

Request for Additional Information

SER-2018-19433 St. John Marina, Coral Bay, USVI

September 26, 2018

The following is a modification to the September 13, 2018 request for additional information (RAI) based upon our call September 14. Items answered on the call are flagged “Addressed” and moved to the end of the list.

ESA Survey

1. On August 2, 2018, the National Marine Fisheries Service (NMFS) completed a site assessment of the project area and determined that there were significantly more colonies of *Orbicella annularis* and *Orbicella faveolata* than what was reported on page 23 of the U.S. Army Corps of Engineers’ (USACE’s) consultation request letter dated July 10, 2018 (“USACE’s consultation request letter” or “letter”). NMFS believes that corals listed under the Endangered Species Act (ESA-listed corals) may be affected by the proposed action. Please provide a comprehensive survey of ESA-listed corals in the action area. The detailed survey methodology should be developed in concert with NMFS in order to ensure that it is capable of detecting and identifying any ESA-listed coral species that may be present.
2. Page 23 of the USACE’s consultation request letter indicates that there are shallow reef and hardbottom areas to the south and southeast of the proposed marina footprint, immediately adjacent to the mouth of the harbor on both sides. The letter states that there is approximately 0.8 acre of shallow reef/hardbottom located on the west side of the mouth of Coral Harbor, about 1,100 feet (ft) from the project site and approximately 2.15 acres of shallow reef and hardbottom located on the east side of the mouth of Coral Harbor, about 2,100 ft from the project site. Both of these shallow reef/hardbottom areas are located within the action area and NMFS believes these areas may be affected by the proposed action.

Please conduct a survey to identify the essential feature of designated critical habitat for elkhorn and staghorn corals (i.e., substrate of suitable quality and availability [i.e., consolidated hardbottom or dead coral skeletons free from fleshy macroalgae or turf algae and sediment cover]; such substrate supports successful larval settlement, recruitment, and reattachment and recruitment of asexual fragments). Please also quantify the amount (in square feet or acres) of designated critical habitat (where the essential feature is present) in and around the action area.

ESA-Listed Coral Relocation

3. Please provide the number, species, and size of ESA-listed corals that are going to be reattached in the 750-acre action area.

4. Who will be doing the coral repair work, and what are their qualifications to collect, handle, and reattach ESA-listed corals (if listed corals are to be reattached)?

Turbidity and Sedimentation

5. NMFS feels that the applicant has not adequately defined the extent and magnitude of turbidity and sedimentation effects resulting from the operation of the marina. Please provide NMFS with a water circulation and turbidity/sedimentation modeling study, which analyzes the effects of turbidity and sediment during operation of the marina. The modeling should describe the expected loss of ESA-listed coral, and elkhorn and staghorn coral critical habitat, and seagrass due to prop wash scouring. According to DVD Enclosure 6G August 2017 “Marina Market Analysis: Figure 19. YCSE Berthing Map” and Enclosure 6J, App J, “Law Offices of Benham & Chan” letter (August 11, 2014) (“Exhibit A: Vicinity Map”), vessels of 5-9-ft drafts are proposed to traverse water of a depth of 5-10 feet. These conditions would allow vessels to operate in water depths shallower than the vessel. Vessels with moving propellers that encounter the seabed would be able to entrain sediments into the water column increasing turbidity, which then may migrate and affect ESA-list resources.

If the applicant is unwilling to provide this additional analysis, then NMFS recommends the steps identified in Item 6, below.

6. NMFS feels the proposed project should be modified to address additional avoidance and minimization measures during the operation of the marina. NMFS has provided some recommendations for additional avoidance and minimization measures in 6a, below. If the applicant is not willing to provide additional avoidance and minimization measures during the operation of the marina, then the applicant should modify the proposed project to address mitigation for the loss of coral and coral critical habitat as discussed in 6b, below. If the applicant chooses to provide mitigation for ESA-listed coral and coral critical habitat, then the applicant should be aware of other mitigation as summarized in 6c, below.
 - a. NMFS recommends that one of the following measures should be incorporated into the project:
 - i. the marina should be deepened to adequately accommodate all vessels to be moored/docked in the marina,
 - ii. the size of the vessels should be reduced to avoid propeller scouring of sediments during operation of the marina,
 - iii. a vessel management plan should be implemented which clearly identifies all individual slips and moorings and the vessel size, class, and drafts capable of being moored at each slip and mooring. The draft depths restrictions would be labeled at each slip so that vessel operators would easily understand appropriate mooring locations, and/or
 - iv. a turbidity and sedimentation monitoring plan should be implemented with clear adaptive management that avoids or minimizes impacts to species and

critical habitat from turbidity and sedimentation. Components of a turbidity and sedimentation monitoring plan are addressed in 7, below.

- b. Based on the results of the ESA survey defined in Items 1 and 2 of this request, define the number of ESA-listed coral to be taken by the project and the amount of elkhorn and staghorn coral critical habitat lost due to the turbidity and sedimentation derived from the operation of the marina. NMFS expects all ESA-listed to be relocated from the ESA action area and transplanted to an equivalent coral reef habitat. NMFS expects that the applicant will account for 15% mortality of ESA-listed coral during the relocation process.
 - c. Finally, once you have responded to this RAI and we have a better understanding of the area of impact, we intend to further discuss with you mitigation based on the following project impacts: 1) mitigation for expected loss of coral recruits from the temporary and permanent loss of hardbottom due to project-derived turbidity and sedimentation, 2) mitigation for the unexpected impacts to corals due to exceedances in turbidity and sedimentation, and 3) mitigation for the unexpected loss of coral recruits resulting from the temporary and permanent loss of hardbottom due to exceedances in turbidity and sedimentation.
7. The proposed Water Quality Monitoring Plan, dated July 2017, does not clearly identify the methodology behind water quality monitoring. NMFS requests the following clarifications:
- a. The Plan does not specify the frequency of water quality sampling during construction. NMFS recommends that water quality samples be collected 2 times each day.
 - b. The Plan specifies that turbidity samples will be analyzed using a YSI Meter. NMFS recommends the YSI Meter be capable of measuring nephelometric turbidity units (NTUs). The YSI Meter should be calibrated daily in accordance with manufacturer's specifications and records of each calibration should be maintained with daily NTU measurements. NMFS recommends that all data be measured to 1/10 NTU.
 - c. The Plan does not specify how background turbidity will be determined. Please specify how background turbidity levels will be determined and how construction sample results will be compared to background. NMFS recommends that background turbidity levels are determined on a daily basis.
 - d. The Plan does not indicate the purpose of the pre-construction background samples. How is the pre-construction turbidity data to be used in the monitoring plan? The Plan indicates that pre-construction background samples be collected once per week for 2 months. That will yield a sample set of n=8 and would not appear to account for fluctuations that could occur daily. NMFS recommends that background turbidity be collected at least 2 times per day for 2 months.
 - e. USVI water quality criteria for turbidity in Coral Harbor appears to be that turbidity shall not exceed 3 NTU. Will this project adhere to the USVI water quality standard?
 - f. The Plan specifies that samples will be collected 1 meter below the surface. Most of the turbidity generating activities would be occurring at the seabed. NMFS recommends that all sampling locations include the additional collection of turbidity readings 1 meter above from the seabed when the water depth exceeds 3 meters.

- g. The Plan does not specify how quickly an exceedance should necessitate a corrective action. NMFS recommends that all exceedances must be reported to the construction site manager (on-site individual responsible for ensuring compliance with all field activities) within 1 hour, and an appropriate corrective action measure be implemented immediately by the construction site manager. According to The Summer's End Group, LLC letter (August 15, 2017) (DVD Enclosure 6), p. 43, and the USACE consultation request letter, p. 16, turbidity monitoring will take place during construction and after the marina is completed. Please clarify the decision-making process (p. 16 of the USACE consultation request letter) for determining whether elevated turbidity is/is not the result of marina construction. NMFS is concerned that work will continue under high turbidity conditions, causing even higher turbidity conditions.
- h. After marina completion, if monitoring indicates turbidity exceeds turbidity thresholds, what adaptive management actions will be implemented based upon that information to ensure that turbidity exceedances are immediately identified and corrected, and by whom?

Upland Permitting

8. *(Partially Addressed)* We will need to analyze the impacts from construction and operations of the marina to water quality in the bay, and then their effects to ESA species and critical habitat. Will the applicant need to obtain a multi-sector general permit? Construction general permit? If the answer to either of these questions is yes, please identify each permit and its specific requirements with regard to sediment/erosion control and monitoring requirements (i.e., number and types of discharges, measurable monitoring requirements like water volume and concentration of contaminants expected in discharges, visual monitoring requirements, the stormwater pollution prevention plan, etc.). If no multi-sector general permit or construction general permit will be obtained, please explain why.

USACE explained that its purview is in-water work, and these permits are outside its purview (multi-section general permits and construction general permits are delegated to USVI from USEPA). However, NMFS needs this information in order to assess whether effluent will impact listed species. NMFS understands that USACE is limited in its ability to enforce monitoring at upland outfalls.

9. *(Partially Addressed)* What impact will stormwater discharge entering Coral Harbor from proposed upland development outfall(s) have on listed species (i.e., corals, sea turtles, fish)? [note: DVD Enclosure 6A diagrams erosion and sediment control plan] Impact considerations should include and specify all water quality contaminants.

Similar to 15, above, USACE explained that its purview is in-water work; however, NMFS needs this information to assess whether effluent will impact listed species.

Vessel Docking and Mooring

10. Are there expectations to expand the marina in the future?
11. What is the process for removal and installation of existing moorings? What impact will the proposed move of existing moorings have on listed species?
12. Will the proposed marina result in a redistribution of existing vessels? (in order to conduct a vessel strike analysis, I need to compare the number of new vessels to be docked and new vessels to be moored under the proposal to existing vessels moored in Coral Harbor)
13. What is the vessel size class for each of the 12 new moorings, and what is the respective depth at each mooring?

[Note: Moorings will be located south of the marina, according to "Berthing Layout on Google Image Overlay" (p. 2 DVD Enclosure 13)]

14. Please compare the current vessel traffic (i.e., number and size of boats moored in Coral Harbor) to the number and size of boats proposed to be docked (in the marina) and moored in Coral Harbor.

[Note: There will be a net gain of 144 (new slips; size class broken down in DVD Enclosure 6G August 2017 "Marina Market Analysis: Figure 19. YCSE Berthing Map") plus 12 (new moorings) – or 156 – new vessels will dock/moor according to the proposal.] [Note per 2014 Enclosure 3 -- Environmental Assessment Report – "As of last count, there were 115 boats anchored or moored within the bay..."]

Miscellaneous

15. What is the approximate proportion of seagrass estimated to be lost due to the proposed project to total seagrass (available for ESA-listed species foraging and refuge) in Coral Harbor?
16. What assurances can the applicant provide that the turtle grass transplanted to the northwest corner of Coral Bay will survive? Based upon information provided, no seagrass currently grows there.
17. Please confirm that both an air bubble curtain and wood block cushions would be used simultaneously to attenuate noise -- and protect juvenile Nassau grouper that may be present in the action area -- during installation of all piles.

Addressed (i.e., items that need no further response from USACE):

18. *(Addressed)* Please clarify the size of the action area and where (i.e., via map) the 750 acre-area (described in the “Compensatory Mitigation Plan”) (February 2018) (DVD Enclosure 10-2A) is located.

USACE clarified the action area as Figure 4 (p. 20 of USACE’s consultation request letter). USACE does not consider the compensatory mitigation actions of cleanup of debris and coral repair (described in “Compensatory Mitigation Plan” [revised February 2018], DVD Enclosure 10-2A) (see question 5, below) to be within the action area. The action area is defined by regulation as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action” (50 Code of Federal Regulations [CFR] 402.02). For the purposes of this federal action, NMFS will consider the action area to be the area addressed in the construction and compensatory mitigation plan (i.e., 750-acre area).

19. *(Addressed)* Please confirm that no piles will be installed in designated coral critical habitat where the essential feature is present.

According to USACE’s consultation request letter (p. 23), “According to the benthic assessments conducted by the applicant, the proposed project footprint does not include hard bottom or coral colonized areas.”

20. *(Addressed)* Please clarify the area in which this coral repair work will take place. The USACE consultation request letter (p. 19) states that the action area is 114 acres. The “Compensatory Mitigation Plan” (revised February 2018), DVD Enclosure 10-2A, states that coral repair will take place over a 750-acre area.

Coral repair work will occur over a 750-acre area as outlined on p. 16 of “Compensatory Mitigation Plan” (revised February 2018), DVD Enclosure 10-2A.

21. *(Addressed)* Table 2 in USACE consultation request letter appears to be inconsistent with text on page p. 41 (i.e., fish LAA on p. 41). Please clarify the effects determination for ESA-listed fish species.

USACE clarified that Table 2 should indicate LAA for ESA-listed fish.

22. *(Addressed)* Please clarify the number of piles to be driven, the size of the piles, the pile installation method, the number of strikes per pile, and the maximum number of piles to be installed per day.

[The pile-driving plans differ across background material. For example:

- USACE consultation request letter p. 7 states 160 days for installation, max 6 piles/day, 300 blows/pile
- “Environmental, Acoustic and Water Quality Monitoring for the Development of the St. John Marina...” (July 2017) (DVD Enclosure 6F, App F) states 192 days, max 5-6 piles/day, 1,000-2,000 strikes/pile
- Technomarine Construction, Inc. letter (June 18, 2018) (DVD Enclosure 12) states 960 piles, 166 days, max 6 piles/day, 300 blows/pile
- “SAJ-2004-12518 (SP-JCM) St. John Marina Yacht Club Rebuttal Response Appendix C” (DVD Enclosure 6C4) states “Vibratory hammering will minimize acoustic impacts...” (p. 3), but consultation request letter proposes impact hammer installation of metal piles.]

USACE clarified that the Technomarine Construction, Inc. letter (June 18, 2018) (DVD Enclosure 12) is accurate: 960 piles, 166 days, max 6 piles/day, 300 blows/pile.

The applicant estimates an average of 300 strikes are needed to install each pile (960 total). At 6 piles installed per day, the pile driving requires 166 days under the assumption that the sediments within the project footprint are composed of a mix of fine, silty sand, and clay throughout the 25-ft embedment depth. USACE requested a geotechnical study from the applicant to identify sediments within the marina footprint that would support these assumptions; however, the study was not provided. If rocky layers, bedrock, or harder substrate are found within the needed embedment depth, additional strikes could be needed to install each pile, pile installation work could be extended, and/or additional equipment could be necessary. Any of these actions could lead to increased impacts of sedimentation during construction.

23. (Addressed) Please provide an updated noise analysis if appropriate.

USACE explained that the noise calculator does not account for duration (total days).

24. (Addressed) According to DVD Enclosure 6G August 2017 “Marina Market Analysis: Figure 19. YCSE Berthing Map” and Enclosure 6J, App J, “Law Offices of Benham & Chan” letter (August 11, 2014) (“Exhibit A: Vicinity Map”) vessels of 5-9-ft drafts are proposed to traverse water of a depth of 5-10 feet. These conditions would allow vessels to operate in water depths shallower than the vessel. Vessels with moving propellers that encounter the seabed would be able to entrain sediments into the water column increasing turbidity, which then may migrate away from the source. Increased sediment or contaminant entrainment and dispersal may degrade water quality and adversely affect ESA-listed species and/or critical habitat. What are the proposed effects of marina and vessel operations on water quality? What are the impacts to ESA-listed species and critical habitat?

USACE determined temporary or permanent loss of foraging or refuge habitat associated with sediment stir-up and resuspension from vessel prop wash as part of the operation of the marina is likely to adversely affect ESA-listed sea turtles, and fish (loss of use of nursery for fish, too). USACE determined sediment stir-up, resuspension, and transport from vessel prop wash as part of the operation of the marina is likely to adversely affect ESA-listed coral species and staghorn and elkhorn coral critical habitat.

25. (Addressed) What is the total number of new slips and moorings for the project (USACE consultation request letter states 144 new slips and the 2014 “Environmental Assessment Report for the Development of the St. John Marina...” (DVD Enclosure 3, p. 6-16) states 87 moorings are proposed—12 for the marina and 75 for Coral Harbor Mooring fields)?

USACE clarified that a net gain of 144 new slips and 12 new moorings is proposed.

26. (Addressed) What is the anticipated effect of the proposed marina on existing vessel moorings?
USACE clarified that the applicant will work with the U.S. National Park Service to relocate existing moorings to another part of Coral Harbor.