



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

APR 30 2018

Gina Paduano Ralph, Ph.D.
Chief, Environmental Branch
U.S. Army Corps of Engineers
701 San Marco Boulevard
Jacksonville, FL 32207-0019

Dear Dr. Ralph

Enclosed is an Incidental Harassment Authorization (IHA) issued pursuant to Section 101(a)(5)(D) of the Marine Mammal Protection Act, to take small numbers of marine mammals, by Level B harassment, incidental to the confined blasting activities in the East Channel of the Big Bend Channel, Tampa Harbor, FL during the September 2019 through August 2020 work season.

You are required to comply with the conditions contained in the IHA, including all mitigation, monitoring and reporting requirements. Along with mitigation measures to be incorporated, the IHA requires monitoring for the presence and behavior of marine mammals prior to, during, and after all activities.

If you have any questions concerning the IHA or its requirements, please contact Dale Youngkin or Jolie Harrison, Office of Protected Resources, at 301-427-8401.

Sincerely,

Donna S. Wieting
Director, Office of Protected Resources
National Marine Fisheries Service

Enclosure



Incidental Harassment Authorization

U.S. Army Corps of Engineers, Jacksonville District, P.O. Box 4970, Jacksonville, Florida (FL) 32232, is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA) (16 U.S.C. 1371(a)(5)(D)), to harass small numbers of marine mammals incidental to blasting operations in the East Channel of the Big Bend Channel as part of the Tampa Harbor Big Bend Channel Expansion Project in Hillsborough Bay (part of Tampa Bay) in Hillsborough County, Florida:

1. This Authorization is valid from April 1, 2019, through March 31, 2020, but blasting may occur only between April 1 and October 31, annually unless the U.S. Fish and Wildlife Service (USFWS) grants an extension of the blasting period.

2. This Authorization is valid only for the U.S. Army Corps of Engineers (USACE) activities associated with the blasting within the East Channel of the Big Bend Channel in the Tampa Harbor in Hillsborough County, Florida.

3. Species Authorized and Level of Takes

(a) The incidental taking of marine mammals, by Level B harassment only, is limited to the following species in the waters of Hillsborough Bay (part of Tampa Bay) and the Atlantic Ocean:

(i) Odontocetes – 245 takes from the Tampa Bay Stock of Atlantic bottlenose dolphin (*Tursiops truncatus*) by Level B harassment only (comprised of 166 takes by behavioral harassment 79 takes by TTS).



(ii) If any marine mammal species under NMFS jurisdiction other than bottlenose dolphin are encountered during blasting operations and are likely to be exposed to sound thresholds equal to or greater than Level B harassment, then the Holder of this Authorization must delay or suspend blasting operations to avoid take.

(b) The taking by injury (Level A harassment), serious injury, or death of any of the species listed in Condition 3(a) above or the taking of any kind of any other species of marine mammal is prohibited and may result in the modification, suspension or revocation of this Authorization.

4. The methods authorized for taking by Level B harassment are limited to explosives with a maximum charge weight per delay of 40 lb (18.1 kg)

5. The taking of any marine mammal in a manner prohibited under this Authorization must be reported immediately to the Office of Protected Resources, National Marine Fisheries Service (NMFS), at 301-427-8401.

6. Mitigation and Monitoring Requirements

The Holder of this Authorization is required to implement the following mitigation and monitoring requirements when conducting the specified activities to achieve the least practicable impact on affected marine mammal species or stocks:

(a) The USACE must ensure that the Florida Fish and Wildlife Conservation Commission (FWC), the U.S. Fish and Wildlife Service (USFWS), and NMFS (Headquarters Protected Resources Division and SERO Protected Resources) are provided the contractor's approved blasting plan for review prior to any blasting activities. This blasting proposal must include information concerning a watch program and details of the blasting events. This

information must be submitted at least 30 days prior to the proposed date of the blast(s) to the following addresses:

(i) FWC-ISM

620 South Meridian Street

Mail Stop 6A

Tallahassee, FL 32399-1600 or

ImperiledSpecies@myfwc.com and Dr. Allen Foley *allen.foley@myfwc.com*

(ii) NMFS Office of Protected Resources

1315 East West Highway

Silver Spring, MD 20910

(iii) NMFS Southeast Regional Office (SERO)

Protected Species Management Branch

263 13th Avenue South

St. Petersburg, FL 33701, and

(iv) USFWS

1339 20th Street

Vero Beach, FL 32960-3559

(b) The contractor's blasting plan shall include at least the following information:

(i) A list of Protected Species Observers (PSOs), their qualifications, and positions for the watch, including a map depicting the proposed locations for boat or land-based PSOs. NMFS-qualified PSOs must have prior on-the-job experience observing for marine mammals and other protected species during previous in-water blasting events where the blasting activities were similar in nature to the blasting project in the Tampa Harbor.

(ii) The amount of explosive charge proposed, the explosive charge's equivalency in TNT, how it will be executed (depth of drilling, stemming, in-water, etc.), a drawing depicting the placement of the charges, size of the exclusion zone, and how it will be marked (also depicted on a map), tide tables for the blasting event(s), and estimates of times and days for blasting events (with an understanding this is an estimate, and may change due to weather, equipment, etc.).

(c) The USACE shall notify the Southeast Regional Office (SERO) (Ms. Laura Engleby, Marine Mammal Branch Chief, nmfs.ser.research.notification@noaa.gov) and the Florida Fish and Wildlife Conservation Commission (Dr. Allen Foley, allen.foley@myfwc.com) at the initiation and completion of all in-water blasting.

(d) The USACE shall notify the local stranding network the day prior to planned confined blasting activities for responders' awareness that blasting activities will be occurring.

(e) A test blast program shall be completed prior to implementing a construction blasting program. The test blast program shall have all the same monitoring and mitigation measures in place for marine mammals and other protected species (see below).

(f) The weight of explosives to be used in each blast shall be limited to the lowest poundage of explosives that can adequately break the rock.

(g) The explosives shall be confined in a hole with drill patterns (*i.e.*, holes in the pattern) that are restricted to a minimum of 8 ft (2.4 m) separation from a loaded hole.

(h) The hours of blasting shall be restricted from two hours after sunrise to one hour before sunset to ensure adequate observation of marine mammals in the project area.

(i) Select explosive products and their practical application method to address vibration and air blast (overpressure) control for protection of existing structures and marine wildlife.

(j) Loaded blast holes shall be individually delayed to reduce the maximum pounds per delay at point detonation (in order to spread the explosive's total pressure over time), which in turn will reduce the mortality radius. Delay timing adjustments with a minimum of eight milliseconds (ms) between delay detonations to stagger the blast pressures and prevent cumulative addition of pressures in the water.

(k) The USACE shall require the contractor to cap the hole containing explosives with rock in order to spread the explosive's outward potential of the blast and total overpressure over time, thereby reducing the chance of injuring a marine mammal or other protected species.

(l) The blast design shall match, to the extent possible, the energy needed in the "work effort" of the borehole to the rock mass to minimize excess energy vented into the water column or hydraulic shock.

(m) Due to USFWS requirements, blasting operations shall not occur during the period from November 1 through March 31 (due to the increased likelihood of manatees (*Trichechus manatus latirostris*) being present within the project area).

(n) Calculate, establish, and monitor a Level A Take Zone (equal to the PTS injury zone), Exclusion (*i.e.*, the Level A Take Zone plus 500 ft [152.4 m]), and a Level B Take Zone (extending from the Exclusion Zone to the Level B behavioral harassment zone radius). All of the zones shall be noted by buoys for each of the blasts.

(o) The watch program shall begin at least one hour prior to the schedule start of blasting to identify the possible presence of marine mammals and is continuous throughout the blast. The watch program shall continue for at least 60 minutes after detonations are complete.

(p) The watch program shall consist of a minimum of six NMFS-qualified PSOs (at least one aerial-based PSO, two boat-based PSOs, two drill barge-based PSOs, and one PSO placed in the most optimal observation location on a day-by-day basis depending on the location of the blast and the placement of dredging equipment). NMFS-qualified PSOs must be approved in advance by NMFS's Office of Protected Resources, to record the effects of the blasting and dredging activities and the resulting noise on marine mammals. Each PSO shall be equipped with a two-way marine-band VHF radio that shall be dedicated exclusively to the watch. Extra radios shall be available in case of failures. All of the PSOs shall be in close communication with the blasting sub-contractor in order to halt the blast event if the need arises. If all PSOs do not have working radios and cannot contact the primary PSO and the blasting sub-contractor during the pre-blast watch, the blast shall be postponed until all PSOs are in radio contact. PSOs shall be equipped with polarized sunglasses, binoculars, a red flag for back-up visual communication, and appropriate data sheets (*i.e.*, a sighting log with a map) to record sightings and other pertinent data. All blasting events are weather dependent and conditions must be suitable for optimal viewing conditions to be determined by the PSOs.

(q) The watch program shall include a continuous aerial survey to be conducted by aircraft, as approved by the Federal Aviation Administration. The aerial-based PSO is in contact with vessel and drill barge-based PSOs and the drill barge with regular 15-minute radio checks through the watch period. The aerial PSO shall fly in a turbine engine helicopter with the doors removed to provide maximum visibility of the zones.

(r) Boat-based PSOs shall be placed on one of two vessels, both of which have attached platforms that place the PSOs eyes at least 10 ft (3 m) above the water surface enabling optimal visibility of the water from the vessels. The boat-based PSOs cover the Exclusion Zone and Level B Take Zone where waters are deep enough to safely operate.

(s) If any marine mammals are spotted during the watch, the PSO shall notify the aerial-based PSO and/or other PSOs via radio. The animal(s) shall be located by the aerial-based PSO to determine its range and bearing from the blast pattern. Initial locations and all subsequent re-acquisitions shall be plotted on maps. Animals within or approaching the Exclusion Zone are tracked by the aerial and boat-based PSOs until they have exited the Exclusion Zone, the drill barge shall be alerted as to the animal's proximity and some indication of any potential delays it might cause.

(t) If any animal(s) is sighted inside the Exclusion Zone or Level A Take Zone and not re-acquired, no blasting is authorized until at least 30 minutes has elapsed since the last sighting of that animal(s). The PSOs on watch shall continue the countdown up until the T-minus five minutes point. At this time, the aerial-based PSO confirms that all animals are outside the Exclusion Zone and Level A Take Zone and that all holds have expired prior to clearing the drill barge for the T-minus five minutes notice.

(u) The blasting event shall be halted immediately upon request of any of the PSOs. An "all clear" signal must be obtained from the aerial PSO before the detonation can occur.

(v) If animals are sighted, the blast event shall not take place until the animal moves out of the Exclusion Zone under its own volition. Animals shall not be herded away or harassed into leaving. Specifically, the animals must not be intentionally approached by project

watercraft. Blasting may only commence when 30 minutes has passed without an animal being sighted within, or approaching, the Exclusion Zone or Level A Take Zone.

(w) After the blast, any animal(s) seen prior to the blast are visually relocated whenever possible.

(x) The PSOs and contractors shall evaluate any problems encountered during blasting events and logistical solutions shall be presented to the Contracting Officer. Corrections to the watch shall be made prior to the next blasting event. If any one of the aforementioned conditions is not met prior to or during the blasting, the watch PSOs shall have the authority to terminate the blasting event. If any one of the aforementioned conditions is not met prior to or during the blasting, the watch PSOs shall have the authority to terminate the blasting event, until resolution can be reached with the Contracting Officer.

(y) A fish-scare charge shall be fired at T-minus five minutes and T-minus one minute to minimize effects of the blast on fish that may be in the same area of the blast pattern by scaring them from the blast area.

(z) A hydroacoustic monitoring plan shall be developed in coordination with NMFS. The hydroacoustic monitoring plan will describe the hydroacoustic measurement methods and analytical methods as well as the data to be reported. The plan will stipulate the sampling rate of the recording devices and will ensure the necessary frequencies (10 Hz – 40 kHz) and pressure signals (at least 1 MHz) are recorded. The plan will stipulate the type of hydrophone proposed for use and will ensure it is appropriate for collecting measurements of underwater detonations as well as ambient measurements in the far field (*i.e.*, low vs high sensitivity). A copy of the plan shall be presented to NMFS HQ Permits and Conservation Division (PR1) for review at least 30 days prior to blasting activities. As part of the hydroacoustic monitoring, recording devices will

be placed in the near field and sufficiently in the far field (and away from shipping lanes) to collect relevant data. The plan should describe analytical methods used, and must specify that pressure signals will be analyzed using appropriate signal processing methods and applicable equations; the various impulse metrics should be calculated using time series data; cumulative sound exposure levels (SEL_{cum}) will be calculated using a linear summation of acoustic intensity; and weighted cumulative sound exposure thresholds will be used to estimate the various ranges. Finally, the data to be reported as part of the plan will include the appropriate metrics (*i.e.*, impulse in Pa-sec or psi-msec, peak sound pressure levels, SEL_{cum}) for entire blast event, and appropriate statistics (*i.e.*, median, mean, minimum, and maximum), relevant information pertaining to the blast event (*i.e.*, number of delays per blast event, total net explosive weight of each blast event, sediment characteristics/types, hydrophone depths and distances to the closest and farthest delay, water depth, power spectral data) will be specified in the plan in order to be reviewed and approved by NMFS.

The Contractor shall use hydrophones to record the SEL and SPL associated with all blasting events conducted. The Contractor shall also record the associated work (including borehole drilling and fish scare charges) as separate recordings. The Contractor shall provide nearby hydrophone records of drilling operation of 30 minutes over three early contract periods at least 18 hours apart. The Contractor shall provide hydrophone or transducer records within the contract area of three continuous 10-minute quiet periods over three early contract periods at least 18 hours apart or prior to the contractor's full mobilization to the site, and 10 close-approaches of varied vessel sizes. Information to be provided as both an Excel file and recording for each hydrophone (.wav file) shall include:

- GPS location of the hydrophone aboard the vessel. The hydrophone shall be located outside of the range that would cause clipping (overloading of the hydrophone, causing the absolute peaks to be lost).
- Water depth to the sediment/rock bottom. The hydrophone shall be placed at the shallower of 3 m (9.84 ft, or 9 ft, 10 inches) depth or the mid-water column depth.
- Information provided by the Blasting Contractor regarding the blast pattern or drilling. The minimum data shall include, as appropriate for blast shots or drilling; the date, time and blast number of the shot; the average water depth of the shot pattern or the average depth to sediment/rock at the nearest five shot holes closest to the hydrophone location; GPS location of the closest shot hole in the blast pattern to the hydrophone; the maximum charge weight per delay of the shot pattern in pounds of explosives; and the largest charge weight per delay of the closest delay sequence to the hydrophone.

7. Reporting Requirements

The Holder of this Authorization is required to:

- (a) Submit a draft report on all activities and monitoring results to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, within 90 days after completion of the demolition and removal activities. This report must contain and summarize the following information:
 - (i) Dates, times, locations, weather, sea conditions during all blasting activities and marine mammal sightings;
 - (ii) Species, number, location, distance, and behavior of any marine mammals, as well as associated blasting activities, observed before, during, and after blasting activities.

(iii) An estimate of the number (by species) of marine mammals that may have been taken by Level B harassment during the blasting activities with a discussion of the nature of the probably consequences of that exposure on the individuals that have been exposed. Describe any behavioral responses or modifications of behaviors that may be attributed to the blasting activities.

(iv) A description of the implementation and effectiveness of the monitoring and mitigation measures of the Incidental Harassment Authorization as well as any additional conservation recommendations.

(b) Submit a final report to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, within 30 days after receiving comments from NMFS on the draft report. If NMFS decides that the draft report needs no comments, the draft report shall be considered to be the final report.

(c) In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this IHA, such as an injury, serious injury or mortality, USACE shall immediately cease the specified activities and immediately report the incident to the Chief of the Permits and Conservation, Office of Protected Resources and the NMFS Southeast Region Marine Mammal Stranding Coordinator, and shall follow any instructions provided by the Stranding Coordinator. The report must include the following information:

(i) Time, date, and location (latitude/longitude) of the incident; description of the incident; status of all noise-generating source use in the 24 hours preceding the incident; water depth; environmental conditions (*e.g.*, wind speed and direction, Beaufort sea state, cloud cover, and visibility); description of all marine mammal observations in the 24 hours preceding the

incident; species identification or description of the animal(s) involved; fate of the animal(s); and photographs or video footage of the animal(s) (if equipment is available).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS shall work with USACE to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. USACE may not resume their activities until notified by NMFS via letter or email, or telephone.

In the event that USACE discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (*i.e.*, in less than a moderate state of decomposition as described in the next paragraph), USACE shall immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources and the NMFS Southeast Region Marine Mammal Stranding Network. The report must include the same information identified in the paragraph above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with USACE to determine whether modifications in the activities are appropriate.

In the event that USACE discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (*e.g.*, previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), USACE shall report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources and the NMFS Southeast Region Marine Mammal Stranding Network within 24 hours of discovery. USACE shall provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Coordinator.

8. To the greatest extent feasible, USACE is encouraged to coordinate its monitoring studies on the distribution and abundance of marine mammals in the project area with the NMFS's Southeast Fisheries Science Center, USFWS, and any other state or Federal agency conducting research on marine mammals. Also, report to NMFS and USFWS any chance observations of marked or tag-bearing marine mammals or carcasses, as well as any rare or unusual species of marine mammals.

9. A copy of this Authorization must be in the possession of all contractors and PSOs operating under the authority of this Incidental Harassment Authorization.