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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XG956

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to the South Quay Wall Recapitalization Project, Mayport, Florida

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; proposed incidental harassment authorization; request for comments on proposed authorization and possible renewal.

SUMMARY: NMFS has received a request from the U.S. Navy Naval Facilities Engineering Command Southeast and Naval Facilities Engineering Command Atlantic (Navy) for authorization to take marine mammals incidental to the South Quay Wall Recapitalization Project, Naval Station (NAVSTA) Mayport, Florida. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an incidental harassment authorization (IHA) to incidentally take marine mammals during the specified activities. NMFS is also requesting comments on a possible one-year renewal that could be issued under certain circumstances and if all requirements are met, as described in *Request for Public Comments* at the end of this notice. NMFS will consider public comments prior to making any final decision on the issuance of the requested MMPA authorizations and agency responses will be summarized in the final notice of our decision.

DATES: Comments and information must be received no later than **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Comments should be addressed to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service. Physical comments should be sent to 1315 East-West Highway, Silver Spring, MD 20910 and electronic comments should be sent to *ITP.Daly@noaa.gov*.

Instructions: NMFS is not responsible for comments sent by any other method, to any other address or individual, or received after the end of the comment period. Comments received electronically, including all attachments, must not exceed a 25-megabyte file size. Attachments to electronic comments will be accepted in Microsoft Word or Excel or Adobe PDF file formats only. All comments received are a part of the public record and will generally be posted online at *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection*-act without change. All personal identifying information (*e.g.*, name, address) voluntarily submitted by the commenter may be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information.

FOR FURTHER INFORMATION CONTACT: Jaclyn Daly, Office of Protected Resources, NMFS, (301) 427-8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act*. In case of problems accessing these documents, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the "take" of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq*.) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed incidental take authorization may be provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other "means of effecting the least practicable adverse impact" on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stocks for taking for certain subsistence uses (referred to in shorthand as "mitigation"); and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth.

The NDAA (Pub. L. 108–136) removed the "small numbers" and "specified geographical region" limitations indicated above and amended the definition of "harassment" as it applies to a "military readiness activity." The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq*.) and NOAA Administrative Order (NAO) 216-6A, NMFS must review our proposed

action (*i.e.*, the issuance of an incidental harassment authorization) with respect to potential impacts on the human environment.

This action is consistent with categories of activities identified in Categorical Exclusion B4 (incidental harassment authorizations with no anticipated serious injury or mortality) of the Companion Manual for NOAA Administrative Order 216-6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has preliminarily determined that the issuance of the proposed IHA qualifies to be categorically excluded from further NEPA review.

We will review all comments submitted in response to this notice prior to concluding our NEPA process or making a final decision on the IHA request.

Summary of Request

On December 4, 2018, NMFS received a request from the Navy for an IHA to take marine mammals incidental to pile driving at the South Quay wall, NAVSTA Mayport, Florida. The application was deemed adequate and complete on April 16, 2019. The Navy's request is for take of a small number of bottlenose dolphins, by Level B harassment only. Neither the Navy nor NMFS expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

NMFS previously issued several IHAs to the Navy for similar work at NAVSTA Mayport, specifically at Bravo Wharf (81 FR 52637, August 9, 2018; 83 FR 9287, March 5, 2019) and Wharf C-2 (78 FR 71566, November 29, 2013; 80 FR 55598, September 16, 2015). The Navy complied with all the requirements (*e.g.*, mitigation, monitoring, and reporting) of the previous IHAs and information regarding their monitoring results may be found at

https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act.

Description of Proposed Activity

Overview

The Navy proposes to install 240 24-inch (in) steel sheet piles within 5 feet (ft) from the existing South Quay bulkhead located at the end of a channel within the NAVSTA Mayport turning basin along the St. Johns River, Florida. The purpose of the project is to support the existing bulkhead wall that has been weakened by the formation of voids within the wall. The Navy anticipates the entire project will take up to one year; however, in-water pile driving work would be limited to 35 days. The IHA would be valid from February 15, 2020, to February 14, 2021.

Pile driving would elevate noise levels within the turning basin; however, given the location of the South Quay wall at the end of a man-made channel, noise above NMFS harassment thresholds would not extend outside the basin. The configuration of the channel limits noise propagation above the Level B harassment threshold to approximately 0.5 square kilometers (km^2). Bottlenose dolphins (*Tursiops truncatus*) exposed to pile driving may be taken, by Level B harassment. Harassment would be short-term and likely include temporary behavioral modifications (*e.g.*, avoidance, increased swim speeds, foraging changes, etc.).

Dates and Duration

The proposed IHA would be effective February 15, 2010, through February 14, 2021; however, vibratory pile driving is expected to occur for only 30 days with impact pile driving occurring on up to 5 days. Vibratory driving would occur for a maximum of 45 minutes per day while the Navy will only install one pile per day requiring 20 strikes with an impact hammer.

Impact hammering would only occur if the piles cannot be set with a vibratory hammer. Pile driving would be limited to daylight hours only.

Specific Geographic Region

NAVSTA Mayport is located at the mouth of the St. Johns River, approximately 15 miles east of the Jacksonville Central Business District in Duval County, Florida. It is bordered to the north by the St. Johns River, to the south by Jacksonville, to the east by the Atlantic Ocean, and to the west by the Village of Mayport and the Atlantic Coastal Waterway. The Mayport turning basin is a deep-water surface ship berthing facility whose entrance meets the main navigation channel at the mouth of the St. Johns River. Ship berthing facilities are provided at 16 locations along wharves A through F around the turning basin perimeter. The turning basin is approximately 2,000 by 3,000 ft in area, and is connected to the St. Johns River by a 500-ft-wide entrance channel. The South Quay wall is located along the southern edge of the Mayport turning basin (Figure 1). All pile driving would occur at the existing South Quay wall.

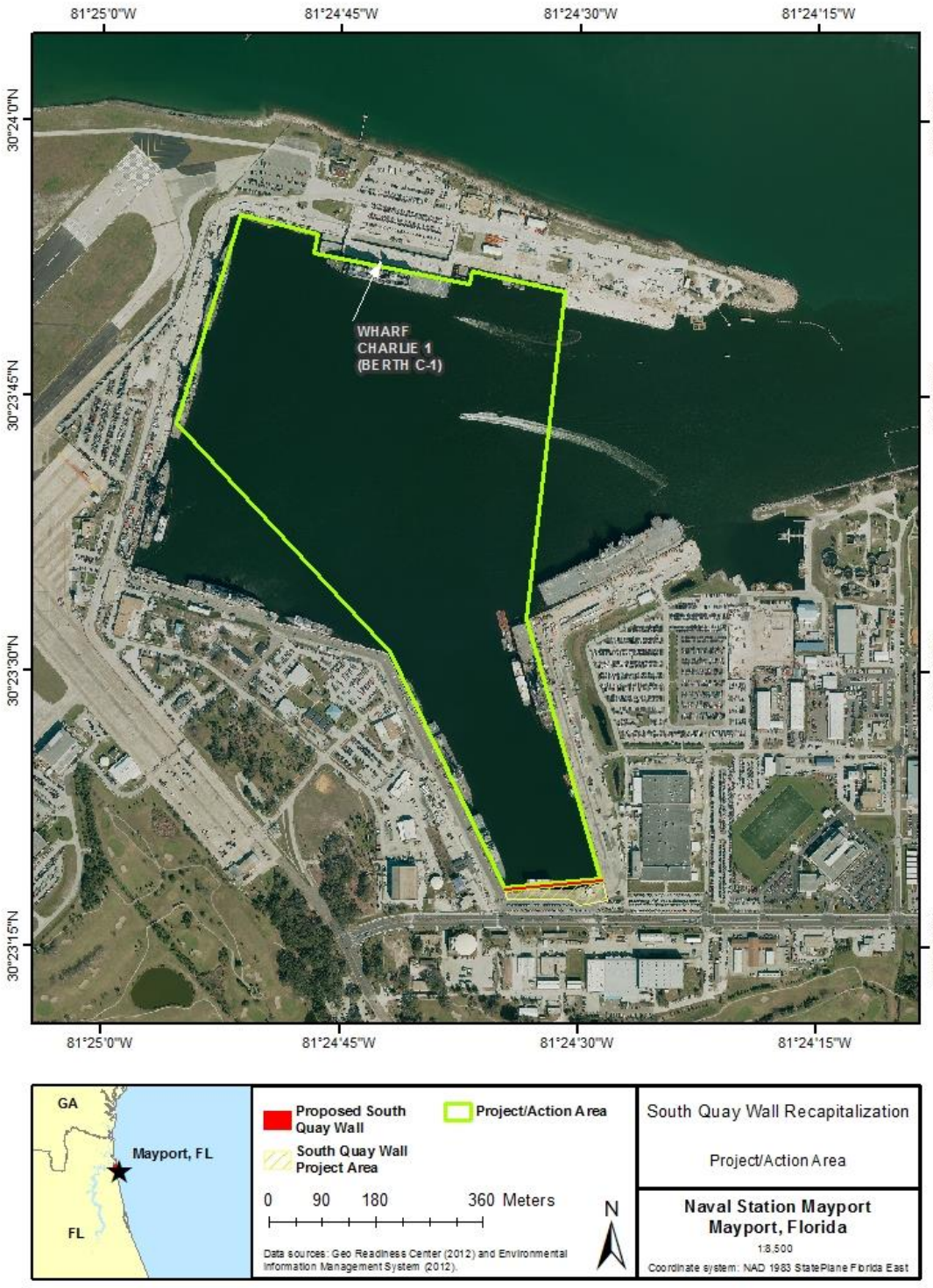

Figure 1. Map of NAVSTA Mayport and the South Quay Wall (red line).

Detailed Description of Specific Activity

The South Quay Wall Recapitalization Project includes the construction of a new sheet pile wall within five ft of the current South Quay wall in order to support the pre-existing bulkhead that has been weakened by the formation of voids within the wall. In-water work includes only pile driving for a new sheet pile bulkhead. The wall will be anchored at the top and fill consisting of clean gravel and/or flowable concrete will be placed behind the wall. Concrete and/or flowable fill will also be used to fill the voids that have formed along the outer edge of the South Quay wall to prevent the further development of surface settling and voids caused by the formation of interconnected cracks, fissures and holes. A concrete cap will be formed along the top and outside face of the wall to tie the entire structure together and provide a berthing surface for vessels.

Depending on weight-bearing and structural integrity issues at the current South Quay wall, either shore-based or barge-based cranes will be used for pile installation. If necessary, a crane barge with a pile installation suite (pile leads, vibratory hammer and an impact hammer) will mobilize to the project site with a material barge. A pile driving template (approximately 25 ft in length) will be mounted to the crane. This allows the crane to control the alignment of the piles as they are driven. Once the crane is properly aligned, the sheet piles will be driven to the appropriate depth using the vibratory hammer. Impact pile driving will only be used as a contingency in cases when vibratory driving is insufficient. Once all of the piles are driven, closure plates will be attached between the existing adjacent sheet pile wall and the new wall end terminations. Typically, these are welded in place using underwater welding techniques.

To construct the new wall, the Navy will install 240 individual sheet piles over the course of 35 days, averaging 7 - 10 sheet piles installed per day, with a maximum of 15

individual piles installed per day. Of the 35 total days of installation, 30 days were reserved for vibratory driving and the remaining 5 days were reserved for contingency impact driving. The Navy estimates each pile will require three minutes of active driving per pile (maximum of 45 minutes per day). When impact driving, the Navy estimates they will install one pile per day, with each pile requiring 20 hammer strikes. The use of impact driving would be restricted to when vibratory driving is insufficient. During a similar project completed at adjacent Wharf C-2, only seven of the several hundred piles installed required use of an impact hammer. Proposed mitigation, monitoring, and reporting measures are described in detail later in this document (please see *Proposed Mitigation* and *Proposed Monitoring and Reporting*).

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS's Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessments*) and more general information about these species (*e.g.*, physical and behavioral descriptions) may be found on NMFS's website (*https://www.fisheries.noaa.gov/fin*d-species).

There are four marine mammal species which may inhabit or transit near NAVSTA Mayport at the mouth of the St. Johns River and in nearby nearshore Atlantic Ocean. These include the bottlenose dolphin, Atlantic spotted dolphin (*Stenella frontalis*), North Atlantic right whale (*Eubalaena glacialis*), and humpback whale (*Megaptera novaeangliae*). Please refer to NMFS' website (*https://www.fisheries.noaa.gov/find-species*) for generalized species accounts and to the Navy's Marine Resource Assessment for the Charleston/Jacksonville Operating Area,

which documents and describes the marine resources that occur in Navy operating areas of the Southeast (Navy, 2008; available at *www.navfac.navy.mil/products_and_services/ev/products_and_services/marine_resources/marine_resource_assessments.html*). All species other than the bottlenose dolphin are not included for further analysis due to extreme rarity within close proximity to NAVSTA Mayport and lack of sightings within NAVSTA Mayport. Unlike previous pile driving projects at NAVSTA Mayport where harassment thresholds extended into the mouth of the St. Johns River and nearby coastal ocean waters, the South Quay wall is positioned such that pile driving noise is not anticipated to propagate outside the turning basin. Therefore, we limit our discussion to bottlenose dolphins.

Table 1 lists bottlenose dolphin stocks with expected potential for occurrence at NAVSTA Mayport and summarizes information related to the population or stock, including regulatory status under the MMPA and ESA and potential biological removal (PBR), where known. For taxonomy, we follow Committee on Taxonomy (2016). PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS's SARs). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS's stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock.

For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS's U.S. 2018 Draft SARs (Hayes *et al.*, 2018). All values presented in Table 1 are the most recent available at the time of publication.

Table 1. Bottlenose Dolphin Stocks Potentially Present at NAVSTA Mayport.

Species	Stock	ESA/MMPA status; Strategic (Y/N)[1]	Stock abundance (CV, N_{min}, most recent abundance survey)[2]	PBR[3]	Annual M/SI[4]	Relative occurrence; season of occurrence
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae						
Bottlenose dolphin	Western North Atlantic, southern migratory coastal	-/D; Y	9,173 (0.46; 6,326; 2010-11)	63	0-12	Possibly common[8]; Jan-Mar
	Western North Atlantic, northern Florida coastal	-/D; Y	1,219 (0.67; 730; 2010-11)	7	0.4	Possibly common[8]; year-round
	Jacksonville Estuarine System[6]	-; Y	412[7] (0.06; unk; 1994-97)	undet.	1.2	Possibly common[8]; year-round

[1]ESA status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR (see footnote 3) or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

[2]CV is coefficient of variation; N_{min} is the minimum estimate of stock abundance. In some cases, CV is not applicable.. For certain stocks, abundance estimates are actual counts of animals and there is no associated CV. The most recent abundance survey that is reflected in the abundance estimate is presented; there may be more recent surveys that have not yet been incorporated into the estimate.

[3]Potential biological removal, defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population size (OSP).

[4]These values, found in NMFS' SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.*, commercial fisheries, subsistence hunting, ship strike). Annual M/SI often cannot be

determined precisely and is in some cases presented as a minimum value. All values presented here are from the draft 2015 SARs (*www.nmfs.noaa.gov/pr/sars/draft.htm*).

[5]Abundance estimates (and resulting PBR values) for these stocks are new values presented in the draft 2015 SARs. This information was made available for public comment and is currently under review and therefore may be revised prior to finalizing the 2015 SARs. However, we consider this information to be the best available for use in this document.

[6]Abundance estimates for this stock are greater than eight years old and are therefore not considered current. PBR is considered undetermined for these stocks, as there is no current minimum abundance estimate for use in calculation. We nevertheless present the most recent abundance estimates and PBR values, as these represent the best available information for use in this document.

[7]This abundance estimate is considered an overestimate because it includes non- and seasonally-resident animals.

[8]Bottlenose dolphins in general are common in the project area, but it is not possible to readily identify them to stock. Therefore, these three stocks are listed as possibly common as we have no information about which stock commonly only occurs.

All species that could potentially occur in the proposed survey areas are included in Table 1. As described below, all three bottlenose dolphin stocks temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur, and we have proposed authorizing it.

In addition, the West Indian manatee (*Trichechus manatus latirostris*) may be found at NAVSTA Mayport. However, manatees are managed by the U.S. Fish and Wildlife Service and are not considered further in this document.

In the Mayport area, four stocks of bottlenose dolphins are currently managed, none of which are protected under the ESA. Of the four stocks – offshore, southern migratory coastal, northern Florida coastal, and Jacksonville estuarine system – only the latter three are likely to occur in the action area. Bottlenose dolphins typically occur in groups of 2-15 individuals (Shane *et al.*, 1986; Kerr *et al.*, 2005). Although significantly larger groups have also been reported, smaller groups are typical of shallow, confined waters. In addition, such waters typically support some degree of regional site fidelity and limited movement patterns (Shane *et al.*, 1986; Wells *et al.*, 1987). Observations made during marine mammal surveys conducted during 2012-2013 in the Mayport turning basin show bottlenose dolphins typically occurring

individually or in pairs, or less frequently in larger groups. The maximum observed group size during these surveys is six, while the mode is one. Navy observations indicate that bottlenose dolphins rarely linger in a particular area in the turning basin, but rather appear to move purposefully through the basin and then leave, which likely reflects a lack of biological importance for these dolphins in the basin. Based on currently available information, it is not possible to determine the stock to which the dolphins occurring in the action area may belong. These stocks are described in greater detail below.

Western North Atlantic Offshore – This stock, consisting of the deep-water ecotype or offshore form of bottlenose dolphin in the western North Atlantic, is distributed primarily along the outer continental shelf and continental slope, but has been documented to occur relatively close to shore (Waring *et al.*, 2014). The separation between offshore and coastal morphotypes varies depending on location and season, with the ranges overlapping to some degree south of Cape Hatteras. Based on genetic analysis, Torres *et al.* (2003) found a distributional break at 34 km from shore, with the offshore form found exclusively seaward of 34 km and in waters deeper than 34 meters (m). Within 7.5 km of shore, all animals were of the coastal morphotype. More recently, coastwide, systematic biopsy collection surveys were conducted during the summer and winter to evaluate the degree of spatial overlap between the two morphotypes. South of Cape Hatteras, spatial overlap was found although the probability of a sampled group being from the offshore morphotype increased with increasing depth, and the closest distance for offshore animals was 7.3 km from shore (Garrison *et al.*, 2003). Noise from the project would not extent outside of the Mayport basin; therefore, individuals of the offshore morphotype would not be affected by project activities. Thus, this stock is thus excluded from further analysis.

Western North Atlantic Coastal, Southern Migratory – The coastal morphotype of bottlenose dolphin is continuously distributed from the Gulf of Mexico to the Atlantic and north approximately to Long Island (Waring *et al.*, 2014). On the Atlantic coast, Scott *et al.* (1988) hypothesized a single coastal stock, citing stranding patterns during a high mortality event in 1987-88 and observed density patterns. More recent studies demonstrate that there is instead a complex mosaic of stocks (Zolman, 2002; McLellan *et al.*, 2002; Rosel *et al.*, 2009). The coastal morphotype was managed by NMFS as a single stock until 2009, when it was split into five separate stocks, including northern and southern migratory stocks. The original, single stock of coastal dolphins recognized from 1995-2001 was listed as depleted under the MMPA as a result of a 1987-88 mortality event. That designation was retained when the single stock was split into multiple coastal stocks. Therefore, all coastal stocks of bottlenose dolphins are listed as depleted under the MMPA, and are also considered strategic stocks.

According to the Scott *et al.* (1988) hypothesis, a single stock was thought to migrate seasonally between New Jersey (summer) and central Florida (winter). Instead, it was more recently determined that a mix of resident and migratory stocks exists, with the migratory movements and spatial distribution of the southern migratory stock the most poorly understood of these. Stable isotope analysis and telemetry studies provide evidence for seasonal movements of dolphins between North Carolina and northern Florida (Knoff, 2004; Waring *et al.*, 2014), and genetic analyses and tagging studies support differentiation of northern and southern migratory stocks (Rosel *et al.*, 2009; Waring *et al.*, 2014). Although there is significant uncertainty regarding the southern migratory stock's spatial movements, telemetry data indicates that the stock occupies waters of southern North Carolina (south of Cape Lookout) during the fall (October-December). In winter months (January-March), the stock moves as far

south as northern Florida where it overlaps spatially with the northern Florida coastal and Jacksonville estuarine system stocks. In spring (April-June), the stock returns north to waters of North Carolina, and is presumed to remain north of Cape Lookout during the summer months. Therefore, the potential exists for harassment of southern migratory dolphins, most likely during the winter.

Western North Atlantic Coastal, Northern Florida – The Northern Florida Coastal Stock is delimited as the dolphins of the coastal morphotype inhabiting coastal waters from the shoreline to approximately the 200-m isobath from the Georgia/Florida border (30.7° N) south to 29.4° N (Figure 1). The northern and southern boundaries for this stock are provisional, as the spatial extent of this stock is poorly understood. During cold water months, this stock likely overlaps with the Southern Migratory Coastal Stock, which is thought to migrate south from waters of southern Virginia and north central North Carolina in the summer to waters south of Cape Fear and as far south as coastal Florida during winter months (Garrison *et al.* 2017).

Jacksonville Estuarine System – The Jacksonville estuarine system (JES) stock has been defined as separate primarily by the results of photo-identification and genetic studies. The stock range is considered to be bounded in the north by the Georgia-Florida border at Cumberland Sound, extending south to approximately Jacksonville Beach, Florida. This encompasses an area defined during a photo-identification study of bottlenose dolphin residency patterns in the area (Caldwell, 2001), and the borders are subject to change upon further study of dolphin residency patterns in estuarine waters of southern Georgia and northern/central Florida. The habitat is comprised of several large brackish rivers, including the St. Johns River, as well as tidal marshes and shallow riverine systems. Three behaviorally different communities were identified during Caldwell's (2001) study: the estuarine waters north (Northern) and south

(Southern) of the St. Johns River and the coastal area, all of which differed in density, habitat fidelity and social affiliation patterns. The coastal dolphins are believed to be members of a coastal stock, however (Waring *et al.*, 2014). Although Northern and Southern members of the JES stock show strong site fidelity, members of both groups have been observed outside their preferred areas. Dolphins residing within estuaries south of Jacksonville Beach down to the northern boundary of the Indian River Lagoon Estuarine System (IRLES) stock are currently not included in any stock, as there are insufficient data to determine whether animals in this area exhibit affiliation to the JES stock, the IRLES stock, or are simply transient animals associated with coastal stocks. Further research is needed to establish affinities of dolphins in the area between the ranges, as currently understood, of the JES and IRLES stocks.

All bottlenose dolphins stocks described above are susceptible to fisheries interactions, including those from trawls, hook and line, crab pot/traps, and gill nets and seine nets. Other sources of mortality include the morbillivirus which has been implicated in unusual mortality events (UMEs) for dolphins along the southeast coast of the United States. The amount of known serious injury and mortality from all sources are presented in Table 1 for each stock.

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Current data indicate that not all marine mammal species have equal hearing capabilities (*e.g.*, Richardson *et al.*, 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007, 2019) recommended that marine mammals be divided into functional hearing groups based on directly measured or estimated hearing ranges

on the basis of available behavioral response data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data. Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.*, low-frequency cetaceans). NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in Table 2.

Table 2. Marine Mammal Hearing Groups (NMFS, 2018).

Hearing Group	Generalized Hearing Range*
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
High-frequency (HF) cetaceans (true porpoises, *Kogia*, river dolphins, cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*)	275 Hz to 160 kHz
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz
***** Represents the generalized hearing range for the entire group as a composite (*i.e.*, all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall *et al.* 2007) and PW pinniped (approximation).	

The pinniped functional hearing group was modified from Southall *et al.* (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al.*, 2006; Kastelein *et al.*, 2009). For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information.

One cetacean species is expected to potentially be affected by the specified activity. Bottlenose dolphins are classified as mid-frequency cetaceans.

Potential Effects of Specified Activities on Marine Mammals and their Habitat

This section includes a summary and discussion of the ways that components of the specified activity may impact marine mammals and their habitat. The *Estimated Take by Incidental Harassment* section later in this document includes a quantitative analysis of the number of individuals that are expected to be taken by this activity. The *Negligible Impact Analysis and Determination* section considers the content of this section, the *Estimated Take by Incidental Harassment* section, and the *Proposed Mitigation* section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and how those impacts on individuals are likely to impact marine mammal species or stocks.

The effects of sounds from pile driving might result in one or more of the following: temporary or permanent hearing impairment, non-auditory physical or physiological effects, behavioral disturbance, and masking (Richardson *et al.*, 1995; Gordon *et al.*, 2003; Nowacek *et al.*, 2007; Southall *et al.*, 2007). The effects of pile driving on marine mammals are dependent on several factors, including the size, type, and depth of the animal; the depth, intensity, and duration of the pile driving sound; the depth of the water column; the substrate of the habitat; the standoff distance between the pile and the animal; and the sound propagation properties of the environment. Impacts to marine mammals from pile driving activities are expected to result primarily from acoustic pathways. As such, the degree of effect is intrinsically related to the received level and duration of the sound exposure, which are in turn influenced by the distance between the animal and the source. The further away from the source, the less intense the

exposure should be. The substrate and depth of the habitat affect the sound propagation properties of the environment. Shallow environments, such as that at NAVSTA Mayport, are typically more structurally complex, which leads to rapid sound attenuation. In addition, substrates that are soft (*e.g.*, sand and mud like at NAVSTA Mayport) would absorb or attenuate the sound more readily than hard substrates (*e.g.*, rock) which may reflect the acoustic wave. Soft porous substrates would also likely require less time to drive the pile, and possibly less forceful equipment, which would ultimately decrease the intensity of the acoustic source.

In general, the effects of sounds from pile driving might result in one or more of the following: temporary or permanent threshold shift (TTS and PTS, respectively), non-auditory physical or physiological effects, behavioral disturbance, and masking (Richardson *et al.*, 1995; Gordon *et al.*, 2003; Nowacek *et al.*, 2007; Southall *et al.*, 2007). PTS and TTS is not anticipated in this case due to the fact all noise would be limited to the Mayport basin and the proposed mitigation and monitoring measures. Any harassment would likely be behavioral in nature. Exposure to pile driving noise can result in dolphin behavioral changes such as avoidance, changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding), and visible startle response or aggressive behavior (such as tail/fluke slapping). As reviewed in Southall *et al.* (2007, 2019), the severity of these reactions can range from mild to severe and the longevity of reactions can be temporary or long-term. Based on marine mammal monitoring data collected by the Navy during previous recapitalization projects involving pile driving (Navy 2016, 2018a, 2018b), dolphins behavior within and around the turning basin include foraging, traveling, and social behavior during and

in absence of pile driving. No reactions attributed to pile driving noise are documented in those reports.

Masking may occur during the short periods of pile driving; however, this is unlikely to become biologically significant. Masking occurs when the receipt of a sound is interfered with by another coincident sound at similar frequencies and at similar or higher levels. Chronic exposure to excessive, though not high-intensity, sound could cause masking at particular frequencies for marine mammals, which utilize sound for vital biological functions. Masking can interfere with detection of acoustic signals such as communication calls, echolocation sounds, and environmental sounds important to marine mammals. Therefore, under certain circumstances, marine mammals whose acoustical sensors or environment are being severely masked could also be impaired from maximizing their performance fitness in survival and reproduction. If the coincident (masking) sound were man-made, it could be potentially harassing if it disrupted hearing-related behavior. It is possible that vibratory pile driving resulting from this proposed action may mask acoustic signals important to bottlenose dolphins, but the short-term duration and limited affected area would result in insignificant impacts from masking. In this case, pile driving durations are relatively short and no significant habitat is located within NAVSTA Mayport. Any masking event that could possibly rise to Level B harassment under the MMPA would occur concurrently within the zones of behavioral harassment already estimated for vibratory and impact pile driving, and which have already been taken into account in the exposure analysis.

Anticipated Effects on Habitat

The proposed activities at NAVSTA Mayport would not result in permanent impacts to habitats used directly by marine mammals as the new wall would be built within five ft of the

existing wall, but may have potential short-term impacts to food sources such as forage fish and may affect acoustic habitat (see masking discussion above). There are no known foraging hotspots or other ocean bottom structure of significant biological importance to marine mammals present in the marine waters of the project area; however the surrounding areas may be foraging habitat for the dolphins. Therefore, the main impact issue associated with the proposed activity would be temporarily elevated sound levels and the associated direct effects on marine mammals, as discussed previously in this document. The most likely impact to marine mammal habitat occurs from pile driving effects on likely marine mammal prey (*i.e.*, fish) and minor impacts to the immediate substrate and water column (*e.g.*, elevated turbidity) during installation and removal of piles during the wharf construction project. The Mayport turning basin itself is a man-made basin with significant levels of industrial activity and regular dredging, and is unlikely to harbor significant amounts of forage fish. Thus, any impacts to marine mammal habitat are not expected to cause significant or long-term consequences for individual marine mammals or their populations.

Estimated Take

This section provides an estimate of the number of incidental takes proposed for authorization through this IHA, which will inform both NMFS' consideration of "small numbers" and the negligible impact determination.

Harassment is the only type of take expected to result from these activities. Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of

behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Authorized takes would be by Level B harassment only, in the form of disruption of behavioral patterns for individual marine mammals resulting from exposure to pile driving. Based on the nature of the activity and the anticipated effectiveness of the mitigation measures (*i.e.*, shutdown– discussed in detail below in Proposed Mitigation section, Level A harassment is neither anticipated nor proposed to be authorized.

As described previously, no mortality is anticipated or proposed to be authorized for this activity. Below we describe how the take is estimated.

Generally speaking, we estimate take by considering: (1) acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) and the number of days of activities. We note that while these basic factors can contribute to a basic calculation to provide an initial prediction of takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.*, previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the proposed take estimate.

Acoustic Thresholds

Using the best available science, NMFS has developed acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

Level B Harassment for non-explosive sources – Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.*, frequency, predictability, duty cycle), the environment (*e.g.*, bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.*, 2007, Ellison *et al.*, 2012). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 decibels re 1 micoPascal root mean square (dB re 1 µPa rms) for continuous (*e.g.*, vibratory pile-driving, drilling) and above 160 dB re 1 µPa (rms) for non-explosive impulsive (*e.g.*, seismic airguns) or intermittent (*e.g.*, scientific sonar) sources.

The Navy's proposed activity includes the use of continuous (vibratory pile driving) and impulsive (impact pile driving) sources, and therefore the 120 and 160 dB re 1 µPa rms are applicable.

Level A harassment for non-explosive sources - NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise from two different types of sources (impulsive or non-impulsive). The

Navy's proposed activity includes the use of impulsive (impact pile driving) and non-impulsive (vibratory pile driving) sources.

These thresholds are provided in the Table 3 below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2018 Technical Guidance, which may be accessed at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance*.

Table 3. Thresholds identifying the onset of Permanent Threshold Shift.

	PTS Onset Acoustic Thresholds* (Received Level)	
Hearing Group	**Impulsive**	**Non-impulsive**
Low-Frequency (LF) Cetaceans	*Cell 1* $L_{pk,flat}$: 219 dB $L_{E,LF,24h}$: 183 dB	*Cell 2* $L_{E,LF,24h}$: 199 dB
Mid-Frequency (MF) Cetaceans	*Cell 3* $L_{pk,flat}$: 230 dB $L_{E,MF,24h}$: 185 dB	*Cell 4* $L_{E,MF,24h}$: 198 dB
High-Frequency (HF) Cetaceans	*Cell 5* $L_{pk,flat}$: 202 dB $L_{E,HF,24h}$: 155 dB	*Cell 6* $L_{E,HF,24h}$: 173 dB
Phocid Pinnipeds (PW) (Underwater)	*Cell 7* $L_{pk,flat}$: 218 dB $L_{E,PW,24h}$: 185 dB	*Cell 8* $L_{E,PW,24h}$: 201 dB
Otariid Pinnipeds (OW) (Underwater)	*Cell 9* $L_{pk,flat}$: 232 dB $L_{E,OW,24h}$: 203 dB	*Cell 10* $L_{E,OW,24h}$: 219 dB

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

Note: Peak sound pressure (L_{pk}) has a reference value of 1 µPa, and cumulative sound exposure level (L_E) has a reference value of 1µPa^{2}s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (*i.e.*, varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds, which include source levels and transmission loss coefficient.

The Navy used results from previous sound source verification tests at NAVSTA Mayport to estimate vibratory pile driving source levels. Vibratory driving of steel sheet piles was monitored during the first year of construction at the nearby C-2 Wharf at NAVSTA Mayport during 2015. Measurements were conducted from a small boat in the turning basin and from the construction barge itself. Driving periods ranged from approximately 17 seconds to a little over one minute. Sound levels were recorded at a 10-m distance and the measured dB levels were converted to pressure values to generate 10-second averages of the levels before converting the values back to dB levels. The average and median of the levels resulted in a source level of 156 dB re 1µPa rms (Navy 2017).

No impact driving was conducted during this acoustic monitoring; therefore, the Navy relied on Caltrans (2015) to estimate source levels during impact pile driving of the 24-in sheet piles. The selected sound pressure levels used for modeling impact driving steel piles are 180 dB single-strike sound exposure level (SEL), 190 dB rms, and 205 dB peak. These values were also used in previous Navy Mayport IHAs without concern or public comment.

When the NMFS Technical Guidance (2016) was published, in recognition of the fact that ensonified area/volume could be more technically challenging to predict because of the duration component in the new thresholds, we developed a User Spreadsheet that includes tools to help predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to help predict takes. We note that because of some of the assumptions included in

the methods used for these tools, we anticipate that isopleths produced are typically going to be overestimates of some degree, which may result in some degree of overestimate of Level A harassment take. However, these tools offer the best way to predict appropriate isopleths when more sophisticated 3D modeling methods are not available, and NMFS continues to develop ways to quantitatively refine these tools, and will qualitatively address the output where appropriate. For stationary sources (such as pile driving), NMFS User Spreadsheet predicts the closest distance at which, if a marine mammal remained at that distance the whole duration of the activity, it would not incur PTS. Inputs used in the User Spreadsheet and the resulting isopleths are reported below (Table 4).

Vibratory pile driving, in general, does have the potential to cause injury to marine mammals if the duration of activity and source level are such that the threshold for injury in mid-frequency cetaceans (198 dB SEL_{cum}) is exceeded. In this case, the duration is short enough and source level low enough to where a dolphin must be within less than 1m of the pile for the entire duration of activity (45 minutes per day); therefore, the potential for injury is discountable. Impact pile driving also has the potential to result in PTS; impact driving produces short, sharp pulses with higher peak levels than vibratory driving as well as sharp rise time to reach those peaks. However, the Navy is proposing to install only one pile per day (at 20 strikes per pile) resulting in very small isopleths (we note the peak threshold resulted in smaller isopleth that than the SEL threshold). As evident by the very small isopleths in Table 4, the potential for Level A harassment is discountable. As a result of this analysis, the Navy has not requested, nor is NMFS proposing to authorize, take by Level A harassment; therefore, it will not be discussed further.

Table 4. User Spreadsheet Input Values.

USER SPREADSHEET INPUT	Impact Pile Driving	Vibratory Pile Driving
Spreadsheet Tab Used	E.1) Impact pile driving	A) Non-Impulse-Stat-Cont
Source Level	180 dB SEL/205 dB peak	156 dBrms
Weighting Factor Adjustment (kHz)	2	2.5
b) Number of strikes per pile	20	N/A
b) Number of piles per day	1	0.75 (15 piles x 3 minutes per pile)
Propagation (xLogR)	15	15
Distance of source level measurement (meters)+	10	10
Level A Harassment Isopleth (mid-frequency cetaceans)	1.7 m	0.2 m

To calculate the Level B harassment ensonified area, the Navy identified distances to the Level B harassment thresholds for impact and vibratory pile driving (160 dB rms and 120 dB rms, respectively) using a practical spreading loss model. Resulting isopleth distances and ensonified areas (corrected in ArcView GIS to eliminate land; see the Navy's application for more details) are presented in Table 5.

Table 5. Level B Harassment Isopleths and Ensonfied Areas.

Pile Type	Driving Method (source level)	Distance (m)	Area (km^2)
24" Steel sheet piles	Vibratory (156 dB rms)	0.2	0.0002
		2,512	0.4104
	impact (190 dB rms)	1.7	0.0006
		1,000	0.3540

Marine Mammal Occurrence

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations.

Bottlenose dolphin density used for this analysis was based on surveys conducted to support wharf recapitalization projects within the Mayport turning basin (Navy, 2015). Those surveys demonstrated dolphin presence and abundance is not uniform throughout the year. Because it is unknown exactly when pile driving will commence and be completed within the effective period of the proposed IHA, the Navy applied the highest seasonal density of 4.15366 dolphins per km^2 to the estimated take analysis. This density has been used in previous IHAs issued to the Navy for wharf recapitalization projects within the Mayport turning basin without public comment or concern.

Take Calculation and Estimation

Here we describe how the information provided above is brought together to produce a quantitative take estimate.

Bottlenose dolphin density was multiplied by the size of the relevant zone of influence and number of piles driven to determine the estimated number of Level B harassment exposures per day. Resulting vibratory and impact hammering exposures were summed across days to produce a total exposure estimate:

Exposure = (density x vibratory driving ensonfied area x number of vibratory pile driving days) + (density x impact driving ensonfied area x number of impact pile driving days).

The same methodology was used to estimate takes for work at Wharf Bravo, completed in 2017-18. During that project, two to three marine mammal observers were stationed strategically to cover the entire Level B harassment area. The number of detected takes for that project was only 30 percent of the number authorized; therefore, this method is considered reliable.

The Navy is requesting, and NMFS is proposing to authorize, 58 takes by Level B harassment incidental to vibratory and impact driving at the South Quay wall. The stocks from which these take could occur are provided in Table 1. Because it is not possible to distinguish stocks in the field, we assume all 58 takes could occur to any single stock. As described above, no Level A take is anticipated or authorized.

Proposed Mitigation

In order to issue an IHA under Section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting such activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, we carefully consider two primary factors:

(1) the manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be

effective if implemented (probability of accomplishing the mitigating result if implemented as planned), the likelihood of effective implementation (probability implemented as planned); and

(2) the practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

The Navy has proposed identical mitigation to that required in previous IHAs for work at NAVSTA Mayport, as described in detail in the draft IHA posted on NMFS' website at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities*. Pile driving will only be conducted during daylight hours. For all pile driving, the Navy shall implement a minimum shutdown zone of 15-m radius around the pile and around any other in-water construction equipment. If a marine mammal approaches or enters the shutdown zone, all pile driving activities will be halted. If pile driving is halted or delayed due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily left and been visually confirmed beyond the shutdown zone or fifteen minutes have passed without re-detection of the animal.

For all pile driving activities, a minimum of two protected species observers (PSOs) shall be on watch, with one positioned to achieve optimal monitoring of the shutdown zone and the second positioned to achieve optimal monitoring of monitoring (Level B harassment) zone. Observers may be stationed in a tall building at NAVSTA Mayport, the construction barge, small vessels, or on the wharf at a location that will provide adequate visual coverage for the marine mammal shutdown zone.

The Navy will use soft start techniques for impact pile driving. Soft start requires contractors to provide an initial set of strikes at reduced energy, followed by a thirty-second waiting period, then two subsequent reduced energy strike sets. Soft start shall be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of thirty minutes or longer.

If a species for which authorization has not been granted, or a species for which authorization has been granted but the authorized takes are met, is observed approaching or within the monitoring zone, pile driving and removal activities must shut down immediately using delay and shut-down procedures. Activities must not resume until the animal has been confirmed to have left the area or fifteen minutes have passed without re-detection of the animal.

Proposed Monitoring and Reporting

In order to issue an IHA for an activity, Section 101(a)(5)(D) of the MMPA states that NMFS must set forth requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.*, presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) action or environment (*e.g.*, source characterization, propagation, ambient noise); (2) affected species (*e.g.*, life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.*, age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.*, marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and
- Mitigation and monitoring effectiveness.

Marine Mammal Monitoring

The Navy would conduct marine mammal monitoring using two NMFS-approved PSOs stationed at strategic locations at NAVSTA Mayport, per their Marine Mammal Monitoring Plan, dated April 2019. Monitoring will take place from 30 minutes prior to initiation of pile driving activity through thirty minutes post-completion of pile driving activity. In the event of a delay or shutdown of activity resulting from marine mammals in the shutdown zone, their behavior shall be monitored and documented. No techniques (*e.g.*, pingers, boats) will be used

to entice animals to leave the area. Monitoring shall occur throughout the time required to drive a pile and continue 30 minutes after pile driving ceases. The shutdown zone must be determined to be clear during periods of good visibility (*i.e.,* the entire shutdown zone and surrounding waters must be visible to the naked eye).

PSOs will be equipped with binoculars (7 x 50 power or greater) to ensure sufficient visual acuity and magnification while investigating sightings, portable radios or cellular phone(s) to rapidly communicate with the appropriate construction personnel to initiate shutdown of pile driving activity if required, a digital camera for photographing any marine species sighted, data collection forms, and a compass or GPS.

The Navy shall collect sighting data for marine mammal species observed in the region of activity during the period of activity. All observers shall be trained in marine mammal identification and behaviors, and shall have no other construction-related tasks while conducting monitoring.

PSOs will use approved data forms. Among other pieces of information, the Navy will record detailed information about any implementation of shutdowns, including the distance of animals to the pile and description of specific actions that ensued and resulting behavior of the animal(s), if any. In addition, the Navy will attempt to distinguish between the number of individual animals taken and the number of incidences of take.

Reporting

A draft report will be submitted to NMFS within 90 days of the completion of marine mammal monitoring, or sixty days prior to the requested date of issuance of any future IHA for projects at the same location, whichever comes first. The report will include marine mammal observations pre-activity, during-activity, and post-activity during pile driving days, and will

also provide descriptions of any behavioral responses to construction activities by marine mammals and a complete description of all mitigation shutdowns and the results of those actions and an extrapolated total take estimate based on the number of marine mammals observed during the course of construction. A final report must be submitted within thirty days following resolution of comments on the draft report. Should the Navy encounter a dead or injured marine mammal, additional reporting procedures would be taken.

All specific monitoring and reporting requirements are available for review in the draft IHA (*https://www.fisheries.noaa.gov/national/marine-mammal-protection/incidental-take-authorizations-construction-activities*).

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.*, population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be "taken" through harassment, NMFS considers other factors, such as the likely nature of any responses (*e.g.*, intensity, duration), the context of any responses (*e.g.*, critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS's implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are

incorporated into this analysis via their impacts on the environmental baseline (*e.g.*, as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

Pile driving activities associated with the South Quay Wall Recapitalization Project, as outlined previously, have the potential to disturb or displace marine mammals. Specifically, the specified activities may result in take, in the form of Level B harassment (behavioral disturbance) only, from underwater sounds generated from pile driving. Potential takes could occur if individuals of these species are present in the ensonified zone when pile driving is happening.

No injury, serious injury, or mortality is anticipated given the nature of the activities and measures designed to minimize the possibility of injury to marine mammals. The potential for these outcomes is avoided through the construction methods and the implementation of the planned mitigation measures such that take by Level A harassment (injury), serious injury and mortality is not proposed to be authorized.

Effects on individuals that are taken by Level B harassment, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (*e.g.*, Thorson and Reyff 2006; HDR Inc. 2012). Most likely, individuals will simply move away from the sound source and be temporarily displaced from the areas of pile driving, although even this reaction has been observed primarily only in association with impact pile driving. The pile driving activities analyzed here are identical to previous NAVSTA Mayport recapilization projects, which have taken place with no reported injuries or mortality to marine mammals, and no known long-term adverse consequences on

bottlenose dolphins from behavioral harassment. In fact, marine mammal reports from previous projects requiring incidental harassment authorizations have found that the dolphins observed did not exhibit notable reactions attributed to pile driving noise at NAVSTA Mayport. In those reports (*e.g.*, Navy 2016, 2018a, 2018b), traveling and foraging behaviors were most common with no overt changes in behavior observed during pile driving.

Repeated exposures of individuals to levels of sound that may cause Level B harassment are unlikely to result in hearing impairment or to significantly disrupt foraging behavior. A very limited amount of pile driving would occur each day, making extended durations of exposure necessary to cause hearing impairment unlikely. Further, as described above, marine mammal monitoring reports indicate foraging behavior continues despite projects requiring the installation of several hundred piles. Thus, even repeated Level B harassment of some small subset of the overall stock is unlikely to result in decrease in fitness for the affected individuals, and thus would not result in any adverse impact to the stock as a whole. Level B harassment severity will also be reduced to the level of least practicable impact through use of mitigation measures described herein and, if sound produced by project activities is sufficiently disturbing, animals are likely to simply avoid the turning basin while the activity is occurring. Finally, NAVSTA Mayport is a small, man-made military basin that does not include any significant marine mammal habitat or biologically important area.

In summary and as described above, the following factors primarily support our preliminary determination that the impacts resulting from this activity are not expected to adversely affect the species or stock through effects on annual rates of recruitment or survival:

- No mortality or injury is anticipated or authorized;

- Behavioral disturbance is possible, but expected to be minimal due to the limited duration of activities (no more than 35 days of pile driving during the proposed authorized year, the time required to drive each pile is brief (less than one hour of vibratory driving per day and no more than 20 impact strikes per day), and the proposed mitigation (*e.g.* shut-downs and soft start) would reduce acoustic impacts to species in the area of activities; and
- The absence of any significant habitat within the project area, including known areas or features of special significance for foraging or reproduction.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS preliminarily finds that the total marine mammal take from the proposed activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted above, only small numbers of incidental take may be authorized under Sections 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

Of the 58 incidents of behavioral harassment proposed for bottlenose dolphins, we have no information allowing us to parse the predicted incidents amongst the three stocks that may occur in the project area. Therefore, we assessed the total number of predicted incidents of take

against the best abundance estimate for each stock, as though the total would occur for the stock in question. For the Florida Coastal and Southern Migratory Coastal stocks, total predicted number of incidents of take authorized would be considered small at less than 5 percent and 1 percent, respectively.

The total number of authorized takes proposed for bottlenose dolphins of the Jacksonville Estuarine stock, if assumed to accrue solely to new individuals, is higher relative to current stock abundance compared to these two stocks at 14.07 percent. This assumes all 58 exposures occur to 58 individuals. This percentage is still relatively low and it is unlikely that all takes would occur to new individuals within this stock and this estimate all takes would occur to this one stock. Bottlenose dolphins belonging to estuarine stocks exhibit high site fidelity, resulting in higher likelihood of repeated exposure.

Based on the analysis contained herein of the proposed activity (including the proposed mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS preliminarily finds that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

There are no relevant subsistence uses of the affected marine mammal stocks or species implicated by this action. Therefore, NMFS has preliminarily determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act (ESA)

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA: 16 U.S.C. 1531 *et seq*.) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not

likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS consults internally, in this case with the Southeast Regional Protected Resources Division, whenever we propose to authorize take for endangered or threatened species.

No incidental take of ESA-listed species is proposed for authorization or expected to result from this activity. Therefore, NMFS has determined that formal consultation under section 7 of the ESA is not required for this action.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to the Navy for conducting pile driving at NAVSTA Mayport from February 15, 2020, to February 14, 2021, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. A draft of the proposed IHA can be found at *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act*.

Request for Public Comments

We request comment on our analyses, the proposed authorization, and any other aspect of this Notice of Proposed IHA for the proposed South Quay Wall Recapitalization Project. We also request comment on the potential for renewal of this proposed IHA as described in the paragraph below. Please include with your comments any supporting data or literature citations to help inform our final decision on the request for MMPA authorization.

On a case-by-case basis, NMFS may issue a one-year IHA renewal with an expedited public comment period (15 days) when (1) another year of identical or nearly identical activities

as described in the Specified Activities section is planned or (2) the activities would not be completed by the time the IHA expires and a second IHA would allow for completion of the activities beyond that described in the Dates and Duration section, provided all of the following conditions are met:

- A request for renewal is received no later than 60 days prior to expiration of the current IHA;
- The request for renewal must include the following:

(1) An explanation that the activities to be conducted under the proposed Renewal are identical to the activities analyzed under the initial IHA, are a subset of the activities, or include changes so minor (*e.g.*, reduction in pile size) that the changes do not affect the previous analyses, mitigation and monitoring requirements, or take estimates (with the exception of reducing the type or amount of take because only a subset of the initially analyzed activities remain to be completed under the Renewal); and

(2) A preliminary monitoring report showing the results of the required monitoring to date and an explanation showing that the monitoring results do not indicate impacts of a scale or nature not previously analyzed or authorized; and

- Upon review of the request for renewal, the status of the affected species or stocks, and any other pertinent information, NMFS determines that there are no more than minor changes in the activities, the mitigation and monitoring measures will remain the same and appropriate, and the findings in the initial IHA remain valid.

Dated: May 16, 2019.

Donna S. Wieting,

Director,

Office of Protected Resources,

National Marine Fisheries Service.

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