs, breakwaters, bulkheads, jetties, weirs, transmission lines) and work such as dredging or disposal of dredged material, or excavation, filling, or other modifications to the jurisdictional wetlands. No modifications to waters of the U.S. will be made under the Proposed Action. Therefore, the RHA is not discussed further.

3.5.2 Affected Resources

Surface Water. Surface waters near Gulfport are limited to small creeks discharging water at the shorelines. Brickyard Bayou is located north of Gulfport, paralleling the shorelines of the Gulf and connecting with Bernard Bayou, which discharges their waters with Big Lake. The nearest surface source

is Turkey Creek, located approximately 2 miles north of Gulfport flowing toward the east-northeast, eventually discharging into Bernard Bayou. There are no other creeks or surface sources that drain immediately adjacent to the Port.

MDEQ water quality parameters (dissolved oxygen [DO], pH, and temperature) are listed in Table 3-2 for 2020. Based on Mississippi Coastal Assessment data analysis, approximately 97 percent of all Mississippi coastal waters fully support aquatic life use for these three parameters and meet Attainment goals.

Table 3-2. Mississippi Coastal Assessment Conventional Water Quality Parameter Summary for all Coastal Waters (includes Port of Gulfport) (Source MDEQ 2020 305(b) Report).

DO		Temperature		pH	
Attainment	Non-Attainment	Attainment	Non-Attainment	Attainment	Non-Attainment
97%	3%	98%	2%	98%	2%

The larger percentage of low DO in tidal rivers and bayous is due to several factors. Low dissolved oxygen conditions are common in constricted coastal waters such as tidal rivers and bayous with most of these conditions naturally occurring during the summer months. Although localized dissolved oxygen problems due to anthropogenic pollution sources can and do occur, naturally high water temperatures, saline/freshwater stratification, and salt marsh interactions are prevalent in Mississippi tidal rivers and bayous and frequently cause periods of low dissolved oxygen.

Ground Water. The study area is located above the coastal lowlands aquifer system, which borders the shores of the Gulf. Moderately deep and deep wells are the principal sources of groundwater for both domestic and municipal uses in this area. The wells are located within the Pascagoula and Hattiesburg formations (Miocene) and Citronelle Formation (Pliocene) (MDEQ, 2010). The Citronelle Aquifer is the shallowest source of groundwater in southern Mississippi, including the Project area. This unit comprises many discontinuous and hydrogeological independent aquifers and consists principally of sand and gravel with lenses and layers of clay; however, the extent of the Citronelle Formation is unclear in the immediate vicinity of Gulfport (Grubb, 1986).

Recharge areas are located several miles north of Gulfport; recharge occurs by infiltration of rain that falls on sandy outcrops. Water-bearing units have high transmissivity horizontally and low transmissivity vertically (Barraclough and Wade, 1986). About 9,600 million gallons per day (mgd) of groundwater was pumped from the regional aquifers during 1980. More recently, USGS data from a well located 3 miles west of Gulfport shows that groundwater levels in the area have been increasing from –28.0 feet in 1998 to –20.8 feet in 2010, which shows signs of water recovery. This well was established on the coastal lowlands aquifer system and lies within the Hattiesburg Formation (USACE 2017). There are no sole source aquifers, drinking water supply watersheds, or groundwater recharge areas underlying any of the proposed upland or in-water construction areas.

The Phase I Environmental Assessment (described in Section 3.4) indicated that the surficial groundwater was within 3 feet of land surface in the Project area. The coastal lowlands aquifer system is the surficial aquifer for the Project area and groundwater recharge occurs inland by precipitation over outcrop areas. In general, groundwater quality becomes poorer near the coast where saltwater encroachment limits the amount of available fresh water.

3.5.3 Environmental Consequences

Construction and operation activities associated with the Proposed Action are not expected to result in significant impacts to groundwater and surface water hydrology.

No groundwater withdrawals are anticipated for the Project. No apparent private, public, or industrial water wells registered with the State of Mississippi would be destroyed and/or affected by construction of the proposed Project based on their distance from the Port of Gulfport.

Compliance with regulations and instructions for material storage and disposal and the implementation of stormwater controls would minimize the potential for adverse impacts to groundwater during construction and operation. Therefore, construction activities and facility operations would not affect groundwater resources. Impacts to shallow groundwater from the potential release of petroleum products during construction and hazardous material spills from shipping interests are possible. However, the use of BMPs in the Project area would greatly minimize the potential for this type of impact. BMPs that meet local, state, and Federal requirements would be implemented as part of the Spill Response Plan for the Project to address potential spills.

3.6 Wetlands and Other Waters of the U.S.

Wetlands are transitional lands between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water. Under the USACE regulations, wetlands are defined as: *Those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas* (33 CFR 328.3).

Based on this definition, wetlands have three basic characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. The presence of all three of these criteria qualifies an area to be considered a jurisdictional wetland. The USFWS National Wetland Inventory (NWI) classifies wetlands based on the types of plants, soils, and frequency of flooding (Cowardin et al. 1992). Although not considered wetlands, both the NWI (USFWS, 2011a) and Cowardin et al. (1992) include data on deep-water habitats (e.g., lakes, open bays and oceans, ponds, etc.).

3.6.1 Regulatory Setting

Executive Order 11990

EO 11990, Protection of Wetlands, requires federal agencies to avoid, to the extent practicable, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. No wetlands are present in the Project area.

Section 404 of the Clean Water Act

Section 404 of the CWA authorizes the Secretary of the Army to issue permits for the discharge of dredge or fill into wetlands and other Waters of the United States (WOUS). Any discharge of dredge or fill into WOUS requires a permit from the USACE. Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344) establishes programs to regulate the discharge of dredged or fill material into WOUS, including

wetlands. WOUS include surface water systems such as streams, lakes, ponds, and adjacent wetlands if they meet certain criteria. Jurisdictional wetlands, regulated through permitting by USACE under Section 404, must possess wetland indicators for hydrology, vegetation, and soils.

No discharges would occur under the Proposed Action and impacts under Section 404 are not discussed further.

Section 10 of the Rivers and Harbors Act

The Federal Gulfport Harbor Navigation Project was adopted by the Rivers and Harbors Act (approved on July 3, 1930) and the Rivers and Harbors Act (approved on June 30, 1948). Section 10 of the Rivers and Harbors Act of 1899 requires authorization from the Secretary of the Army, acting through the U.S. Army Corps of Engineers (USACE), for the construction of any structure in or over any navigable water of the United States. The law applies to any dredging or disposal of dredged materials, excavation, filling, rechannelization, or any other modification of a navigable water of the United States, and applies to all structures, from the smallest floating dock to the largest commercial undertaking.

None of these actions would occur under the Proposed Action and this Act is not discussed further here.

Coastal Zone Management Act

The CZMA was enacted by Congress in 1972 to develop a national coastal management program that comprehensively manages and balances competing uses of and impacts on any coastal area or resource (16 USC 1451 et seq.). The program is implemented by individual state coastal management programs in partnership with the Federal government. Section 307 of the CZMA, called the Federal Consistency Provision, is a major incentive for states to join the national coastal management program and is a powerful tool that states utilize to manage coastal uses and resources and to facilitate cooperation and coordination with Federal agencies. Federal consistency is the CZMA requirement where Federal agency activities (including Federal permits or licenses) that have reasonably foreseeable effects on any land or water use or natural resource of the coastal zone (also referred to as coastal uses or resources and coastal effects) must be consistent to the maximum extent practicable with the enforceable policies of a coastal state's federally approved coastal management program.

The Mississippi Coastal Wetland Protection Act Section 49-27-7 exempts municipal or local port authorities from the provisions of the State Act; however, the Mississippi State Port Authority (MSPA) is not excluded from the Federal coastal consistency requirements. Therefore, the MDMR Bureau of Wetlands Permitting is responsible for assuring consistency with the CZMA (MDMR 2015).

Waters of the U.S.

The term waters of the U.S. (WOUS), as defined in 40 CFR 230.3(s), includes:

- All waters currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters.

Navigable Waters of the U.S.

The [Navigable Waters Protection Rule](#) defines “waters of the United States” and the scope of waters federally regulated under the Clean Water Act. The rule was published in the Federal Register on April 21, 2020. Navigable waters of the U.S. are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity.

3.6.2 Affected Resources

The Project area does not include, but is adjacent to, WOUS and NWOUS. No wetlands are present in the Project area.

The proposed property is barren of vegetation because it is an active industrial port among other industrial facilities and bordered to the north by Highway 90. Estuarine wetlands are present adjacent to the Project area and no construction will occur within those wetlands. The proposed action will occur in an already constructed building and along established piers. No additional dredging, boring, or other disturbance activities are proposed. The two NOAA vessels will be moored at established docks and the proposed utilities expansion would be installed alongside existing utilities.

3.6.3 Environmental Consequences

There are no wetlands or WOUS in the Project area, although there are WOUS directly adjacent to the Project area. However, no in-water activities or discharges to WOUS would occur as part of the Proposed Action. Therefore, no significant impacts to these resources would occur.

3.7 Floodplains and Other Executive Orders

The land surface at the Port of Gulfport is entirely within the FEMA 100-year floodplain (FEMA 2009) due to the need for proximity to piers. Therefore, per EOs 11988, 13690, and 11990, regarding floodplains and wetlands, potential measures to minimize future damages when there is no opportunity to relocate are analyzed and described here. The 8-step evaluation process per NOAA Floodplain Guidance and the subsequent finding regarding practicable alternatives to the proposed location is also presented here. Public Notice of this action is included as part of the EA notices.

3.7.1 Regulatory Setting

Executive Order 11988

The 100-year floodplain is an area with a flood elevation that has a one percent chance of being equaled or exceeded each year. Although the name implies such a flood every 100 years, in reality, a 100-year flood could occur in any year. Executive Order (EO) 11988, Floodplain Management, dated May 24, 1977, requires that federal agencies locate facilities outside the 100-year or base floodplain unless there is no practicable alternative location. If locating outside the floodplain is unavoidable, structures should be built so that the finished floor elevation is above the 100-year flood elevation as determined by the FEMA and depicted on their Flood Insurance Rate Maps (FIRMs) or should be flood-resistant. Floodplain management is intended to minimize the potential for property damage and to maintain functions of

the hydrologic cycle. EO 11988 and NOAA Floodplain Guidance, Guidance on Compliance with the Implementing Procedures for Executive Orders 11988 and 11990, (2012) are applied to determine effects to these resources.

EO 11988, dated May 24, 1977, regulates new development within existing floodplains “to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains in carrying out its responsibilities.” Specifically, the EO outlines an eight-step process to first determine if a proposed federal project is in an existing floodplain and subsequent exploration of alternatives and mitigation if so. If the proposed project is not in an existing floodplain, then no additional action is required.

The eight steps include: 1) determining if the project is in a floodplain; 2) notifying the public; 3) identifying and evaluating practical location alternatives; 4) identifying potential impacts; 5) evaluating measures to reduce impacts; 6) reevaluating alternatives; 7) final determination of best alternative; and 8) implementing the proposed action. This EO applies to all NOAA facilities and NOAA has developed guidance on how to ensure compliance with EO 11988 (NOAA 2012).

3.7.2 Affected Resources

Per NOAA guidance, FEMA databases and maps were reviewed for floodplain determination. FEMA produces maps of floodplains for communities participating in the National Flood Insurance Program (NFIP). These maps display both coastal and riverine floodplains for the 1 percent annual chance (i.e., 100-year flood) and 0.2 percent annual chance (i.e., 500-year flood) events.

The Port of Gulfport is in Zone VE as reported on the FEMA’s FIRMs, Map Numbers 28047C0376G and 28047C0377G effective date June 16, 2009 (**Figure 3-1**), with a base flood elevation of 23 feet, referenced to North American Vertical Datum of 1988 (NAVD88). The Zone VE designation denotes areas of the Coastal Flood Zone with velocity hazard (wave action), with an established Base Flood Elevation (BFE). The proposed project is located within the 100-year floodplain but is not located within a floodway. Although the Port is within the 100-year floodplain, it is functionally isolated from the traditional floodplain areas north of U.S. Highway 90. The Port is located on the Mississippi Sound (surface area of approximately 470,000 acres) which is tidally influenced and affected more by tides and storm surge rather than floodwaters from riverine and watershed runoff. Because of the physical and hydrological characteristics of this portion of the Mississippi Sound, direct and indirect effects to floodplain areas outside the specific limits of this project are not anticipated. Pier height varies from 9.84 ft to 10.27 ft above MSSL, based on East Pier drawing and NOAA tidal datum information, and therefore does not always exceed the Storm Surge Protection level (10 ft – 15 ft above MLLW).

The OEF design includes building code-required and specialized hurricane resiliency features (e.g., 175 mph design windspeed, 1st floor level above Base and Design Flood elevations, elevated utility platforms/separate mechanical systems for upper floors, elevators without ground floor equipment rooms, and weather-lock vestibules, etc.) (NOAA/OMAO UxS EA 2020).

The OEF, now under construction, features several resilient features (e.g., elevated first floor and utility platforms, wind/flood resistant design, etc.). The under building, ground-level secure storage area may be subject to water intrusion at times depending on storm characteristics, therefore it is recommended that NOAA consider what equipment/materials might be stored in ground-level washout areas such as this and incorporate mitigation measures into the site hurricane preparedness plan. Of more concern in

and around Gulfport is flooding and inundation associated with hurricanes. NOAA National Storm Surge Hazard Maps50 (6/30/2020) indicate that even in Category 1 and 2 Hurricanes Gulfport and surrounding areas would be significantly impacted. Specifically, the POG property would be significantly impacted even during a Category 1 or 2 Hurricane.

Environmental hazards in the Gulfport region are dominated by hurricane impacts and associated inundation and high winds. The Gulf Region presents a high risk due to hurricanes. According to the NOAA National Hurricane Center (NHS), Gulfport and the surrounding area can be expected to be impacted by a hurricane approximately once every 11 years, and a major hurricane (winds =>96kts) every 23 years.



Figure 3-1. FEMA's National Flood Hazard Layer (NFHL) Viewer.

3.7.3 Environmental Consequences

In compliance with floodplain management requirements under 24 CFR 55.20, EO 11988 (Floodplain Management), and EO 11990 (Wetlands Protection), this EA documents FEMA's eight step process to ensure an evaluation of how the Proposed Action affects floodplains and/or wetlands.

The Port of Gulfport is zoned as VE (EL 31) which are areas subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action. However, EO 11988 requirements do not apply because the proposed action to lease and the associated minor construction projects would have no impact on potential flooding in the Project area, would not alter any elevations in the Project area, and would not be impacted by flooding any differently than the rest of the Project area.

The proposed shoreside support facilities must be situated near the new pier to support the functions of NOAA vessels; therefore, construction in the floodplain cannot be avoided, and there is no practicable alternative to the Proposed Action. The administration/storage building would be sited outside of the 100-year floodplain (elevation 14.0 feet). However, the pier, boat repair building, portions of the parking lot, and exterior storage area would be located within the limits of the 100-year floodplain. To reduce potential impacts from flooding, the inhabited floors of the OEF are designed 6 inches above BFE. To reduce potential impacts to the floodplain, stormwater would be managed to detain flows as close as possible to pre-development levels.

Step 1: *Determine whether the action is located in a 100-year floodplain (or a 500-year floodplain for critical actions) or wetland.*

The entire Project area is in the 100-year floodplain and high hazard area but the Project area includes no wetlands.

Step 2: *Notify the public for early review of the proposal and involve the affected and interested public in the decision-making process.*

Notification of review of the decision-making process is included in this EA. **A public notice describing the project was published in the Biloxi Sun Herald on November 28, 2022.**

Public comments received and responses to the comments are included Appendix A.

Step 3: *Identify and evaluate practicable alternatives.*

The Port of Gulfport is zoned as heavy industry within the 100-year floodplain, therefore, no alternatives are available in the Project Area. The proposed UMS Program would be headquartered in an existing building with associated pier facilities, which are required for NOAA research vessels, therefore, there is no practicable alternative.

Step 4: *Identify Potential Direct and Indirect Impacts of Associated with Floodplain Development.*

No adverse impacts are anticipated as a result of the Proposed Action occurring in the floodplain. Previous development activity has irretrievably altered the floodplain, reducing the beneficial aspects of the natural floodplain and its functions, permitted as part of the expansion of the Port of Gulfport (USACE 2017). The Proposed Action would not increase flood frequency or severity at the proposed project area or at downgradient or nearby locations. Therefore, with the incorporation of measures to

reduce potential impacts to the floodplain or impacts from potential flooding, no impacts are anticipated. The UMS Program will be based at the existing OEF and will therefore have no impact on the floodplain. NOAA vessels will be located at the east pier at the Port of Gulfport, which is designed for ships and cannot be located outside the floodplain. Only minor construction activities, including extension of additional utilities to the pier to support NOAA vessels, fencing along the existing piers, and a security gate, are planned.

Step 5: *Where practicable, design or modify the proposed action to minimize the potential adverse impacts to lives, property, and natural values within the floodplain and to restore, and preserve the values of the floodplain.*

The UMS program will be based in an existing structure and will therefore have no impact on the floodplain. The OEF office space is designed 6 inches above the BFE to reduce the potential for flooding. The Project area is an active port facility and provides limited floodplain value with respect to wetlands, vegetation, and other resources.

Step 6: *Reevaluate the Alternatives.*

The need for pier access for NOAA research vessels limits alternatives to the floodplain. The UMS Program will use an existing facility and will have no impacts on the floodplain. The existing OEF would have UMS Program space designed at 6 inches above BFE to reduce potential flooding.

Step 7: *Determination of No Practicable Alternative*

NOAA has determined that there is no practicable alternative for locating the project in a portion of the flood zone. This is due to: 1) NOAA research vessels must be located on the water and 2) proposed shoreside support facilities must be situated near the new pier to support the functions of NOAA vessels; therefore, construction in the floodplain cannot be avoided, and there is no practicable alternative to the Proposed Action.

This draft EA provides notice and explains the reasons the project must be located in the floodplain, describes alternatives considered at Steps 3 and 6 and describes all mitigation measures at Step 5 taken to minimize adverse impacts and preserve natural and beneficial floodplain values. The notice is attached to this document.

Step 8: *Implement the Proposed Action*

Language will be included in all agreements with participating parties to ensure no unnecessary impacts to the floodplain occur nor unnecessary risks are taken.

3.8 Biological Resources

Biological resources assessed in this section include fish and aquatic resources, essential fish habitat (EFH), submerged aquatic vegetation (SAV), birds, sea turtles, marine mammals. Terrestrial vegetation and wildlife were eliminated from further analysis due to the developed nature and industrial activity that characterize the Project area.

3.8.1 Regulatory Setting

Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA)

The MSFCMA governs protection of EFH. NMFS (also known as NOAA Fisheries) is responsible for protecting habitats important to federally managed marine species. Federal agencies must consult with NMFS concerning any action that may adversely affect EFH. EFH is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” 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” (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.

Within areas identified as EFH, Habitat Areas of Particular Concern (HAPC) may be designated 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 is based on ecological function, habitats sensitive to human-induced environmental degradation, stressors of development activities, and habitat rarity (Dobrzynski and Johnson, 2001). No HAPCs are designated in the Project area (USACE 2017).

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668c), enacted in 1940, and amended several times since then, prohibits anyone without a permit issued by the Secretary of the Interior from taking bald eagles, including their parts, nests, or eggs. The BGEPA is administered by USFWS. The act provides criminal penalties for persons who, "take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald eagle... [or any golden eagle], alive or dead, or any part, nest, or egg thereof." The act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703) is enforced by USFWS and prohibits “take” of migratory birds, their eggs, feathers, or nests. “Take” includes hunting, pursuing, wounding, killing, possessing, or transporting any migratory bird, nest, egg, or part thereof. The MBTA does not distinguish between intentional and unintentional take. Under the MBTA, takings are prohibited unless expressly authorized or exempted.

Endangered Species Act

The ESA (16 U.S.C. Section 1536) provides for the conservation of endangered and threatened species of fish, wildlife, and plants. The USFWS and NMFS implement the ESA and direct all federal agencies on the conservation of endangered and threatened species. Federal agencies must ensure that proposed actions do not jeopardize the continued existence of any endangered or threatened species or cause the destruction or adverse modification of their habitat. If listed species or designated critical habitat are

present and could be affected by the proposed action, a biological assessment must be prepared to analyze the potential effects of the proposed action on listed species and critical habitat and make a determination of effect.

Under provisions of Section 7(a)(2) of the ESA, a federal agency that carries out, permits, licenses, funds, or otherwise authorizes activities that may affect a listed species must consult with the USFWS and/or NMFS to ensure that its actions are not likely to jeopardize the continued existence of any listed species.

Marine Mammal Protection Act

All marine mammals are federally protected under the Marine Mammal Protection Act (MMPA) of 1972 (16 U.S.C. 1361 et seq.). USFWS and NMFS have regulatory authority for implementing the MMPA. With some exceptions, the MMPA prohibits the “take” of marine mammals—including harassment, hunting, capturing, collecting, or killing—in U.S. waters and by U.S. citizens on the high seas. Incidental take (e.g., unintentional take) may be authorized through a permit application process for nonfishing activities, including construction projects.

While state listed species and federally designated candidate species and SOCs were considered during project planning and addressed in this assessment, only those species identified by the USFWS and/or NMFS as threatened or endangered are afforded Federal protection under the ESA are considered here..

3.8.2 Affected Resources

The U.S. Fish and Wildlife Service (USFWS) and NMFS have identified 22 federally listed threatened and endangered species as potentially occurring in the study area as described in Section 3.19, but only 14 species have the potential to occur in the Project area (Table 3-3). Critical habitat has been designated in the study area for both the piping plover and the Gulf sturgeon.

The Mississippi Natural Heritage Program (MNHP) maintains a continuously updated inventory of plants and animals that are rare or imperiled at the state level. The database includes threatened and endangered species listed under the ESA, the Mississippi State Nongame and Endangered Species Act, and additional rare species not listed officially. A total of 80 species and subspecies of plants and animals were officially recognized as endangered in 2003 (MNHP, 2011), of which 27 species may possibly occur within the study area based on the updated database. The State status of each of the federally listed species is also provided in Table 3-3.

Aquatic Resources, Fish, and Essential Fish Habitat

The federally threatened Gulf sturgeon (*Acipenser oxyrinchus desotoi*) and associated critical habitat are present in the vicinity of the Project area (Table 3-3). The Gulf sturgeon was listed on September 30, 1991, by the USFWS, as a threatened species under the ESA (16 U.S.C. 1531 et seq.) (56 FR 49653). The 1991 listing identified other potential threats that included modifications to habitat associated with dredged material disposal, 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). There are 14 Designated Critical habitat units for the Gulf sturgeon, which is under the joint jurisdiction of the USFWS and NMFS. The NMFS has jurisdiction over the Gulf sturgeon for this Project based on the location of critical habitat units involving the Project within marine units.

The Project area is located in Gulf Sturgeon Critical Habitat Unit 8. Gulf sturgeon monitoring in the Mississippi Sound, between West and East Ship Islands, and around the Port of Gulfport, was undertaken from fall 2012 to fall 2014 (USACE 2017). Gulf sturgeon from each life stage category (adult, sub-adult, juvenile) were detected during the study; however, the adults, unexpectedly, had the greatest number of occurrences and detections. Juveniles and sub-adult 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 relatively low occurrence of detections of those two life history stages. Thus, adults have been documented in the vicinity of the Port of Gulfport during pre- and post-migratory periods. The data suggest that the habitat monitored as part of the study serves as a corridor for Gulf sturgeon between other habitat types, drainages, feeding zones, or is used as a pre-/post-migratory acclimation zone.

Table 3-3. Threatened and endangered species known to occur or potentially occur in the project area and critical habitat present in the project area. Includes species from USFWS (IPaC), NMFS marine mammals (ESA mapper and NOAA formal determination letter) and EFH resources (EFH mapper).

Common Name	Scientific Name	Federal Status ³	State Status ⁴	May Occur within Project Area
Marine Mammals				
West Indian Manatee	<i>Trichechus manatus</i>	T	E	N
Birds				
Eastern Black Rail	<i>Laterallus jamaicensis ssp. Jamaicensis</i>	T	-	N
Piping Plover	<i>Charadrius melodus</i>	T	E	Y
Red Knot	<i>Calidrus canutus rufa</i>	T	-	N
Wood Stork	<i>Mycteria americana</i>	T	E	N
Sea Turtles				
Hawksbill Sea Turtle	<i>Eretmochelys imbricata</i>	E	E	N
Kemp's Ridley Sea Turtle	<i>Lepidochelys kempii</i>	E	E	N
Leatherback Sea Turtle	<i>Dermochelys coriacea</i>	E	E	N
Loggerhead Sea Turtle	<i>Caretta caretta</i>	T	E	N
Green Sea Turtle	<i>Chelonia mydas</i>	T	E	N
Amphibians				
Dusky Gopher Frog	<i>Rana sevosia</i>	E	E	N
Fish				
Gulf Sturgeon	<i>Acipenser oxyrinchus desotoi</i>	T	E	Y

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

⁴LE = Listed Endangered.

⁵Critical Habitat for piping plover occurs on barrier islands and in certain areas of coastal counties.

The communities of fishes that occur in Mississippi Sound are inshore nekton, inshore demersal (bottom dwelling) resident, inshore demersal transient, offshore pelagic, and offshore demersal. The inshore demersal community is the most abundant (31 percent), followed by the inshore demersal resident community (25 percent); offshore demersal and pelagic communities both make up approximately 19 and 16 percent of the species composition, respectively. The dominant ecological groups inhabiting Mississippi Sound are drum, various flat fishes, and cusk eels. The most common species found in one survey of the Mississippi Sound were 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).

Mississippi remains a key coastal recreational fishery destination on the Gulf Coast. The most common species include Atlantic croaker, southern kingfish (*Menticirrhus americanus*), Gulf kingfish (*Menticirrhus littoralis*), sand seatrout (*Cynoscion arenarius*), 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 fishermen spent \$700,000 on fishing equipment and trips in 2009 (NMFS 2010).

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*) (USACE 2017). 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). Upland habitats as well as freshwater habitats that are not connected to tidal waters or are not tidally influenced were not considered EFH categories.

Submerged Aquatic Vegetation

SAV is a group of vascular plants that live underwater and range from marine seagrasses to freshwater angiosperms. Typically, SAV refers to coastal seagrass beds. Coastal seagrass beds are highly productive compared with 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). Mississippi coastal waters include three SAV community types: (1) barrier island seagrass, (2) widgeon-grass (*Ruppia maritima*) beds, and (3) American wildcelery (*Vallisneria americana*) beds (USACE 2017). Barrier island seagrass communities historically hosted four species of seagrasses: shoalgrass (*Halodule wrightii*), turtlegrass (*Thalassia testudinum*), clover grass (*Halophila engelmannia*), and manatee grass (*Syringodium filiforme*). Overall, the spatial extent of seagrasses has declined in Mississippi Sound over a 71-year period examined by Pham et al. 2014, ostensibly due to loss or reduction of protective island barriers and reductions in water quality. The seagrass landscape in the Mississippi Sound exhibited signs of area loss and

fragmentation as far back as the 1940-1950s through the 1970s. Recovery of seagrass occurred during the 1980s and 1990s, with the landscape exhibiting characteristics of a more contiguous and more vegetated condition throughout the early 2000s (USACE 2017).

Currently, SAV is sparse in the Mississippi Sound region and no seagrasses were reported within 5 miles of the Project area in 2016 (USACE 2017). SAV does not occur within the ship channel due to depth and turbidity.

Recreational and Commercial Fisheries

The main commercial species in Mississippi Sound are blue crab (*Callinectes sapidus*), southern flounder, Gulf menhaden (*Brevoortia patronus*), striped mullet (*Mugil cephalus*), eastern oyster (*Crassostrea virginica*), red snapper, brown shrimp (*Farfantepenaeus aztecus*), pink shrimp (*Farfantepenaeus duorarum*), and white shrimp (*Litopenaeus setiferus*). 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) of all Gulf states (USACE 2017). Mississippi is also a key coastal recreational fishery destination on the Gulf Coast. The most common species include Atlantic croaker, southern kingfish (*Menticirrhus americanus*), Gulf kingfish, sand seatrout, silver seatrout, spotted seatrout, sheepshead, red drum, red snapper, sharks, southern flounder, and striped mullet. The most popular recreational species are sand, silver, and spotted seatrout and Atlantic croaker.

Sea Turtles

There are three federally listed endangered sea turtles and two federally listed threatened sea turtles that may occur in the vicinity of the Project area (see Table 3-3). No habitat is available for sea turtle nesting in or near the Project area. The presence of sea turtles in proximity to the project area is unlikely due to their habitat preferences and the activity in the Port. The endangered Hawksbill (*Eretmochelys imbricate*) has been recorded in all of the Gulf states, although observations in Mississippi state coastal waters are very rare and it is unlikely to occur within the Project area. The endangered Kemp's ridley (*Lepidochelys kempii*) does not nest in Mississippi, but juveniles are regularly seen in both Mississippi Sound and around the barrier islands. The endangered leatherback (*Dermochelys coriacea*) has not been recorded to nest on Mississippi beaches or barrier islands. In Mississippi waters, the leatherback is observed sporadically.

The threatened green (*Chelonia mydas*) is not known to nest on the Mississippi coast or barrier islands, but may be attracted to seagrass beds as a food source in nearshore waters. While green sea turtles have not been documented in the study area, because of their migratory behavior they could possibly occur in the Project area. The threatened loggerhead (*Caretta caretta*) sea turtles nests along the Atlantic coast from Florida to as far north as New Jersey and sporadically along the Gulf Coast, including Mississippi. The loggerhead occasionally nests on Mississippi's offshore barrier islands. The loggerhead sea turtle is likely to pass through the study area but would not be a resident of Mississippi Sound.

Amphibian

The dusky gopher frog (*Rana sevosa*) is federally and State-listed as endangered with critical habitat and is known to occur in Harrison and Jackson counties (USFWS 2009). It is medium-sized, large-headed frog and is considered a Distinct Population Segment of the gopher frog (USFWS 2012b). Its range extends along the coastal plains region from the Florida Parishes of Louisiana to the Mobile River in Alabama

(MMNS 2001). In 2012, the USFWS designated a total of 6,477 acres as critical habitat for the dusky gopher frog spanning Louisiana's St. Tammany Parish and Mississippi's Forrest, Harrison, Jackson, and Perry counties (USFWS 2012) just outside the study area. Natural communities in these counties continue to be altered for agricultural, residential, and commercial purposes, most of which result in habitat fragmentation and/or habitat that is no longer suitable for the dusky gopher frog. Fire suppression of occupied habitat continues to be an ongoing concern (USFWS 2009). The dusky gopher frog is not likely to occur within the Project area.

Birds

The piping plover (*Charadrius melodus*) is federally listed as threatened with critical habitat and State-listed as endangered and known to occur in Hancock, Harrison, and Jackson counties (USFWS 2022). Critical habitat units in the study area include Mississippi units 02–06 (along the coast), 12 (Deer Island), and 14 (Cat, East Ship Island, and West Ship Island). Mississippi Unit MS-04 is directly west of Gulfport harbor and Unit MS-05 is directly east of the harbor. Piping plovers breed in the northern Great Plains of the U.S. and Canada, along beaches of the Great Lakes, and along the Atlantic coast. Following the breeding season, this species migrates to the southern U.S. Atlantic coastline, the Gulf coastline, and to scattered Caribbean islands. Thus, piping plovers are potential winter residents (November to March) and spring and fall migrants in the study area. This species can be found on ocean beaches or on sand or algal flats in protected bays, mostly on sandflats, sandy mudflats, and sandy beaches in areas of high habitat heterogeneity (USFWS 2015). Piping plover critical habitat is designated in the vicinity of the Project area but there is no suitable habitat for this species in the Project area and it is not anticipated to occur in or proximate to the Project area.

The eastern black rail (*Laterallus jamaicensis jamaicensis*) is designated as federally threatened. It is a secretive, wetland dependent bird requiring dense overhead vegetation cover and soils that are moist to saturated (occasionally dry) and interspersed with or adjacent to very shallow water (typically ≤ 3 cm) to support its resource needs (USFWS 2019). This species moves about in dense vegetation and nests are hidden from predators in salt, brackish, and freshwater marshes and plant structure is considered more important than plant species composition in predicting habitat suitability. There is no suitable habitat for this species in the Project area and it is not anticipated to occur in or proximate to the Project area.

The rufa red knot (*Calidris canutus rufa*) is listed as a federally threatened species (USFWS 2014). The 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 of Mexico, northern Brazil, and Tierra del Fuego at the southern tip of South America. Rufa red knots use specific key stopover areas in Mississippi during both the spring and fall migrations for resting and feeding and have been documented 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 2014). 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. There is no suitable habitat in the Project area to support this species.

The wood stork (*Mycteria americana*) was reclassified from endangered to threatened in 2014 based on documented population increase and breeding range expansion in the U.S. population (79 Fed. Reg. 37078 (June 30, 2014)). Wood storks use a wide variety of freshwater and estuarine wetlands for nesting, feeding, and roosting throughout their range, and generally select patches of medium to tall

trees as nesting sites either in standing water such as swamps, or on islands surrounded by relatively broad expanses of open water (USFWS 1996). Connectivity to the mainland is a hazard to the colony longevity and persistence. There is no suitable habitat in the Project area to support this species.

Marine Mammals

The West Indian manatee is a federally and State-listed endangered aquatic mammal protected under the Marine Mammal Protection Act of 1972 (16 USC Chapter 31 as amended). It 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). 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. Manatees are known to migrate through the study area, and in May 2011, two fishermen reported hooking a manatee around Katrina reef near Deer Island, just off the Mississippi coast (Raines 2011). According to USFWS (2013b), the manatee may potentially occur in coastal waters off of Hancock, Harrison, and Jackson counties; MMNS (2011) reports it only in coastal waters off of Harrison County. Thus, the West Indian manatee could occur within the Project area, but likely as a transient and not as a resident.

No whales are anticipated in the vicinity of the Project area due to depth. However, due to its recent discovery, Rice's whale (*Balaenoptera ricei*) in the northern Gulf of Mexico is addressed here. There are likely fewer than 100 individuals of this species remaining, making it one of the most endangered whales in the world. Rice's whale has been consistently located in the northeastern Gulf of Mexico, along the continental shelf break between 100 and about 400 meters depth, and is the only resident baleen whale in the Gulf of Mexico. In 2019, NOAA Fisheries listed the Gulf of Mexico Bryde's whale as an endangered subspecies under the Endangered Species Act. In 2021, NOAA Fisheries revised the common and scientific name of the listed entity to Rice's whale, *Balaenoptera ricei*, to reflect the new scientifically accepted taxonomy and nomenclature of the species. Like all marine mammals, the Rice's whale is also protected under the Marine Mammal Protection Act, and given its ESA listing, it is considered depleted under the Marine Mammal Protection Act. Discussion of this species is included per guidance from NMFS ESA consultation Karla Reece (pers. comm., 12 September 2022).

Invasive species in Ballast Water

Ballast water is loaded on empty ships to provide weight and stability while traveling from one port to the next. Invasive, exotic species have been introduced into U.S. waters through mishandling or mismanagement of ballast water and can adversely affect listed species and other native species. Consequently, it is described here. Ballast water is the largest single vector for nonindigenous species transfer. The U.S. Coast Guard (USCG), under the provisions of the National Invasive Species Act, has implemented a program that consists of a suite of mandatory ballast water management protocols. All vessels, foreign and domestic, equipped with ballast water tanks that operate within U.S. waters are required to comply with 33 CFR Part 51 regarding management protocols. The USCG issued a final rule for standards for living organisms in ships' ballast water discharged into waters of the United States, effective on June 21, 2012 (77 Fed. Reg. 17254) .

3.8.3 Environmental Consequences

The Proposed Action does not include any in-water works and there will be no loss of open-water habitat or permanent conversion of open water habitat to land. In water activities will be limited to NOAA research vessels transiting to and from the Port. Therefore, no impacts to EFH or fisheries, fish

(including Gulf sturgeon), or marine mammals are anticipated. There is no suitable habitat for listed bird species in the Project area, therefore no effects to these species are anticipated. The dusky gopher frog is also absent from the Project area.

The small increase of vessel traffic due to NOAA research vessels and six small boats could have minor, temporary impacts due to noise of the vessels, temporary turbidity as vessels arrive and depart from port, and there is a potential for pollution from spills to impact aquatic resources. There will be no temporary or permanent degradation of critical habitat, no loss of habitat, and no temporary or permanent impacts from construction activities.

This is an active port with regular vessel traffic and the number of vessels is well within the anticipated traffic under the permitted Port of Gulfport Expansion (USACE 2017). The Port of Gulfport reports an average of more than 600 vessels annually as well as more than 2 million tons of cargo (Port of Gulfport <https://shipmspa.com/doing-business/business/>). In 2020, the volume of cargo through the Port was reported as 137,537 TEUs, down from 156,241 in 2019 and 159,151 in 2018 (Bureau of Transportation Statistics 2022, <https://explore.dot.gov/views/PortProfiles2020/ProfileDashboard?%3Aembed=y&%3AisGuestRedirectFromVizportal=y>). This represents a total of 229 vessel trips in 2020, compared with the reported 480 vessel trips projected in the analysis for the Port of Gulfport Expansion Project EIS (USACE 2017) for baseline conditions prior to the Port expansion and 1,750 trips projected for 2060. The total number of missions per NOAA vessel is an estimated 13 and the total departures and arrivals would be 26 per vessel (Table 1-3). Therefore, the addition of the two research vessels is well within the 2017 projections. In addition, no Aids to Navigation (ATON) would be affected by the Proposed Action.

NOAA vessels may engage in several cruises/surveys a year. Use of the Port by two NOAA research vessels and six support ships would increase present vessel traffic by two ships. The total number of missions per NOAA vessel is an estimated 13 and the total departures and arrivals would be 26 per vessel (Table 1-3). Therefore, increases in vessel traffic to and from Gulfport and associated noise would be minimal compared with the 2,876 total projected number of vessel trips projected in 2060.

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 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 navigation channels beyond the Project area, however, such disturbances are anticipated to be rare due to the depth and width of the channel.

Only minor construction activities would occur under the Proposed Action, including expansion of utilities along the pier to support NOAA research vessels, installation of a chain link fence along the pier, and installation of a security gate.

Potential impacts to aquatic habitats (e.g., SAV), EFH and fish, marine mammals, birds, and sea turtles, due to NOAA vessel activities are addressed as part of the Draft Programmatic Environmental Assessment for Vessel Operations (NOAA 2022). The EA addressed vessel activities across the globe and that would likely be greater and more expansive than those anticipated at the Port of Gulfport and concluded that impacts would be short term, temporary, and potentially adverse and range from minor

to insignificant due to the potential for spills (negligible to minor), trash and debris (negligible), and vessel strike (minor to insignificant).

NOAA Fisheries (NMFS) applies regulatory requirements and management practices to reduce the risk of vessel strikes from NOAA vessels, especially in areas with heavy vessel traffic. NOAA vessel protocols and Port of Gulfport mandatory BMPS will be implemented and will avoid and minimize any potential for vessel strikes from NOAA research vessels transiting in or out of the Port and will avoid and minimize the potential for contamination from spills. The Port of Gulfport Expansion Project (USACE 2017) also includes BMPs that the Port must follow to avoid and minimize the opportunities for vessel strikes to marine mammals, sea turtles, and sturgeon, and avoid potential hazardous waste accidents.

Vessel traffic in the Port, and presumably the Gulf and surrounding Mississippi Sound channels, is projected to increase in the future with or without completion of the proposed Project due to past, present, and reasonably foreseeable future projects. Therefore, under the No Action Alternative, impacts are expected to be similar to the Proposed Action. 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

3.9 Land Use and Recreation

3.9.1 Regulatory Setting

The Port is zoned as an I-2 Heavy Industrial District within the City of Gulfport Code of Ordinances (Municode 2013). This industrial district allows for heavy manufacturing and related activities and requires access to existing and future arterial thoroughfares, highways, railway lines, and waterways. As the heaviest industrial zoning classification within the City of Gulfport, this I-2 District is consistent with Port operations. The City of Gulfport Government administers land uses with three approved codes and plans: the City of Gulfport Code of Ordinances, the Old Gulfport Community Plan, and the Mississippi City Community Plan (USACE 2017). These community plans establish the uses, densities, and intensities of land uses within their respective boundaries, while the Zoning Code applies to areas of the city outside of the planning district's boundaries.

National, state, and regional recreational resources incorporate established parks, hiking trails, camping, boating and touring facilities potentially affected by the proposed action. Local recreational resources may include city, county and tribal owned facilities and properties, or locations informally established for recreational activities.

3.9.2 Affected Resources

Land Use. The Port of Gulfport is an existing commercial port facility with intermodal land transportation facilities (road and rail) interconnections for the distribution of cargoes to inland destinations. The federal navigation channel is maintained at a depth of 36 feet and 300-foot width in Mississippi Sound to allow navigational access for oceangoing commercial vessels. The south harbor and

turning basin in the vicinity at the Port are also maintained at a depth of 36 feet. Industrial facilities at the Port include berths with container and bulk material unloading systems, covered storage, open container bulk storage, and an on/off ramp for wheeled cargoes. Land access to the Port is available for truck and rail transport. Truck access to and from I-10 is routed along US 49 through the City of Gulfport. Rail access to the Port is provided by a north-south rail line paralleling 27th Avenue.

The City of Gulfport land uses are consistent with the urban development and residential subdivisions that extend along the Gulf Coast within the City of Biloxi to the east, and Long Beach and Pass Christian to the west. The Mississippi coast recreational beaches extend nearly unbroken between Pass Christian and Biloxi. The Port and the associated Gulfport Small Craft Harbor are centrally located along this stretch of public beaches.

Recreation. Recreational boating along the Gulf Coast is a popular pursuit with over 54,700 registered recreational watercraft in the three-county region. Harrison County, which includes the City of Gulfport, has a total of 497 registered recreational boats (of a total of 906 boats) (BoatInfo 2017). The Gulfport Small Craft Harbor (Bert Jones Yacht Harbor) is located east of and adjoining the East Pier. This harbor includes a recreational boating marina, the Gulfport Yacht Club, and USCG Station Gulfport. The outer breakwater for the harbor includes a sheltered recreational beach and fishing piers. Small craft access to this inner harbor is via the yacht basin channel, which is segregated from the Port by breakwaters. A commercial small craft harbor on the western side of the Port was designed to accommodate a commercial shrimp fleet with 7 to 9 piers, berths for 40 to 60 shrimp boats, seafood markets, and limited fuel facilities. 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.

3.9.3 Environmental Consequences

The establishment of the UMS Program at the OEF at the Port of Gulfport is consistent with existing uses in the area and the industrial land uses of the greater Gulfport metropolitan area. No major changes in land use to, or adjacent to, the Port of Gulfport, are anticipated as a result of the Proposed Action. Vessel traffic is not anticipated to increase development or result in secondary or ancillary industries such as shipping-related support industries, transportation centers, or distribution Storages in the area since it is limited to OMAO operations.

The Proposed Action would have little to no impact on recreation. Recreational vessels do not use the east pier and would continue to have access to the small boat harbor. Smaller NOAA vessels would have designated use of the boat harbor under NOAA's lease just as any other lessee would in the absence of NOAA. Impacts to aesthetics would be negligible because other vessels are anticipated to use the east pier if NOAA vessels do not. Some delays could be encountered by recreational boaters using the Gulfport Yacht Club and Gulfport Small Craft Harbor or the Commercial Small Craft Harbor immediately adjacent to the Port while yielding to larger ships transiting the federal navigation channel. However, these delays are not expected to be excessive, given the number of ships expected at the Port in a given day.

3.10 Utilities and Public Services

The Port of Gulfport is within the City of Gulfport in Harrison County, where a variety of entities provide electric, natural gas, water, sewer, telecommunications, and solid-waste disposal services.

3.10.1 Regulatory Setting

There are no directly applicable federal regulations pertaining to effects of federal actions on local utilities and public services (i.e., solid waste disposal). Regulatory constraints related to the existing capacity and distribution of utility services is typically considered through local zoning or land use law. While the federal government is not required to follow local regulations under the Public Building Amendments of 1988 (Public Law 100-678), they strive to assess potential effects of projects and conform to local requirements to the extent practicable. This assessment considers the apparent capacity of utility services and the effects of extending those services to the project area.

3.10.2 Affected Resources

Utilities

Utility services to the Port facilities include water supply, wastewater collection and treatment, telephone, fiber optic service, natural gas, and electricity, which would all need to be expanded along the East Pier terminal to accommodate NOAA vessels. The Project Area is part of the Gulfport metropolitan area, and the proposed expansion would have no major short- or long-term impacts on service levels within the metropolitan area.

Electrical power for the State of Mississippi, including the Gulf coast, is provided by Mississippi Power, a subsidiary of Southern Company. Natural gas service in the Project Area is provided by CenterPoint Energy, Inc., headquartered in Houston, Texas. The Harrison County Utility Authority (HCUA), a public entity created by the Mississippi Legislature, provides public water, sanitary sewer, and stormwater services to Harrison County. Operation of this system is directed by the HCUA under the provisions of the Mississippi Gulf Region Water and Wastewater Plan (MDEQ 2007).

Wastewater from the Port is treated at the Gulfport South Wastewater Treatment Facility, operated by the Harrison County Utility Authority, with ample capacity for additional wastewater (USACE 2017). Wastewater from the City of Gulfport, including the Port, is treated at the Gulfport South Wastewater Treatment Plant, a secondary treatment facility with advanced effluent disinfection. Following treatment, effluent is discharged to Gulfport Lake (USACE 2017). All of the wastewater treatment facilities in and around the Port of Gulfport meet or exceed EPA Region IV treatment standards and have sufficient capacity to accommodate increased flows as the region's population increases (HCUA, 2011b). Discharges of pollutants or special waste, such as oily waste from marine vessels, are required to comply with the USCG requirements (33 CFR 158). This CFR requires pretreatment prior to discharging wastewaters to regional or municipal facilities.

Potable water service and expanded sewer disposal infrastructure will be provided on site and extended to berthing stations and adjacent connections with local service providers. Potable water for Harrison County is supplied from 34 groundwater wells tapping the Mississippi Embayment Aquifer system. These wells produce 28.5 mgd, which is treated and distributed through an interconnected network of

treatment plant, transmission lines, and storage tanks (USACE 2017). Bilge water would be separated from oily waste and stored on board in a tank until it could be pumped on shore to a truck for disposal.

Solid waste collection within the study area is provided by private solid waste companies, under contract with the municipalities or HCUA. The Port also contracts with private solid waste transport firms to remove waste from Port property. Disposal of waste is accommodated at landfills managed by the HCUA. The HCUA also provides stormwater management services. Stormwater priorities of the HCUA are areas of localized flooding and the protection of infrastructure from storm damage (HCUA 2011d).

Public Services

Health, police, firefighting, emergency, and social services are available to the Port of Gulfport, including the OEF and the piers. Fire and emergency medical services are provided by local municipalities and Harrison County. The local fire departments maintain a mutual-aid policy and provide fire and emergency medical support to other departments upon request. The City of Gulfport Fire 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.

Since November 2015, the Port of Gulfport has been designated a Strategic Seaport by the Department of Defense (DoD), in conjunction with the Department of Transportation (DOT) Maritime Administration. U.S. ports are designated as Strategic Seaports based on their location and proximity to DoD installations and efficient transportation infrastructure. The Port of Gulfport is one of 17 commercial ports designated as Strategic Seaports. The Port's responsibilities as a Strategic Seaport include ensuring specific facilities needed to conduct a military deployment are available to the military within 48 hours of written notification. The Port is required to have 28 acres and two berths available to DoD when needed.

The Mississippi State Port Authority (MSPA) works in cooperation with the Gulfport Police Department and the U.S. Department of Homeland Security to implement safety and security programs for the Port. Security functions are maintained on MSPA premises through a 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 (USACE 2017). Security services and infrastructure would consist of installation of perimeter security fencing and addition of a security gate, use of electronic Common Access Card reader at the entry gate, and prearranged access for visitors and vendors.

As an international transportation facility, the Port is supported by the U.S. Customs and Border Protection and the U.S. 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 to access the Port facilities and maintain current transportation workers identification cards (USACE 2017). The border patrol is authorized to enforce provisions of the customs and navigational laws of the U.S. under Sec. 19 CFR 101.1. The border patrol is also authorized to inspect and accept entering merchandise and collect duties on imports received at the Port (USACE 2017). The USCG

provides security to the Port under the Ports, Waterways, and Coastal Security provisions of the Homeland Security Act of 2002 and also enforces safety and security provisions for vessels operating in waters of the U.S. (USACE 2017).

Law enforcement is provided by the county sheriff and municipal police departments. The Harrison County Sheriff's Department provides protective services to unincorporated portions of the county, which includes portions of the study area. The City of Gulfport Police Department provides public safety service to the incorporated areas of the city, including the Port (USACE 2017).

3.10.3 Environmental Consequences

The Project area is serviced by local utilities. Water, sewer, and electricity services are all present at the subject property. Under the Proposed Action, services will be expanded along the pier to support NOAA activities. Utility services would be extended to on-site structures and to berthing stations at the east vessel pier and small craft dock. At the OEF, elevated utility platforms would protect facilities from storm surge. The utility services required to include the east pier and the OEF are within the capacity of local and regional providers and are therefore not expected to have significant impacts on service levels in the City of Gulfport or the surrounding service area.

3.11 Transportation

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 of Gulfport and private freight rail lines.

3.11.1 Regulatory Setting

The MDOT, like other state DOTs, is responsible for the planning, design, construction, and operations and maintenance transportation projects across all travel modes. They allocate resources from various Federal-aid programs, integrate Title VI of the Civil Rights Act of 1964 and environmental justice into their activities, and ensure that State Transportation Improvement Program (STIP) findings of statewide planning compliance and NEPA activities satisfy the letter and intent of Title VI of the Civil Rights Act of 1964 requirements and environmental justice principles. MDOT uses established traffic engineering and roadway design principles designed to ensure access by: (1) limiting the number of conflict points; (2) separating conflict points; (3) reducing acceleration and deceleration impacts at access points; (4) removing turning vehicles from through travel lanes; (5) spacing major intersections uniformly to facilitate progressive travel speeds along arterials; and (6) providing adequate site storage.

3.11.2 Affected Resources

The City of Gulfport, Gulf Regional Planning Commission (GRPC), and MDOT do not have thresholds for addressing impacts of new traffic generated by development. However, traffic and road capacity are assessed using a qualitative performance rating for Level of Service (LOS). There are six LOS ratings from A (uncongested, light traffic volumes) to F (traffic volume exceeds capacity). LOS D is widely considered the threshold for the least acceptable LOS tolerated in urban areas. A previous analysis of traffic LOS for the City of Gulfport (USACE 2017) modeled LOS for 2020 and 2060 concluded that potential impacts to traffic under 2060 forecast scenarios for the PGEP (USACE 2017) would be essentially the same as if there were no project, primarily due to the timing and distribution of trips, which did not significantly

impact traffic peaks. The analysis included an evaluation of 2040 and 2060 traffic levels based on extrapolation of GRPC travel demand growth trends to 2035.

3.11.3 Environmental Consequences

Minor, long-term increases in traffic would occur as a result of NOAA personnel commuting to the proposed project areas. Impacts would be greatest during commuting hours; Monday through Friday, 7 AM to 9 PM and 3 PM to 5 PM, however only 11 personnel are expected to be traveling and at least some would be telecommuting.

The Port of Gulfport is an established industrial facility with the capacity to handle the small increase in traffic for personnel arriving at the NOAA facilities and vessels homeport at the proposed property. A negligible impact to transportation resources is expected.

3.12 Socioeconomics and Environmental Justice

This section presents a summary of economic and demographic characteristics of the Project area with respect to potential impacts to disadvantaged populations in the Project area.

3.12.1 Regulatory Setting

The CEQ Regulations for Implementing NEPA provide guidance related to social and economic impact assessments including “the natural and physical environment and the relationship of people with that environment” (40 CFR 1508.14). According to the CEQ’s environmental justice guidelines, minority and low-income populations should be identified where either: a) the minority or low-income population of the affected area exceeds 50 percent; or b) the minority or low-income population percentage of the affected area is meaningfully greater than the minority or low-income population percentage in the general population or other appropriate unit of geographic analysis.

EO 12898 (1994), the *Federal Environmental Justice Policy*, requires all federal agencies to identify and develop strategies to address disproportionately high and adverse human health and environmental impacts of its programs, policies, and activities on minority and low-income populations (collectively known as environmental justice populations) in the U.S. and its territories to the greatest extent practicable and permitted by law. The EO is intended to promote nondiscrimination in federal programs and provide minorities and low-income populations with access to information and public participation.

Executive Order 14008 (2021) on *Tackling the Climate Crisis at Home and Abroad* directs CEQ to create a Climate and Economic Justice Screening Tool to help federal agencies identify disadvantaged communities that are marginalized, underserved, and overburdened by pollution. The current version of the tool provides socioeconomic, environmental, and climate information to inform decisions that may affect these communities. The tool identifies disadvantaged communities through publicly available, nationally consistent datasets (<https://screeningtool.geoplatform.gov/en/#10.63/30.4202/-89.069>) and was used in this analysis to evaluate whether the Proposed Action would have a disproportionate impact on disadvantaged groups of people or children.

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, recognizes that children may suffer disproportionately from environmental health risks and safety risks. These risks arise because children’s bodily systems are not fully developed; children eat, drink, and breathe more in proportion to their body weight, and their behavior patterns may make them more

susceptible to accidents. Federal agencies are required to make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children.

3.12.2 Affected Resources

The economy of Harrison County and surrounding areas relies on manufacturing, military installations, tourism, public administration, healthcare, and education (MDES 2015). Of the 15 top employers listed for Harrison County, five are located in Gulfport. Of these five, the leading employer is RPM Pizza (the largest Domino's Pizza franchise in the U.S.), followed by Memorial Hospital and the Naval Construction Battalion Center. The largest employer for Harrison County in Biloxi is the Beau Rivage Casino. The leading employers for the study area counties are hospitality (Beau Rivage, Silver Slipper, Hollywood Casino), government, military- related (Stennis Space Center, Naval Oceanographic Office, Pratt and Whitney), or healthcare (Singing River Hospital System, Memorial Hospital, Hancock Medical Center).

Table 3-4. U.S. Census Bureau Statistics for Gulfport, Mississippi, Accessed 21 August 2022.
(<https://www.census.gov/quickfacts/fact/table/gulfportcitymississippi/IPE120220#IPE120220>).

Statistic	Number or Percent
Population Estimates, July 1 2021	72,105
Population estimates base, April 1, 2020	72,961
Population, percent change - April 1, 2020 (estimates base) to July 1, 2021	-1.20%
Persons under 5 years, percent	7.10%
Persons under 18 years, percent	24.00%
Persons 65 years and over, percent	14.00%
Female persons, percent	51.90%
White alone, percent	54.00%
Black or African American alone, percent	38.10%
Hispanic or Latino, percent	5.80%
Other and/or mixed	6.30%
Veterans, 2016-2020	7,668
Owner-occupied housing unit rate, 2016-2020	50.80%
Median value of owner-occupied housing units, 2016-2020	\$132,700
Median gross rent, 2016-2020	\$887
Households, 2016-2020	28,193
Persons per household, 2016-2020	2.48
Living in same house 1 year ago, percent of persons age 1 year+, 2016-2020	77.50%
Language other than English spoken at home, percent of persons age 5 years+, 2016-2020	6.3%
Households with a computer, percent, 2016-2020	87.90%
Households with a broadband Internet subscription, percent, 2016-2020	79.70%
High school graduate or higher, percent of persons age 25 years+, 2016-2020	88.30%
Bachelor's degree or higher, percent of persons age 25 years+, 2016-2020	23.30%
With a disability, under age 65 years, percent, 2016-2020	12.20%
Persons without health insurance, under age 65 years, percent	20.30%
In civilian labor force, total, percent of population age 16 years+, 2016-2020	59.60%

Statistic	Number or Percent
In civilian labor force, female, percent of population age 16 years+, 2016-2020	58.00%
Total retail sales, 2017 (\$1,000) (c.)	1,589,224
Mean travel time to work (minutes), workers age 16 years+, 2016-2020	21.2
Median household income (in 2020 dollars), 2016-2020	\$40,554
Per capita income in past 12 months (in 2020 dollars), 2016-2020	\$23,907
Persons in poverty, percent	23.70%
All employer firms, Reference year 2017	1,501
Men-owned employer firms, Reference year 2017	870
Women-owned employer firms, Reference year 2017	173
Minority-owned employer firms, Reference year 2017	116
Population per square mile, 2020	1,310.90
Population per square mile, 2010	1,219.50

Population projections from the Center for Policy Research and Planning at the Mississippi Institutions of Higher Learning (MIHL 2012) predict moderate growth in area counties in the coming 10 years. Between 2010 and 2025, Hancock County's population is predicted to increase by 16.2 percent, Harrison County's by 17.1 percent, and Jackson County's by 11.9 percent. The state's population is expected to increase by 8.8 percent. Census Bureau statistics for Gulfport, Mississippi are listed in Table 3-4 and summarize demographics, housing, education, and employment.

EPA's EJScreen was used to evaluate potential areas of disproportionate environmental impacts from the Proposed Action, i.e., potential environmental issues that occur in, for example, low-income areas or neighborhoods characterized by people of color where resources may be more limited than in more affluent areas. All of the EJScreen indicators are publicly available data and simply provide a way to display the data and combine environmental and demographic indicators into EJ indexes. EJScreen allows users to access high-resolution environmental and demographic information for locations in the U.S., and compare their selected locations to the rest of the state, EPA region, or the nation.

The Port of Gulfport is within EPA Blockgroup 280470038001. An EJScreen report was generated for the 12 environmental justice variables, all of which represent a combination of environmental factors and demographic information. The EJ values are reported as percentiles in the block group compared to the state, regional, and national averages. Nearly all EJ values for the block group were the same or lower than those for the U.S. and the State of Mississippi. Two exceptions were noted.

The Superfund Proximity (site count/km distance) value (0.12) that was greater than the state value (0.064), the EPA region (0.083), but not the U.S. average (0.13) was notable and placed the Port in the 89th percentile statewide and 72nd percentile nationwide, indicating risk (greater than 50th percentile). This is due to the Chemfax Superfund site in Gulfport, on the west side of Three Rivers Road, about 5 miles east of the Port of Gulfport (greater detail was provided in Section 3.4 Hazardous Materials).

Traffic proximity (daily traffic count/distance to road) for the census block is 93rd percentile in the state and 68th in the nation, i.e., higher than 50 percent of the nation. However, the entire census block is along U.S. Highway 90 and there are no residential homes within a mile radius of the Port itself. Therefore, no significant environmental justice impacts are anticipated.

The Port of Gulfport is in census tract 28047001400 (**Figure 3-2**), which includes the area south of East Railroad Street and east to Deburys Road. Census tract 28047003800 is proximate to the Port of Gulfport and includes the areas south of East Railroad Street, but west of the Port to Rich Avenue. Neither of these census tracts is designated as disadvantaged with respect to climate change, clean energy and transit, sustainable housing, clean water/wastewater/ infrastructure, health burdens or workforce development. The Port of Gulfport census tract has a population of 1,829; the adjacent tract to the west has a population of 1,210; about 7 percent of the population of Gulfport aged 25 years or older do not have a high school diploma and 53 percent of people are unemployed. About 56 percent of low-income households spend more than 30 percent of their income on housing and 98 percent are expected to have a loss in building value from natural hazards each year.

Outside of, but proximate to the Project area, the census tracts shift to designations of disadvantaged in five categories based on whether the census tract exceeds thresholds for environmental or climate indicators and socioeconomic indicators. For example, north of Railroad Street, census tract 28047002600 has a population of 3,977 and is designated as disadvantaged in all five categories.

- 96 percent of the population 15 or older are not enrolled in college or university;
- 77 percent of fatalities and injuries result from natural hazards each year;
- >96 percent of households have an income less than or equal to 2x the federal poverty level;
- >95 percent of the census tract is made up of low-income households spending more than 30 percent of income on housing;
- 92 percent of census tract population are in households where the household income is at or below 100 percent of the Federal poverty level;
- Census tract is in the 97th percentile for the number of unemployed people as a percentage of the labor force; and
- 98 percent have a low life expectancy.

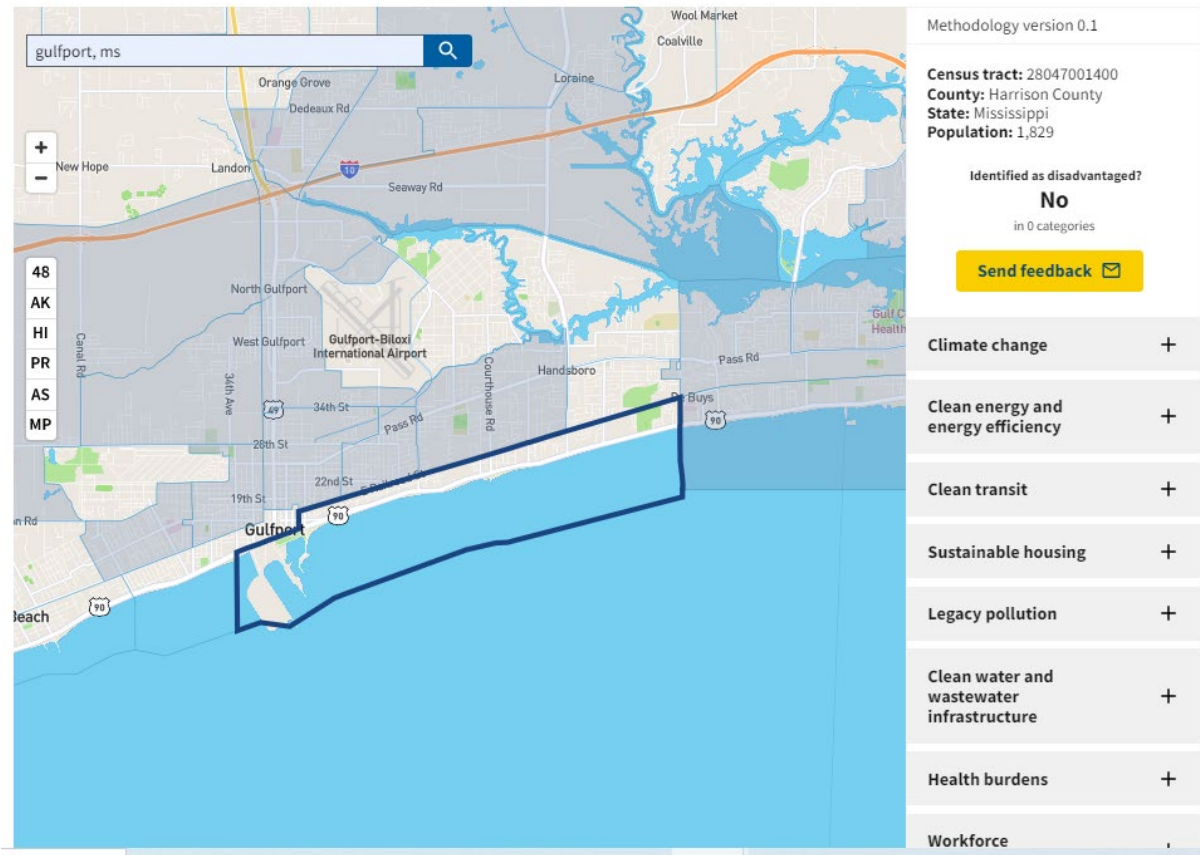


Figure 3-2. Source: Climate and Economic Justice Screening Tool (CEJST), accessed 21 August 2022. Note that shaded areas in the map are identified as disadvantaged.

The proportion of children in the Gulfport Census Tracts (Table 3-5) is below the percent average for the State of Mississippi and Harrison County (U.S. Census Bureau 2021). The proportion of children is less than 10 percent. Examples of potential risks to children include increased traffic volumes and industrial or production-oriented activities that would generate substances or pollutants children may ingest or come in contact with. Based on census bureau numbers, here are no disproportionately large populations of children in the vicinity of the Project area.

Table 3-5. Number of Children Under the Age of 18 in the State of Mississippi, Harrison County, the City of Gulfport, and the Port of Gulfport Census Tracts (U.S. Census Bureau 2021).

Location	Population	Population Under 18	Percent Under 18
Mississippi	2,949,965	752,241	25.5
Harrison County	209,396	49,626	23.7
Gulfport	11,709	995	8.5

3.12.3 Environmental Consequences

The EJ values reported for the Port of Gulfport do not indicate any populations that are above the national average for environmental justice risk. Therefore, no adverse environmental impacts to EJ communities are anticipated as a result of the Proposed Action. Additional employment available to non-professionals under the Proposed Action is unlikely.

Census blocks to the north of Gulfport are designated as disadvantaged. Under the Proposed Action, vehicle and air emissions would increase slightly, but negligibly. Under the No Action Alternative, the same conditions are anticipated since the lease of the OEF building and use of the piers by other tenants is expected. Minor to negligible increases in the potential for temporary or long-term employment would also be expected.

3.13 Visual Resources

3.13.1 Regulatory Setting

While NEPA does not establish particular guidance for determining the significance of visual/aesthetic resources impacts, in 43 U.S.C. Section 4331(b)(2), it requires measures be taken to assure that esthetically pleasing surroundings are available for all Americans (US Senate 2002).

3.13.2 Affected Resources

The Port of Gulfport is immediately south of the City of Gulfport urban center, where the view from commercial and institutional land uses is the industrial Port and the ships that frequent the terminals. The Port includes approximately 110 acres of open storage space and 400,000 sf of covered Storage space (Port of Gulfport 2015). The tallest structures are the three rail mounted gantry cranes used to lift containers that can reach well over 100 feet and lift cargo to over 170 feet (MSPA 2014). Like the other structures at the Port (e.g., light towers, existing cranes, and silos), the cranes are illuminated at night.

The Port has been in operation since 1902. It has been continuously upgraded and is currently an active commercial Port facility adjacent to both commercial land uses within the City of Gulfport and open recreational beaches of the Mississippi Sound. As a heavy industrial land use, the Port is highly visible along the coast and has an aesthetic impact on the recreational beaches. However, the Port has been in continuous operation for over 100 years, and residents and visitors have become accustomed to the visual impact and intensity of Port operations.

3.13.3 Environmental Consequences

The lack of buffers between the industrial and commercial land uses means Port facilities and operations can be viewed as an aesthetic impact. However, the Port has been in continuous operation for over 100 years (since 1902), and residents and visitors are accustomed to the visual impact and intensity of Port operations. No impacts to visual resources would occur due to the Proposed Action.

3.14 Cultural and Historic Resources

3.14.1 Regulatory Setting

The term “cultural resources” is used to describe archaeological sites that are evidence of past human use of the landscape; the built environment, represented by structures such as dams, roadways, and buildings; and traditional resources, such as sacred sites and traditional cultural properties. The National Historic Preservation Act (NHPA) of 1966 is the primary federal legislation that outlines the federal

government's responsibility to consider cultural resources. Other applicable cultural resources laws and regulations that could apply include the Native American Graves Protection and Repatriation Act and the Archaeological Resources Protection Act.

Section 110 of the NHPA sets out the broad historic preservation responsibilities of federal agencies and is intended to ensure that historic preservation is fully integrated into the ongoing programs of all federal agencies. Section 106 of the NHPA requires the federal government to consider the effects of a project on historic properties and the Section 106 process is outlined in 36 CFR, Part 800. Impacts to these resources require consultation with the State Historic Preservation Office (SHPO).

3.14.2 Affected Resources

Potentially present cultural and historic resources for the Project area are based on the results of the review performed for the PGEP (USACE 2017), which included evaluations for both terrestrial and submerged resources at or near the Port of Gulfport. es the Project area. The PGEP review identified three previous remote sensing investigations from 1917, 1968, and 2007. The earliest survey (H04000) was conducted from the Port to Chandeleur Island in 1917. The next hydrographic survey (H08925) was conducted of the Port and its approaches (Patrick and Gildea 1968). Finally, Burke et al. (2007) conducted a survey of the Mississippi Sound from Long Beach to Biloxi, including the Project area. In addition, the Mississippi Department of Archives and History (MDAH) was contacted for the PGEP with respect to reported cultural resources in the NRHP and the likelihood of construction activities to impact cultural and historic resources in the Project area. The MDAH Historic Resources Inventory Map was reviewed for documented cultural and historic resources in the Project area (**Figure 3-3**). No such designations occur in the Project area or at the Port of Gulfport. Much of the area on the north side of Highway 90 is designated National Historic District, and National Register Individual Properties and Preservation Easements are scattered throughout the City of Gulfport.

3.14.3 Environmental Consequences

Based on previously completed surveys and reviews (USACE 2017) and recent reviews of the MDAH Historic Resources Inventory, there are no recorded sites in the NRHP in the Project area and the probability for unrecorded site is low. Therefore, no impacts to terrestrial or submerged cultural or historic resources are anticipated under the Proposed Action.

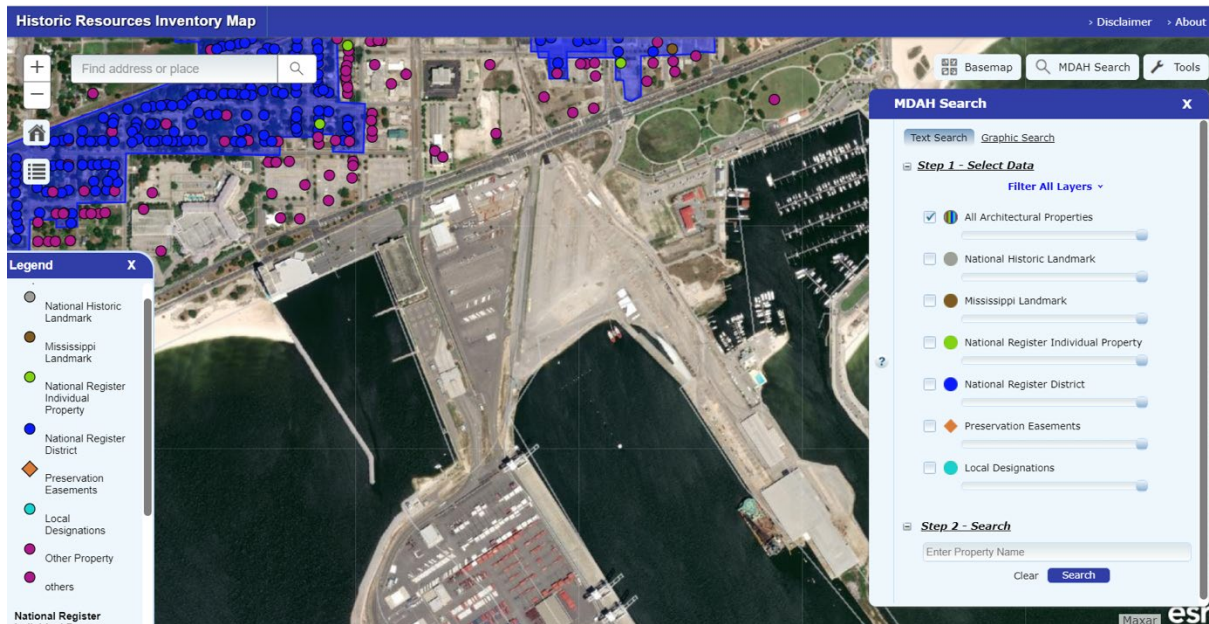


Figure 3-3. Historic Resources Inventory Map of the Port of Gulfport, inclusive of the Project Area and Immediately Adjacent Vicinity.

4.0 Cumulative Impacts

Cumulative impacts are defined by the Council on Environmental Quality (CEQ) regulations in 40 Code of Federal Regulations (CFR) 1508.7 as 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 regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.”

The proposed modifications to the existing OEF and pier under the Proposed Action will have no significant impacts on the resources analyzed in this EA because activities are limited to expansion of utilities along an existing pier and to existing buildings, and the addition of security fencing and security gate. Because of the size and nature of the Proposed Action, foreseeable future projects that, in combination with the Proposed Action, may result in cumulative impacts, include localized Port projects.

Projects that are ongoing or anticipated at the Port and the potential for cumulative impacts when combined with the Proposed Action (if any) are summarized below. Just as for individual resources discussed in previous sections, in the absence of the Proposed Action, an alternative lessee is anticipated to lease the OEF and pier space, resulting in the same or possibly greater cumulative impacts.

- Completion of the Roger F. Wicker Center for Ocean Enterprise Facility (OEF) in 2022 and the anticipated maritime technological growth to support collaboration among research scientists, federal agencies, industry partners, and entrepreneurs in “developing the region as a global leader in ocean- and maritime-related technologies” (USM October 2022). The Proposed Action would result in NOAA’s use of the OEF and is a part of the collaboration planned. Cumulative

impacts would include increased traffic and associated air emissions, as well as increased need for infrastructure support services (water, sewer, utilities).

- Port of Gulfport Access Project. In 2020, the USDOT awarded a Maritime Administration Grant to the Port of Gulfport to improve the roads leading to and from the entrance of the Port, which serves freight and military cargo. Cumulative impacts would include impacts of additional traffic on roadways that may not be designed for the added freight, cargo, and traffic; associated air emissions.
- Port of Gulfport Expansion Project. The project is expected to include a 282-acre dredge and fill program for further expansion of the west pier, north harbor, east pier, and the construction of a 4,000-linear foot breakwater system. This would occur after the Proposed Action and would not result in cumulative impacts.
- Port of Gulfport Channel and Harbor Dredging. Currently, the channel is dredged to its full operational depth of 36 feet. The Port is pursuing the necessary approvals to deepen the channel up to 47 feet to allow for larger vessels to enter Gulfport. The project is a multi-year effort including congressional, regulatory and federal agency approvals to move forward. This would occur after the Proposed Action and would not result in cumulative impacts.

Potential cumulative impacts to the environmental resources due to the addition of two NOAA vessels are unlikely and would be limited to negligible impacts to water quality impacts and impacts from marine debris and climate change.

Water Quality

Additive and cumulative impacts to water quality from the Proposed Action may include:

- Accumulation of marine debris from marine or terrestrial sources (e.g., plastics, polystyrene, glass, metals, or rubber);
- Accidental or illicit discharges (e.g., oil or fuel spills or other introduction of chemical contaminants);
- Flows of non-point source pollutants, contaminants, sediments, and nutrients from urbanized and agricultural areas in watersheds into coastal waters, with the greatest adverse effects experienced in waters with limited circulation such as bays, sounds, and estuaries.

Vessel operations require the use of fuels, chemicals, and potentially other contaminants to maintain their operations. Cumulative impacts could occur in the unlikely event of an accidental spill or leak. These substances could consist of fuels used during vessel movement; lubricants, grease, or paints used to repair and maintain machinery and equipment onboard; or other waste products managed through waste handling and disposal procedures. Vessels used by other cumulative actions conduct operations similar to OMAO's. These operations could cumulatively impact water quality if an accidental leak, spill, or unauthorized discharge were to occur. All NOAA vessels are required to follow all federal and NOAA policies, procedures, and regulations related to fuels, chemicals, and other contaminants to prevent or minimize the unauthorized discharge accidental leaks or spills of these substances. Any cumulative impact to water quality from fuels, chemicals, and other contaminants contributed by OMAO operations would be extremely limited due to the small quantities of substances carried onboard and the very low likelihood for accidental spills or leaks to occur due to well-maintained equipment and strict adherence to operational and emergency procedures. Comparably, other cumulative actions associated with ocean-going vessels, long-term installations, and marine-based facilities would likely contribute the

majority of the aggregate cumulative impacts to water quality from fuels, chemicals, and other contaminants.

Overall, aggregate cumulative impacts to water quality from fuels, chemicals, and other contaminants would be temporary or short term and would result in negligible cumulative impacts.

Climate Change

Activities that occur during OMAO vessel operations that can affect air quality in the Project area include vessel movement; safety and emergency response; waste handling and discharges; spill response; vessel repair and maintenance; ROVs and uncrewed marine systems operations; and small boat operations. These activities would result in the release of emissions from diesel engines, diesel generators, and incinerator operations and ozone depleting substances (ODS).

Impacts on air quality are not expected from anchoring; active acoustic systems; other sensors and data collection systems; trawling and longlines operations; uncrewed aircraft systems operations; and over-the-side handling, crane, davit, and winch operations and are not discussed further in this section.

OMAO Procedure *Ship Energy Efficiency Management Plan (SEEMP)* details the ship-specific instructions for each ship to develop management measures and practices to improve energy efficiency in their operations and control their greenhouse gas emissions. This procedure requires each ship to list their engine equipment and other emission sources (e.g., main engines, generators, bow/stern thrusters, incinerator, etc.), energy sources (e.g., diesel fuel), and fuel consumption rates at different speeds and levels of intensity to identify which activities are the most fuel/energy intensive.

Climate change impacts such as global warming and sea level rise and ocean acidification are ongoing. Over the past two decades, GHG emissions from all ships and boats in the U.S. have ranged from 40 to 47 million metric tons of carbon dioxide equivalent (Statistica.com 2021). OMAO GHG emissions, both within and while transiting outside the EEZ, while not quantified, represent a very small fraction of all U.S. shipping and boating emissions, and thus an even smaller fraction of total U.S. GHG emissions.

NOAA vessels require fossil fuel combustion for ship's propulsion, electricity, and operation. OMAO activities emit CO₂ to the atmosphere and thus contribute, incrementally, to climate change. Effects of global climate change, including continuing sea level rise, ocean acidification and deoxygenation, reductions in Arctic Ocean Sea ice, and an increase in the frequency of extreme weather events such as hurricanes could change the type and frequency of OMAO operations over the next 15 years.

Although the vessel activity under the Proposed Action would likely contribute cumulative impacts of climate change on resource areas analyzed in this EA, including habitats, biological resources, socioeconomic resources, cultural and historic resources, and environmental justice, the Proposed Action, because of the number of vessels involved, would have negligible cumulative impacts.

Marine Debris

OMAO operations under the Proposed Action could contribute to overall cumulative impacts from marine debris from:

- waste handling and discharge;
- vessel repair and maintenance;
- other sensors and data collection systems operations;

- trawling and longlines operations;
- ROVs and uncrewed marine systems; and
- small boat systems.

Marine debris generated from other cumulative actions would be most likely to occur in the event of an accidental discharge, rather than from deliberate disposal. Recreation-based vessels, such as cruise liners or recreational boating and fishing vessels, may produce solid waste consisting of consumer goods, such as food waste, dry trash, and recyclables. Larger, ocean-going vessels, such as other federal fleets, commercial shipping vessels, and commercial fishing vessels, may produce the same waste from consumer goods in addition to other items that are associated with their operations. Commercial fishing vessels could accidentally lose trawl nets, hooks, fishing pots, and other deployable equipment, while shipping vessels could lose containers and cargo during transits. Long-term installations and marine-based facilities would utilize specialized equipment, machinery, deployable gear, tools, supplies, and other items. These items could cumulatively contribute to marine debris if accidentally disposed of in the environment. Vessels and installations may also generate incinerator ash; however, incinerator ash would be limited to only those operations that use incinerators.

Cumulative effects from OMAO operations at the OEF would be indistinguishable from other cumulative actions. The NOAA fleet consists of 15 ships, including the nine Atlantic fleet vessels, and OMAO operations account for a very small amount of all vessel activity within U.S. navigable waters. OMAO operations would generate consumption-based solid waste during transits, such as food waste, plastics, recyclables, and dry trash. Certain operations would also deploy gear and equipment connected by cables, lines, and tethers, such as during sensors and data collection systems operations, trawling and longlines operations, ROVs and uncrewed marine systems operations, and small boat operations, all of which could potentially become marine debris if accidentally detached from the vessel. NOAA vessels are required to follow federal and NOAA policies, procedures, and regulations related to solid waste to prevent or minimize any unauthorized disposal.

Due to the number of vessels under the Proposed Action and NOAA regulations regarding the handling and disposal of marine debris, cumulative impacts to resources from marine debris would be negligible.

5.0 Agency Consultations

Federal Consultations

No water-related activities will occur under the Proposed Action. Ground-disturbing activities will be limited to fence installation in already disturbed areas. Consequently, no impacts to biological or cultural resources will occur and formal consultation is not required.

As discussed in Section 3.8 Biological Resources, the regulatory setting for potential protected resources in the Project Area includes EFH, BGEPA, MBTA, ESA, and MMPA. Each regulation typically requires informal or formal consultation with federal agencies that regulate their respective resources. Informal consultations were conducted during the preparation of this EA to obtain guidance on effects determinations and to gain additional information on next steps, if needed.

Table 5-1. Agency consultation contacts.

Regulation	Federal Agency Contacted	Notes
EFH	NMFS Habitat Conservation Division (HCD)	Phone conversation with Brandon Howard (NMFS HCD) on October 6, 2022.
BGEPA / MBTA	USFWS	awaiting response from regional consultation point of contact David Felder (USFWS)
ESA	USFWS; NMFS Protected Resources Division (PRD)	awaiting response from regional consultation point of contact David Felder (USFWS); phone conversation with Karla Reece (NMFS PRD) on September 19, 2022.
MMPA	USFWS; NMFS PRD	awaiting response from regional consultation point of contact David Felder (USFWS); phone conversation with Karla Reece (NMFS PRD) on September 19, 2022.

Representatives from NMFS Habitat Conservation Division (HCD), NMFS Protected Resources Division (PRD), and USFWS (awaiting response) were contacted to informally discuss the Proposed Action. In each conversation technical guidance was provided and based on those conversations NOAA has determined that the no effect determination is appropriate for resources listed in Section 3.8.

Through issuance of this EA, NOAA requests that the appropriate federal agencies review the effects determinations provided in Section 3.8 and provide comments if needed.

State Water Quality Certification

Section 401 of the Clean Water Act requires any applicant for a federal license or permit which may result in a discharge into waters of the United States must obtain a water quality certification from the certifying authority that the discharge complies with all applicable water quality requirements. The Proposed Action does not include any discharges into waters of the U.S. and consequently, no Section 401 Water Quality Certification is required.

6.0 Mitigation

No adverse impacts to biological, cultural and historical, or socioeconomic resources will occur as a result of the Proposed Action. Therefore, no mitigation is proposed.

7.0 List of Preparers

Preparer	Title
Anne Delp	NOAA Project Manager, Senior Environmental Engineer/Environmental Compliance Expert
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Jacqui Michel, PhD	RPI Principal
Pam Latham, PhD	RPI Project Manager
Hal Fravel	RPI Scientist
Wendy Early	RPI Document Preparation

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Appendix A Public Comments and Responses (to be included in Final EA)

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