

U.S. Department of Transportation Maritime Administration 1200 New Jersey Avenue, SE Washington, DC 20590 October 27, 2023

Andy Strelcheck Assistant Regional Administrator for Protected Resources National Marine Fisheries Service Southeast Regional Office St. Petersburg, Florida

Re: Request for Reinitiation of Expedited Informal Consultation under section 7(a)(2) of the Endangered Species Act for the Delfin LNG LLC Deepwater Port (USCG-2015-0472).

Dear Mr. Strelcheck:

The Maritime Administration (MARAD) requests reinitiation of informal consultation under section 7(a)(2) of the Endangered Species Act (ESA) for the construction, operation, and maintenance of the proposed Delfin LNG, LLC Deepwater Port (Port or proposed Project). MARAD has determined that the proposed activity may affect, but is not likely to adversely affect, the ESA-listed species and critical habitat included in the tables below. The supporting analysis is provided below. MARAD requests the National Marine Fisheries Service (NMFS) written concurrence with the determinations.

Pursuant to the request for expedited informal consultation, MARAD is providing, enclosing, or otherwise identifying the following information:

- A description of the action to be considered;
- A description of the action area;
- A description of any listed species or critical habitat that may be affected by the action; and
- An analysis of the potential routes of effect on any listed species or critical habitat.

Proposed Action

On May 8, 2015, Delfin applied for a license under the Deepwater Port Act of 1974 to own, construct, operate, and eventually decommission a deepwater port approximately 37.4 to 40.8 nautical miles (or 43 to 47 statute miles) off the coast of Cameron Parish, Louisiana. The Delfin Port would consist of four moored Floating Liquefied Natural Gas Vessels (FLNGVs) with independent propulsion, two existing offshore natural gas pipelines (the former U-T Operating System (UTOS) and the High Island Operating System (HIOS)), and four new pipeline laterals connecting the HIOS pipeline to each of the FLNGVs. The feed gas would be supplied through these new pipeline laterals to each of the FLNGVs where it would be cooled sufficiently to condense the gas to produce LNG that would then be stored in membrane-type LNG storage tanks aboard each of the FLNGVs. The stored LNG would be offloaded to side-by-side moored LNG carriers for export to locations worldwide.

On April 11, 2022, Delfin provided a project update that identified several changes to the design of the Port including the installation of a Submerged Swivel and Yoke (SSY) mooring system instead of a Tower Yoke Mooring System (TYMS).

The proposed project is intended to provide a safe and reliable facility to liquefy natural gas for export to free trade agreement (FTA) and non-FTA nations. Delfin LNG has proposed a four-phased project development plan for the full build-out of the Port. Execution of the full project plan is estimated to occur over a period of approximately 5 years from the issuance of the license by MARAD. If all conditions are met, Delfin LNG expects work to commence in 2024 and extend through 2029. As presented, Delfin LNG's four-phased plan focuses primarily on the start-up and roll-out of Phase I and includes completion of the onshore facility, installation of the bypass pipeline connection between the UTOS and HIOS pipelines, and construction and installation of four subsea pipeline laterals, which will connect the FLNGVs to the HIOS pipeline. Roll-out of Phase I will include the construction and commissioning of one of the four planned FLNGVs, and the SSY mooring system to support the FLNGVs. All subsequent phases of project development, which include construction and commissioning of the remaining three (3) FLNGVs and associated TYMSs will be pursued, at a later date, as sufficient revenue is generated from Phase I operations.

On January 12, 2016, the United States Coast Guard (USCG) and MARAD submitted a request to the National Marine Fisheries Service (NMFS) for technical assistance regarding the presence of Federally listed species and designated critical habitat within the project area. On July 14, 2016, MARAD sent a letter to NMFS requesting concurrence with a determination that the proposed onshore activities of the Port are not likely to adversely affect the listed species under the purview of NMFS, or their designated critical habitat. This determination was based on a Draft Environmental Impact Statement, the final version of which, issued on November 28, 2016, also serves as the Biological Assessment for the proposed action. The Delfin Final Environmental Impact Statement (FEIS) is available for viewing and downloading at http://www.regulations.gov, Docket Number USCG-2015-0472. On March 8, 2017, MARAD received a letter from NMFS, attached below, concurring with the determination.

MARAD subsequently issued Delfin a Record of Decision (ROD) approving the application with conditions on March 13, 2017; however, to date, Delfin has not satisfied the ROD's conditions, whereafter a license may be issued. In 2022, Delfin submitted a project update to MARAD and the USCG describing design changes to the proposed Port's mooring system, its floating liquefaction facilities, and minor changes to other design elements. In response to these changes, on March 27, 2023, MARAD requested an Environmental Impact Assessment (EIA) that detailed the proposed changes to the project and evaluated the probable environmental consequences, adverse or beneficial, and analyzed any newly listed species or critical habitats under the ESA. MARAD and the USCG received the EIA on April 7, 2023. The EIA compares the 2016 analysis to the 2022 project changes concerning newly listed species, critical habitat designations, and impacts on existing species. This combination of project changes combined with the listing of new species leads MARAD to request the reinitiation of this consultation.

Project Changes

The 2023 project design changes include refinements to the power generation system, cooling system, and mooring system. The power generation system changes reduce the total emission of greenhouse gases as compared to the FEIS but is not discussed in detail here due to the lack of impact on endangered species. The changes to the cooling system and mooring system are detailed below.

• Cooling System

The design change for the cooling system eliminates all withdrawals and discharges of cooling water. In the FEIS air-cooled heat exchangers were used for the main power plant cooling processes (refrigerant compression drives and general power generation). This system eliminated the intake of seawater for this main cooling system and the impacts associated with the intake and discharge of the cooling water. However, in the preliminary design, the essential generators on each FLNGV would rely on seawater withdrawal for cooling purposes when used during emergency events (e.g., during transit to avoid hurricanes) and during testing. In the refined design, two additional systems would use air cooling: 1) the steam exhaust from the new steam turbine resulting from the combined cycle power generation system, and 2) utility cooling for the essential generators. All other process equipment and utilities would continue to be cooled by air, in line with the feasibility stage design concept. The steam exhaust from the new combined-cycle power generation system would be condensed in an array of air-cooled condensers located on the aft deck of the vessel; this avoids any new impacts from cooling water intake and withdrawal. The essential generators would now also use air cooling instead of seawater. In the FEED, a dedicated array of air fin coolers would be installed at the aft deck of the vessel for the essential generators. In total, therefore, the engineering refinements eliminate all seawater withdrawals and discharges for cooling purposes resulting in a reduction of 0.001 million gallons per day (mgd) of seawater that would have been used for essential generator testing and use. These updates to the power generator system eliminate any impacts on water quality due to thermal impacts.

• Mooring System

At the feasibility stage, Delfin LNG evaluated two options for a disconnectable mooring system. One option was the Tower Yoke Mooring System (TYMS) which would consist of a four-pile fixed platform with a rotating swivel and disconnectable mooring assembly attached to each FLNGV. The other option was the Submerged Swivel and Yoke (SSY) Mooring System consisting of a three-pile base on the seabed with a submerged rotating swivel and a yoke system connecting the mooring chains.¹ The TYMS was tentatively deemed the preferred selection at the feasibility stage in 2015, due to the SSY mooring system being less mature at the time.

However, during the Front End Engineering Design (FEED) in 2020, Delfin determined that the SSY mooring system has now established a track record of being a safe, reliable, and costeffective mooring system for FLNGVs. Given this new track record and the operational advantages of the SSY mooring system approach, as well as the reduced environmental impacts, Delfin has selected the SSY mooring system for use on the Project.

¹ See Subsection 2.7.2 in Section 2, "Alternatives Analysis," Volume II of the Delfin Port License Application, for a description of the detailed evaluation of the TYMS and SSY mooring system that was undertaken.

The SSY mooring system would require the installation of 3 cylindrical steel piles (approximately 78 inches in diameter by 300 ft in length), 1 pile for each leg, for a total of 12 total piles as compared to 16 piles for the TYMS. The piles would be installed with a hydraulic impact hammer. The anticipated benthic disturbance would be an area of 25m by 25m at each of the 4 moorings. The moorings would be positioned approximately 2 nautical miles from each other and would display obstruction lights so they would be visible at night even when the FLNGVs are disconnected. During the construction of the mooring structures, Delfin LNG will implement mitigation related to pile-driving noise generation. Mitigation measures will, at a minimum, include the following: use of the lowest noise-producing impact hammer available; use of temporary noise attenuation piles (TNAP; including the introduction of bubbles within the annulus between the inner and outer piles to reduce the transmission of marine noise); use of pile-driving soft start ramp-up procedures preceded by clearing the surrounding waters by a Protected Species Observer (PSO); and the suspension of pile driving should a protected species be observed in proximity to the active pile driving operation.

The change from 16 to 12 piles results in a decrease in the duration of the pile installation timeframe by approximately 25 percent; therefore, the duration of pile driving noise, both above the water surface and underwater, as well as the duration of the localized, temporary increase in turbidity would decrease as well. Additionally, the reduction in construction time would also reduce GHG emissions from pile driving equipment by approximately 25 percent due to the shorter run-time of construction equipment. The configuration of the pile support structures is anticipated to impact the same benthic footprint during construction as was previously analyzed. The pile configuration and the shading from the FLNGVs are anticipated to impact the same amount of habitat as the original TYMS design for the duration of the Project.

No further developments of benthic disturbance in the soft bottom and sand shell habitats are anticipated. All other impacts are design elements are the same as previously analyzed in the 2016-2017 consultation with NMFS.

Pile Type and Material	Steel Pipe
Pile Diameter (inches)	96-in
Number of Piles Total	12
Installation Method	Impact
Number of Strikes per Pile (if using impact hammer) or Number of Seconds of Vibration per Pile (if using vibratory hammer)	5400
Number of Piles Installed per Day (if using impact or vibratory hammer)	0.6666666
Duration of pile driving activity (days)	8
Substrate and water depth in pile	Sand/Silt, 10 ft
installation area	Water depth 39-49 ft
Confined Space or Open Water?	Open Water
Noise abatement used	Bubble-infused coffer dam surrounding each pile

Table 1. Pile Installation

• Project Vessels

There has been no update to the type, size, and quantity of project vessels from the 2016-2017 NMFS consultation.

Delfin LNG has committed to implementing the procedures described in NOAA Fisheries Guidelines for Vessel Strike Avoidance Measures and Reporting for Mariners on all construction support vessels. These procedures call for vessels to maintain a vigilant watch for marine mammals and sea turtles to avoid striking protected species.

Vessels to be used during construction activities, their typical operations, and their expected number of transits are listed in Table 2 below. These vessels will be transiting between Cameron Parish, Louisiana, and the offshore construction sites, but are not expected to go beyond the proposed project area. Construction support vessels will need to anchor during some construction activities and anchors may disrupt the sea floor at the anchoring sites. Delfin estimates that the total sea-floor area likely to be disturbed by anchoring activities will be approximately 0.207 acres for all vessels over the entire construction period. All anchor lines securing the construction vessels would be large in diameter, knotless, non-floating, and taut, and would only be deployed for short periods.

Partial crew changes would occur each week with a crewboat. It is anticipated that a single weekly run would be required that would depart from Cameron, Louisiana. Each FLNGV would also require approximately 1 supply vessel run per week. As mentioned above, Delfin has committed to implementing the procedures described in NOAA Fisheries Guidelines for Vessel Strike Avoidance Measures and Reporting for Mariners on all construction and operational support vessels. These procedures call for vessels to maintain a vigilant watch for marine mammals and sea turtles to avoid striking protected species. Delfin LNG anticipates that four tugboats would be required per FLNGV offloading operation. A single fleet of tugboats would be shared between the four FLNGVs. If the arrival and departure of LNG carrier vessels overlap, one of the operations would be deferred until the tugboats complete the first operation. In addition to these operational support vessels, Delfin LNG anticipates that up to 160 LNG carrier vessels would call on the proposed Port each year.

Vessel Type	Typical Operation and	Estimated Number of Transits	
	Duration		
Derrick Barge	24/7 for 16 months	4	
Material Barge	24/7 for 20 months	4	
Quarters Barge	24/7 for 20 months	4	
Work Boat	24/7 for 36 months	77	
Crew Boat	Every 14 days for 36 months	77	
Tugboat	24/7 for 20 months	40	
Pipelay Barge	24/7, TBD	4	

Table 2. Construction	Vessel	Transit	Information
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Onshore Components

The onshore facility would consist of approximately 1.1 miles of the existing UTOS pipeline; the addition of four onshore compressors totaling 120,000 horsepower of new compression; activation of associated metering and regulation facilities; and the installation of new supply header pipelines. The supply header would consist of 0.25 miles of new 42-inch diameter pipeline to connect the former UTOS line to the new meter station and 0.6 miles of new twin 30-

inch pipelines between Transco Station 44 and the new compressor station site. The April 11, 2022, update made no changes to the proposed project's onshore components and no newly listed species under the jurisdiction of NMFS potentially impacted by the onshore facility; therefore, this aspect of the proposed action will not be considered further. Consultation was reinitiated with the U.S. Fish and Wildlife Service, on August 18, 2023, for newly listed species under their jurisdiction potentially impacted by the onshore facility.

Conservation Measures and BMPs

- Delfin LNG will be required to follow SERO's <u>Protected Species Construction</u> <u>Conditions</u> as a condition of their license.²
- Delfin LNG has committed to implementing the following conditions according to the 2016-2017 NMFS consultation letter:
 - Delfin LNG will implement NMFS Sea Turtle and Smalltooth Sawfish Construction Conditions during all construction activities.³
 - Delfin LNG will implement the procedures described in NOAA Fisheries Guidelines for Vessel Strike Avoidance Measures and Reporting for Mariners on all vessels operated by Delfin LNG. These guidelines will also be provided to the operators of LNG carrier vessels that are not owned or operated by Delfin LNG.
 - Delfin LNG will implement mitigations related to pile driving noise generation that include but are not limited to, the use of the lowest noise-producing impact hammer available, the use of temporary noise attenuation piles (TNAP; including the introduction of bubbles within the annulus between the inner and outer piles to reduce the transmission of marine noise), the use of pile-driving soft start ramp-up procedures preceded by clearing the surrounding waters by a PSO, and the suspension of pile driving should a protected species be observed in proximity to the active pile driving operation.
 - All anchor lines securing construction and service vessels would be large in diameter, knotless, non-floating, and taut, to avoid posing entanglement risks to marine species. Anchor lines will be steel cable, 2-4 inches in diameter, and will be kept taut by use of hydraulic winches.
 - All lighting at the proposed Port would be downshielded to the greatest extent possible to reduce light dispersion to a minimum.
 - All facility operations will remain in compliance with the International Convention for the Prevention of Pollution from Ships (MARPOL, 1973) and other applicable regulations set forth to minimize the risk of inadvertent release of materials. In addition, solid waste management training that emphasizes the importance of minimizing impacts on marine species would be provided to vessel crews.

² Found online here: https://media.fisheries.noaa.gov/2021 06/Protected_Species_Construction_Conditions_1.pdf. ³ Found online here:

https://www.saj.usace.army.mil/Portals/44/docs/Planning/EnvironmentalBranch/EnviroCompliance/SeaTurtleAndSa wfishConstructionConditions23mar2006.pdf

- Seawater intakes will be screened and the maximum intake velocity across the screens will be less than 0 .5 ft per second.
- Liquids from hazardous area drains would be pumped from the drain tanks to the hull settling tanks for final treatment before intermittently being transported to shore for disposal.
- Water, oil, and solids collected in the slop tanks would be separated and water would be treated to 15 parts per million oil before being discharged overboard (per MEPC 107(49)).
- Ballast water discharges would be required to meet CFR Title 46, Chapter I, Subchapter Q, Part 162 which addresses requirements for ballast water management systems to be installed onboard vessels to comply with the ballast water discharge standard of 33 CFR Part 151, Subparts C and D. Additional treatment via a copper aluminum anode system would also occur.
- Delfin LNG will also be required to follow all BMPs included in Appendix G of the FEIS as reproduced in the License, including but not limited to the following:
 - BMP-1: The proposed Project will be designed, constructed, tested, operated, and maintained to conform to or exceed the requirements of applicable Federal, State, and local regulations.
 - BMP-2: All Project-related activities will comply with Federal regulations to control the discharge of operational wastes such as bilge and ballast waters, trash and debris, and sanitary and domestic waste generated from vessels associated with the proposed Project.
 - BMP-4: Prior to construction and operation, Delfin LNG will prepare and submit for approval a construction and operation (SPCC) Plan and Facility Response Plan (FRP) detailing emergency procedures for addressing accidental releases and spills during construction and releases.
 - BMP-5: All construction vessels will operate in accordance with SPCC plans. All vessels will have spill containment kits and spill response plans for use in the event of a release. Typically, a spill response kit for a vessel other than an oil carrier must be capable of cleaning up an on-deck spill of a half-barrel or less.
 - BMP-6: Delfin LNG will provide a hydrostatic test plan for approval by the United States Coast Guard (USCG) prior to any hydrostatic testing of pipelines. Delfin LNG does not currently plan on using a dye as part of hydrostatic testing; however, if subsequent design work should call for the use of a dye as part of hydrostatic testing, Delfin LNG will use a United States USEPA-approved dye.
 - BMP-7: Delfin LNG will test the discharge water from the hydrostatic testing of the U-T Offshore System (UTOS) and High Island Offshore System (HIOS) pipeline systems for the presence of hydrocarbons, including the use of the USEPA's "visible sheen test." Delfin LNG will filter the hydrostatic discharge water sufficiently to meet the requirements of the general permit governing hydrostatic testing operations in the Gulf of Mexico.
 - BMP-8: Delfin LNG will design the floating liquefied natural gas vessels (FLNGVs) such that equipment on the main deck with the potential to release

hydrocarbons is installed above drain/drip pains or within contained areas that will collect rainwater, wash water, and other fluids, which will be pumped or gravity drained to slop tanks.

- BMP-10: While ambient levels of contaminants were found to be low and the potential for the introduction of toxic substances into the water column appears negligible, increases in turbidity may be measurable and require monitoring to ensure compliance with marine water standards. These standards will be established as part of the permitting process.
- BMP-11: A turbidity/suspended sediment monitoring program may be implemented to provide data on ambient bed load contribution to the water column during piling installation. This program will be analogous to what is required for offshore oil and gas exploration and production in the Gulf of Mexico.
- BMP-13: LNGCs calling on the proposed Port will be required to use approved equipment and follow and maintain records for ballast water and operational discharges (e.g., bilge, sanitary discharges) that are compliant with the International Convention for the Prevention of Pollution of Ships (MARPOL) and USCG standards. LNGCs operating fully within Federal waters will be required to operate under a Vessel General Permit (VGP). Inspections will require a review of onboard records for assessing compliance.
- BMP-14: Delfin LNG will institute impact minimization and mitigation measures 0 throughout the course of the proposed Project. Delfin LNG will implement mitigations such as, but not limited to, the use of the lowest noise-producing impact hammer available, use of a cofferdam system (including the introduction of bubbles within the annulus between the pile and the cofferdam) to reduce the transmission of marine noise), use of the pile-driving soft start ramp-up procedures preceded by clearing the surrounding waters by a Protected Species Observer (PSO), and call for a suspension of pile driving by the PSO should a protected species be observed in proximity to the active pile driving operation. Prior to operating at full capacity, Delfin LNG will implement a "soft start" with several initial hammer strikes at less than full capacity (i.e., approximately 40-60 percent energy levels) with no less than a 1-minute interval between each strike. PSOs will be present to conduct surveys before, during, and after all pile-driving activities to monitor for marine mammals within designated zones of influence (ZOIs).
- BMP-15: The proposed Port will be designed and permitted under the Deepwater Port Act, and thus will be required to meet all lighting stipulations as noted in 33 Code of Federal Regulations (CFR), Part 149. To this end, Delfin LNG will limit, to the greatest extent possible, the amount of total lighting used on the proposed Port to that required for safety and navigational concerns only. As such, to reduce the disruptive effects of lighting, all lighting at the proposed Port will be downshielded to the greatest extent possible to reduce light dispersion to a minimum.
- o BMP-16: Standard mitigations for marine mammal monitoring will be in place

during construction, operation, and decommissioning.

- BMP-17: Delfin LNG will institute the procedures described in National Oceanic and Atmospheric Administration Fisheries Southeast Region guidelines for "Vessel Strike Avoidance Measures and Reporting for Mariners," which call for vessels to maintain a vigilant watch for marine mammals and sea turtles to avoid striking protected species. Delfin LNG will adhere to the reporting procedures related to injured or dead protected species described in these guidelines.
- BMP-18: To prevent or mitigate potential noise impacts on marine mammals and sea turtle species, Delfin LNG will maintain minimal safe operating power at all times for vessels with directional positioning (DP) thrusters. Each of Delfin's FLNGVs will not engage thrusters if it is not required to do so. Additionally, if a marine mammal or sea turtle is detected within 500 m of a DP vessel, the responsible crew member will alert the vessel operators to minimize thruster power down to the absolute lowest safe operating levels. Other vessels in the immediate vicinity of the vessel that had an animal detected within 500 m will also be instructed to reduce to slow speed and minimum safe operating power consistent with the activities being performed.
- BMP-24: Delfin LNG commits to minimizing the area of subsea impact and duration of disturbance during the installation and commissioning of the proposed Project. To minimize the area of subsea impact and duration of disturbance during decommissioning of the proposed Project, Delfin LNG will abandon subsea pipelines and other subsurface components more than three feet below the mudline, and cut all bottom founded items such as driven pile and grouted pile anchors no shallower than 15 feet (approximately five meters) below mudline to avoid exposure in the future due to storms, scouring, and other uses. Final site clearance will be verified by a trawling contractor to ensure compliance with Bureau of Ocean Energy Management (BOEM)/Bureau of Safety and Environmental Enforcement (BSEE) requirements and to ensure the complete removal of infrastructure.
- BMP-28: Siting the proposed Port in a location with limited oil and gas activity and without unique fishing or recreational properties or significant sediment resources will minimize impacts on ocean uses and marine traffic.
- BMP-42: All Project-related activities will comply with Federal regulations to control noise generated from vessels associated with the proposed Project.
- BMP-43: During construction, Delfin LNG will implement various procedure measures, including "soft starts." Prior to operating at full capacity, Delfin LNG will implement a "soft start" with several initial hammer strikes at less than full capacity (i.e., approximately 40–60 percent energy levels) with no less than a 1minute interval between each strike.
- BMP-44: Delfin LNG will ensure that all equipment has sound control devices no less effective than those provided by the manufacturer.
- BMP-45: Standard mitigations for marine mammal monitoring and BMPs will be in place during construction, operation, and decommissioning. Any impacts

resulting from Level A or Level B noise will be addressed with an Incidental Harassment Authorization from the Applicant.

- BMP-46: During construction and restoration, Delfin LNG will implement Delfin LNG's Wetland and Waterbody Construction and Mitigation Procedures (Appendix F) to avoid, minimize, and mitigate potential impacts.
- BMP-50: Delfin LNG will minimize impacts to onshore biological resources, including threatened and endangered species, by locating the new community center away from areas that are designated as unique habitats for threatened or endangered species or vital habitats to migratory birds.
- BMP-51: Delfin LNG will conduct necessary monitoring, reseeding, fertilizing, or other measures needed to re-establish a vegetative cover equivalent to similar adjacent areas.
- BMP-52: Delfin LNG will use mechanical control of vegetation in the vicinity of waterbodies and will prohibit the use of herbicides within 100 feet of waterbodies.
- BMP-56: Delfin LNG will take all measures possible to minimize the amount of total lighting used on the proposed terminal to that required for safety.
- Additionally, the amount of light will be minimized during the height of the trans-migratory period for bird species. To reduce the disruptive effects of lighting, all lighting at the terminal will be down-shielded to keep the dispersion of light to a minimum. The shields will prevent the lights from shining skyward, instead directing the light to shine only on work areas. Shielded lighting has resulted in significant reductions in bird mortality (Evans 2002; Orr et al. 2013). A heliport is planned for the proposed Project's FLNGVs; Delfin LNG will install lighting on the heliport in accordance with USFWS guidelines for aviation safety lights.
- These guidelines specify that only white or red strobe lights should be used at night and that these strobes should be minimal in number, intensity, and number of flashes.
- BMP-68: Delfin LNG will implement the following measures to minimize impacts on noise receptors during construction:
 - Perform construction during daytime hours when there is less sensitivity to sound;
 - Locate stationary construction equipment away from noise receptors where feasible;
 - Turn off idling equipment when not in use; and,
 - Install temporary acoustic barriers around stationary construction noise sources, as feasible.

Description of the Action Area

The *action area* is all areas to be affected by the Federal action and not merely the immediate area involved in the action (50 C.F.R. § 402.02). *Effects of the action* are all consequences to listed species or critical habitats that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused

by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. The action area is distinct from and can be larger than the project footprint because some elements of the project may affect listed species or critical habitats some distance from the project footprint. The action area, therefore, extends out to a point where no effects from the project are expected to occur.

The proposed engineering refinements have caused no changes to the action area, the analyzed area remains consistent with the findings in the FEIS and previous NMFS consultation.

For this project, the action area includes all areas that will be directly affected by the construction process, including the water column and sea-floor substrates in the construction areas, as well as the zones of influence where noise generated by the project may affect listed resources, and the shipping zones where vessels involved in the construction and operation of the project may travel. The bottom substrates in the construction areas are made up of soft, muddy sediments which support demersal taxa living on (epifauna) or in (infauna) the substrate. Particle types in soft-bottom habitats generally include sand, clay, gravel, and silt. Infauna communities typically include polychaete worms, crustaceans, and mollusks, while epifaunal communities typically include crustaceans, echinoderms, mollusks, hydroids, and sponges. No hard bottom habitat has been identified within the vicinity of the proposed project.

Mooring	Latitude/Longitude (North American Datum 1983)
#1	29.136972 N, 93.533944 W
#2	29.103778 N, 93.545111 W
#3	29.111306 N, 93.502806 W
#4	29.078028 N, 93.514389 W

Table 3. Port Location

Potentially Affected NMFS ESA-Listed Species and Critical Habitat

MARAD has assessed the listed species that may be present in the action area and provided a determination of the project's potential effects to the species as shown in Table 4 below. Please note abbreviations used in Table 4: E = endangered; T = threatened; NLAA = may affect, not likely to adversely affect; NE = no effect; N/A = not applicable

Table 4. ESA-listed Species in the Action Area and Effect Determination(s)

Species	ESA Listing Status	Listing Rule/Date	Most Recent Recovery Plan/Outline Date	Effect Determination (Species)(2017)	Effect Determination (Species)
Sea Turtles					
Green (North Atlantic [NA] distinct population segment [DPS])	Т	81 FR 20057/ April 6, 2016	Octobe r 1991	<u>NLAA</u>	<u>NLAA</u>

Species	ESA Listing Status	Listing Rule/Date	Most Recent Recovery Plan/Outline Date	Effect Determination (Species)(2017)	Effect Determination (Species)
Sea Turtles			•		
Green (South Atlantic [SA] DPS)	Т	81 FR 20057/ April 6, 2016	Octobe r 1991	<u>NLAA</u>	<u>NLAA</u>
Kemp's ridley	E	35 FR 18319/ December 2, 1970	September 2011	<u>NLAA</u>	<u>NLAA</u>
Leatherback	Е	35 FR 8491/ June 2, 1970	April 1992	NLAA	<u>NLAA</u>
Loggerhead (Northwest Atlantic [NWA] DPS)	Т	76 FR 58868/ September 22, 2011	December 2008	<u>NLAA</u>	<u>NLAA</u>
Hawksbill	E	35 FR 8491/ June 2, 1970	December 1993	<u>NLAA</u>	<u>NLAA</u>
Fish			1	1	
Smalltooth sawfish (U.S. DPS)	E	68 FR 15674/ April 1, 2003	January 2009	<u>NLAA</u>	<u>NLAA</u>
Gulf sturgeon (Atlantic sturgeon, Gulf subspecies)	Т	56 FR 49653/ September 30, 1991	Septembe r 1995	<u>NLAA</u>	<u>NLAA</u>
Giant manta ray	Т	83 FR 2916/ January 22, 2018	2019	Not Evaluated	<u>NLAA</u>
Oceanic whitetip shark	Т	83 FR 4153/ January 30, 2018	2018	Not Evaluated	<u>NLAA</u>
Marine Mammals					
Blue whale	E	35 FR 18319/ December 2, 1970	July 1998	<u>NLAA</u>	<u>NLAA</u>
Fin whale	E	35 FR 12222/ December 2, 1970	August 2010	<u>NLAA</u>	<u>NLAA</u>
Sei whale	E	35 FR 12222/ December 2, 1970	Decembe r 2011	NLAA	NLAA
Sperm whale	E	35 FR 12222/ December 2, 1970	Decembe r 2010	<u>NLAA</u>	<u>NLAA</u>

Species	ESA Listing Status	Listing Rule/Date	Most Recent Recovery Plan/Outline Date	Effect Determination (Species)(2017)	Effect Determination (Species)
Sea Turtles					
Rice's whale	Е	84 FR 15446/	2020	Not	NLAA
		April 15, 2019		Evaluated	

MARAD has assessed the critical habitats that overlap with the action area and provided determination of the project's potential effects on the critical habitats as shown in Table 5 below. Please note abbreviations used in Table 5: NLAA = may affect, not likely to adversely affect; NE = no effect

Table 5. Critical Habitat(s) in the Action Area and Effect Determination(s)

Species	Critical Habitat in the Action Area	Critical Habitat Rule/Date	Effect Determination (Critical Habitat) (2017)	Effect Determination (Critical Habitat)
Sea Turtles				
Loggerhead sea turtle (Northwest Atlantic Ocean DPS)	LOGG-S-02 Sargassum	79 FR 39856/ July 10, 2014	<u>NLAA</u>	<u>NLAA</u>
Rice's whale		<i>Proposed</i> , 88 FR 47453/ July 24, 2023	Not Evaluated	<u>NLAA</u>

Effects of the Action

Noise

Operational Noise

There have been no changes to the proposed noise expected to be generated by the Port, LNG Carrier vessels, or support vessels since the 2016-17 NMFS consultation; any potential impacts will be consistent with the findings in the FEIS and previous NMFS consultation.

Pile Driving Noise During Construction

The project changes from a Tower-yoke mooring system to a swiveled yoke mooring system presents reduced environmental impacts, including a 25% reduction in cumulative pile driving noise by reducing the total number of pilings used from 16 to 12. The calculated acoustic profile of driving each pile however remains the same as was analyzed in the 2016-2017 consultation. The impacts of pile driving have been run through the 2022 NMFS SERO Multi-Species Pile Driving Calculator and the results are attached.

Water Management and Discharges

There has been no change to the use of seawater for normal operations, including ballast water, sanitary sewer, firewater, and other intermittent needs. Delfin LNG will be required to comply with regulations to control the discharge of operational waste, such as bilge and ballast water, trash and debris, and sanitary and domestic waste, that could be generated from all vessels associated with the proposed Project, particularly by obtaining the appropriate National Pollutant Discharge Elimination System (NPDES) permits for the continuous and intermittent discharge, as regulated by the USEPA under the Clean Water Act (CWA). All LNG carrier vessels making port calls at the Port would be required to use approved equipment and follow and maintain records for ballast water and operational discharges that are compliant with Marine pollution reduction BMPs, as provided in the application materials and the Project's Final EIS.

Additionally, the cooling system of each FLNGV has been redesigned to eliminate all seawater intake and discharge for cooling purposes. This is a reduction of 0.001 million gallons per day (mgd) of seawater that would have been used for essential generator testing with the initial design. This engineering refinement eliminates any impacts on water quality due to thermal impacts.

Turbidity

As stated in the Project's Final EIS (USCG 2016), potential impacts on water quality during construction of the TYMS would include modification of aquatic habitat by the conversion of soft bottom to hard bottom structures, increased sedimentation (i.e., accumulation and redistribution of sediment on waterbody bottom) and turbidity (a measure of water clarity) from piling installation activities, increased water discharges from associated tending vessels, suspension of sediments during pipeline installation, and the potential introduction of fuels and lubricants via accidental spills or releases by construction equipment and tending vessels. All of these adverse water quality impacts were identified as short-term, direct, and minor. The refined design of the mooring system to the SSY would result in similar types of impacts but at a lesser magnitude. Because the SSY mooring system would require only three piles instead of the four piles required for the TYMS, there would be approximately 25 percent less seabed disturbance (turbidity) and construction time during the installation of the mooring system. Seabed disturbance and construction time would also be proportionally reduced during decommissioning when the mooring structures would be removed, and the piles are cut 15 feet below the mudline.

Vessel Strikes

The increased vessel traffic in the Gulf of Mexico due to LNG carrier vessels transiting to and from the proposed Port could pose an increased risk of accidental vessel strikes. However, due to the anticipated occurrence and mobility of the species and the vessel transit routes and mitigation measures, it is not likely that the anticipated increase in vessel traffic to and from the Port would result in an increase in vessel strikes. LNG carrier vessels are expected to use the well-established shipping lanes in the Gulf of Mexico that are situated in deeper open waters, and these vessels are generally slower moving and generate more noise, making them more readily detectable by the mobile species in the area, thereby allowing for natural avoidance. Additionally, to further reduce the potential for vessel strikes, all LNG carrier vessels, support

vessels, and captains associated with the Project would be provided with, and required to comply with, the NOAA Fisheries Vessel Strike Avoidance Measures (revised February 2021), which include collision avoidance measures, as outlined in BMP-17.

Solid Waste Management

There have been no project changes related to solid water management. All facility operations are required to remain in compliance with the International Convention for the Prevention of Pollution from Ships (MARPOL, 1973) and other applicable regulations set forth to minimize the risk of inadvertent release of materials. In addition, solid waste management training that emphasizes the importance of minimizing impacts on marine species would be provided to vessel crews.

Lighting

There have been no project changes related to Lighting. Delfin LNG will be required to limit, to the greatest extent possible, the amount of total lighting used at the proposed Port to that required for safety and navigational concerns only. As such, to reduce the potentially disruptive effects of lighting on marine organisms, all lighting at the proposed Port would be down-shielded to the greatest extent possible to reduce light dispersion to a minimum. Given these precautions and the fact that the proposed port is over 40 miles from the closest shoreline, lighting from the proposed port is not expected to be visible from beach areas where turtle nesting might occur.

Decommissioning

There have been no changes to projected impacts from decommissioning from the 2016-2017 NMFS consultation.

Decommissioning of the proposed Port is anticipated to occur 30 or more years in the future. Activities associated with decommissioning are expected to cause sediment displacement and temporary increases in water turbidity similar to, but on a smaller scale than what is expected during construction activities. Therefore, any potential effects of turbidity on ESA-listed species related to decommissioning activities are expected to be insignificant or discountable. The projected impacts from pile removal will be reduced by reducing the number of proposed piles. All other decommissioning impacts will remain the same. If Delfin determines that it needs to use trawling gear, during decommissioning, it must reinitiate consultation with NMFS to consider potential adverse effects on sea turtles.

Whales

The Federally endangered blue whale, Rice's whale (formerly Bryde's whale), fin whale, sei whale, and sperm whale have been documented off the coast of Louisiana in the Gulf of Mexico. Their habitat is limited to the offshore ocean environment, typically at depths greater than 640 feet (200 meters). There is currently no designated critical habitat for these whale species, although rulemaking is pending to designate critical habitat for the Rice's whale. There will be no impacts on these whales from the construction of the onshore facility. For the offshore portion of the project, in 2017 NMFS concurred with MARAD's analysis that the proposed project "is

not likely to adversely affect" all these species except for the Rice's whale, which was listed on April 15, 2019.

Rice's whale (Balaenoptera ricei)

Rice's whale is a species of baleen whale that inhabits the northeastern Gulf of Mexico along the continental shelf break between around 328 and 1,300 feet in depth. Limited data suggests the species spends most of its time within about 50 feet of the surface overlaying these deeper waters. The species was formerly believed to have been a subspecies of the Bryde's whale (Balaenoptera edeni), but genetic and skeletal studies found the Rice's whale to be a distinct species in 2021 (NOAA Fisheries 2023b). After reclassification, NMFS revised the common and scientific name of the species to reflect the new scientifically accepted taxonomy and nomenclature. While the species is endemic to the Gulf of Mexico, east of Louisiana, and the Mississippi River delta. Occurrence outside of the species' Core Distribution Area is considered rare based on passive acoustic monitoring data (Soldevilla et al. 2022). The Rice's whale's very small population size and limited distribution increase its vulnerability to threats. The primary threats to Rice's whale include vessel strikes, underwater noise, and pollution (NOAA Fisheries 2023b).

The Project is located outside of the core distribution area for the Rice's whale, it is unlikely that the species will be impacted by the construction, operation, or decommissioning of the Deepwater port (DWP) facility. Through the implementation of the above Vessel Strike Avoidance Measures (NOAA Fisheries 2021) by all LNG vessels, it is anticipated that Project-related vessel strikes with the Rice's whale are unlikely to occur and impacts are anticipated to be discountable.

Based on the low likelihood of occurrence of the Rice's whale in the project area and mandatory BMPs and NMFS conditions designed to protect marine mammals, MARAD concludes that the project may affect but is not likely to adversely affect the Rice's Whale.

Fish

Giant Manta Ray (Manta birostris)

The giant manta ray was listed as Federally threatened by NOAA Fisheries under the ESA on January 21, 2018, with the final rule going into effect on February 21, 2018. Critical habitat has not been designated for the species. The giant manta ray is the world's largest ray, with a wingspan of up to 29 feet. The giant manta ray can be found in all ocean basins (NOAA Fisheries 2022). The giant manta ray is a seasonal visitor along productive coastlines with regular upwelling, in oceanic island groups, and at offshore pinnacles and seamounts. The timing of these visits varies by region and seems to correspond with the movement of zooplankton, current circulation and tidal patterns, seasonal upwelling, seawater temperature, and possibly mating behavior. They have also been observed in estuarine waters near oceanic inlets (Adams and Amesbury 1998; Medeiros et al. 2015). Giant manta rays primarily feed on planktonic organisms such as euphausiids, copepods, mysids, decapod larvae, and shrimp, but some studies have noted their consumption of small and moderately sized fishes (Miller and Klimovich 2017). The species is known to be in decline due to overfishing and bycatch, as well as harvest for

international trade. Other threats known to impact the species include marine debris/pollution, vessel strikes, entanglement, and recreational fishing interactions. These threats to the species, along with the lowest fecundity of all elasmobranchs, typically giving birth to only one pup every two to three years, puts the species in danger of extinction (NOAA Fisheries 2022). The giant manta ray has been recently listed as an ESA species and has the potential to occur in the vicinity of the proposed project; therefore, the impact evaluation is based on all routes of impact on the giant manta ray, not only those that have been adjusted due to engineering refinements. This detailed analysis is available in the Port Delfin Environmental Impact Assessment, Section 3.1.2.3 (2023).

Potential risks to the giant manta ray from the construction and operation of the DWP include marine pile driving noise and the resulting turbidity (habitat avoidance), vessel strikes from construction vessels and from LNG carriers (LNGCs) utilizing the DWP, and marine debris/pollution. The mandatory BMPs for each of the above impacts from the project's FEIS, and included above, will mitigate these potential impacts. Therefore, with the implementation of project BMPs, MARAD concludes that potential impacts from the proposed project may affect, but is not likely to adversely affect, the giant manta ray.

Oceanic Whitetip Shark (Carcharhinus longimanus)

The oceanic whitetip shark was listed as a Federally threatened species on January 30, 2018. Critical habitat has not been designated for the species. The oceanic whitetip shark can be found in tropical to subtropical oceans worldwide. The shark species typically occurs offshore over the outer continental shelf and around oceanic islands, generally in the surface waters (0 to 498 feet) over depths greater than 600 feet. Oceanic whitetip sharks are opportunistic feeders and are known to primarily feed on bony fish and cephalopods but have been known to also feed on sharks and rays, sea birds, marine mammals, and even garbage (NOAA Fisheries 2023b). Oceanic whitetip shark populations have significantly declined worldwide due to commonly being caught as bycatch in commercial fisheries combined with the demand for its fins, including an 88 percent decline in the Gulf of Mexico and 80 to 95 percent in the Pacific and Atlantic Oceans (NOAA Fisheries 2023b).

As the proposed site of the project is in water depths ranging from approximately 64 to 72 feet, the oceanic whitetip shark is not anticipated to occur in the vicinity of the Port. The known range of the oceanic whitetip shark is typically in surface waters above depths greater than 600 feet; therefore, due to the distance from the proposed project to the continental shelf, construction activities producing acoustic and water quality disturbances are not anticipated to impact the species. Furthermore, due to the nature of LNG, product spills are anticipated to be short-term with minor impacts restricted to the immediate vicinity of the spill. As stated in the Final EIS (USCG 2016):

If an LNG spill were to occur, potential impacts would include exposure to low temperature LNG at the water surface, possibly resulting in rapidly dropping water temperatures near the surface. These impacts would likely occur in the immediate vicinity of the spill location; the time frame of the impact is limited. Since LNG would boil off as natural gas at the surface, depth and pressure required for gas to dissolve in surface waters would not be sufficient and gas vapors would disperse.

In addition, the time frame for these impacts would be limited, and adverse toxic impacts would be expected to be minor after the LNG boiled off and the vapors dispersed.

Construction, operation, and decommissioning of the proposed project are not anticipated to impact the oceanic whitetip shark. While not known to occur in waters surrounding the proposed project, the species has the potential to occur in surface waters over deeper pelagic waters. There exists the potential for an encounter during vessel transit to and from the proposed project; however, vessel strikes are not a known cause of mortality. It is anticipated that Project-related vessel strikes with the oceanic whitetip shark are unlikely to occur, and impacts are anticipated to be discountable. Therefore, MARAD concludes that potential impacts from the proposed project may affect but are not likely to adversely affect the oceanic whitetip shark.

Sea Turtles

Five of the seven sea turtle species found in the world can be found in the Gulf of Mexico: green, hawksbill, Kemp's ridley, leatherback, and loggerhead. All five species are listed as either threatened or endangered under the ESA and are under the joint jurisdiction of NMFS and the U.S. Fish & Wildlife Service (FWS).⁴ All species of sea turtles nest on coastal beaches, however, once hatched, sea turtles have the potential to occur in the vicinity of the proposed project during some stage of their life cycle. There are five developmental stages in a sea turtle's life cycle: egg, hatchling, juvenile, sub-adult, and adult. Five species of sea turtles have the potential to occur at the DWP in various age classes: green sea turtle, hawksbill sea turtle, Kemp's ridley sea turtle, leatherback sea turtle, and loggerhead sea turtle. Noise impacts on ESA-listed sea turtles will result from the noise generated during the construction of the proposed project. The engineering refinements proposed at the Port would reduce the potential impacts on sea turtles as the duration of pile driving noise would decrease by 25 percent, as only 12 piles would be required for the SSY mooring system rather than the 16 piles required for the TYMS. Furthermore, the reduction in the number of piles required would lead to a 25 percent reduction in the duration of sediment suspension related to pile-driving construction. With the noise mitigation strategy presented in the FEIS, impacts from the construction of the SSY mooring system are not likely to adversely affect sea turtles. The impacts of operational functions of the DWP following the engineering refinements are the same as assessed in the FEIS. Based on these impact reductions and the evaluation in the FEIS and 2016-2017 NMFS Consultation, MARAD concludes that the project may affect but is not likely to affect marine sea turtles.

⁴ The FWS has been consulted concerning nesting turtles and impacts to species under their jurisdiction. Initial informal consultation was made on July 14, 2016, and on August 10, 2016, MARAD received a letter from FWS concurring with MARAD's determination that the proposed onshore activities of the Port are not likely to adversely affect the listed species under the purview of FWS, or their designated critical habitat. On August 17, 2023, MARAD reinitiated consultation with the FWS.

Critical Habitat

LNG carriers associated with the operation of the proposed Project will utilize established shipping routes in the Gulf of Mexico. These routes cross designated critical habitats for the loggerhead sea turtle, specifically the sargassum habitat (LOGG-S-2, Gulf of Mexico Sargassum). The utilization of these routes by LNG carriers will have no effect on loggerhead designated critical habitat.

Construction activities as well as vessel traffic related to construction, operation, support, and eventual decommissioning of the proposed facilities would also occur in loggerhead sea turtle critical habitat LOGG-S-2. The Sargassum habitat is defined as developmental and foraging habitat for young loggerheads where surface waters form accumulations of floating material, especially Sargassum.

The following primary constituent elements (PCEs) are present in LOGG-S-2:

(i) Convergence zones, surface-water down welling areas, the margins of major boundary currents (Gulf Stream), and other locations where there are concentrated components of the Sargassum community in water temperatures suitable for the optimal growth of Sargassum and inhabitance of loggerheads;

(ii) Sargassum in concentrations that support adequate prey abundance and cover;

(iii) Available prey and other material associated with the Sargassum habitat including, but not limited to, plants and cyanobacteria and animals native to the Sargassum community such as hydroids and copepods; and

(iv) Sufficient water depth and proximity to available currents to ensure offshore transport (out of the surf zone) and foraging and cover requirements by Sargassum for post-hatchling loggerheads, i.e., > 10m depth.

The PCEs that may be affected by the proposed project include (ii) Sargassum in concentrations that support adequate prey abundance and cover, and (iii) Available prey and other material associated with Sargassum habitat including, but not limited to, plants and cyanobacteria and animals native to the Sargassum community such as hydroids and copepods.

The engineering refinements would have no change in impacts on loggerhead turtle critical habitat, consistent with the findings in the FEIS and previous NMFS consultation; therefore, MARAD concludes that the project may affect but is not likely to adversely affect loggerhead critical habitat.

As the Project is located outside of the core distribution area for the Rice's whale, it is unlikely that the species will be impacted by the construction, operation, or decommissioning of the DWP facility. However, due to their distribution along the edge of the outer continental shelf, there exists the potential for an encounter during vessel transit to and from the Port. As the proposed transit routes are outside of the Rice's whale's Core Distribution Area, vessel encounters are anticipated to be relatively low. However, such transits would cross the proposed critical habitat for the Rice's whale, described as one continuous marine area within the Gulf of Mexico from the Texas-Mexico border in the west to the Florida Keys in the east between the 100m to 400m isobaths. The proposed rule was published in the Federal Register on July 24, 2023, with a public comment period ending on September 22, 2023.⁵ With the adherence to the BMPs set forth in the FEIS and reproduced above, if the proposed rule is

finalized without change, MARAD anticipates that the proposed project may affect, but is not likely to adversely affect the Rice's whale critical habitat.

Conclusion

The Maritime Administration has reviewed the proposed project for its effects on ESA-listed species and their critical habitat. Based on the analysis above, supported by the attached documents, MARAD has determined that the Delfin LNG Deepwater Port Project is not likely to adversely affect any listed species or critical habitat under NMFS jurisdiction. MARAD used the best scientific and commercial data available to complete this analysis and requests NMFS concurrence with this determination.

MARAD appreciates NMFS continued assistance on this project and would appreciate receiving a response by September 1, 2023, if possible. If you have any questions about this request, please contact me at (202) 366-4871 (James.Simmons@dot.gov) or Brian Barton, at 202-366-0302 (Brian.Barton@dot.gov).

Sincerely,

James O. Simmons

James O. Simmons Acting Director, Office of Deepwater Port Licensing & Port Conveyance Maritime Administration

Attachments:

- March 8, 2017, NMFS Consultation Response Letter
- Impact Results from NMFS Multi-Species Pile Driving Calculator (2022)
- Final Environmental Impact Statement for the Port Delfin LNG Project Deepwater Port Application, Appendix P: Delfin LNG Revised Acoustic Modeling Analysis (2017)
- Port Delfin Environmental Impact Assessment with Attachments (2023)

Cc:

David Swearingen, FERC Jennifer Wade, DOE Peri Ulrey, DOE CAPT Jerry Butwid, USCG Brent Yezefski, USCG LCDR Jake Lobb, USCG Aaron Valenta, FWS

⁵ Endangered and Threatened Species; Designation of Critical Habitat for the Rice's Whale, 88 Fed. Reg. 47453-47472 (July 24, 2023).

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