

Appendix C-2

Response to comments raised by the National Marine Fisheries Service, Habitat Conservation, February 5, 2015 and March 2, 2015 on SAJ-2004-12518 (SP-JCM) St. John Marina Yacht Club

USFWS is no longer the lead agency in this consultation. Originally the marina developers had received a grant for marina development, but it was later determined that it was not appropriate for this type of development, therefore the US Army Corps of Engineers is now the lead agency.

As noted in the correspondence both tarpon (*Megalops atlanticus*) and snook (*Centropomus undecimalis*) occur within Coral Harbor and both were seen during dive surveys within the project footprint.

Modifications to the project design have resulted in the following reductions to impacts to benthic resources as follows:

The dock permitted by CZM is 1.7 acres or 74,052sq.ft., the new layout is 73,591.10sq.ft., a reduction of 460.9 sq.ft. This has been accomplished through the narrowing of piers and removal of a finger pier.

The previous marina design directly impacted approximately 2,500 ft² of seagrass due to the placement of approximately 1,333 piles ranging from 12-17" in diameters. Due to wave turbulence, seagrass would also be lost surrounding the piles. The previous dock design occupied 1.7 acres, of which 181 ft² would be over areas colonized with seagrass and coral rubble, 1,567 ft² would be located over area of sparse seagrass, 41,546.37 ft² would be located over areas with 30%-100% seagrass coverage, 27,072 ft² would be located over areas with 5-30% seagrass and algae coverage and 4,717 ft² will be located over areas with 5% seagrass/algae coverage. The dock would have resulted in a shading impact of 1.42 acres and with the use of the graded decking we assumed an approximate 46% survival rate based on NMFS studies, or stated differently, a 0.85 acre sea turtle foraging habitat loss due to shading (Landry, 2008).

The proposed slip count is now 144 and the dock design has been modified to reduce these impacts. The number of pilings has been reduced to 960, reducing the piling footprints to 1350 sq.ft. (there will still be additional seagrass loss due to wave turbulence). The revised dock square footage is 73,591.1sq. ft or 1.69 acres (dock less on shore boardwalk). Of this 66,021.8 sq. ft., or 1.51 acres has SAV. With a 46% survival rate, there will be a 0.81 acre loss of sea turtle foraging habitat loss due to shading, which can be broken down as shown in the following table.

Type	Habitat	Number	Acres	Sq. ft.
Moorings	30-100% Coverage Seagrass	9 (8 +0.5,0.5)		
Moorings	5-30% Coverage Seagrass	3 (1.5 + 1.5)		
	Total	12		
Docks			1.69	73,591.10
	Riprap (above MHW)		0.01	235.00
	Docks Less Above MHW		1.68	73,356.10
	Mud/Cobble		0.02	762.20
	30-100% Coverage Seagrass		0.90	39,258.18
	5-30% Coverage Seagrass		0.48	20,927.41
	5-20% Coverage Seagrass Macro-Algae		0.13	5,836.21
	Minimally Colonized		0.15	6,572.10
	Total		1.68	73,356.10

It is anticipated that vessels will occupy up to 5.65 acres for more than 2 weeks at the same time over the course of the year and this will result in the loss of additional seagrass through shading and vessel movements. It is anticipated that in total the marina will result in the loss of 3.75 acres of seagrass rather than 9.1 acres of seagrass loss. We believe that this larger number came from the development envelop, the area in which construction impacts could occur (area where the barge will be moving or spudding down).

	Previous	Current	Reduction
Dock Size	74052sf	73591.1sf	460.9sf
Slips	145	144	1
Pilings	1333	960	376
Direct Impact	2500sf	1350sf	1150sf
Shading	0.85acres	0.81acre	0.04acres

NMFS questions the impact of the proposed project on the significant investments made by NMFS and EPA to support the development and implementation of watershed level management plans and actions directed to reduce land-based sources of pollution and improve water quality, seagrasses and corals within Coral Bay. Coral Bay Community Council has been involved in the development and implementation of a Watershed Management Program for Coral Bay and has received grants and awards from NMFS and EPA. These grants have been used to implement improvements in drainage with the aim to reduce sedimentation in to the bay.

The development of the marina will have impacts to submerged aquatic vegetation (“SAV”) and to water quality through construction impacts and operational impacts. YCSE is proposing to abate these impacts to the greatest degree possible by not dredging, by transplanting seagrass

from piling footprints and by using grated decking to reduce shading impacts. Strict pump out requirements will be enforced and the marina will make pump out services available to other vessels in the bay.

As mitigation YCSE will be transplanting seagrass into an uncolonized area in the northwest corner of the harbor which now receives less sedimentation due to the work which was done by CBCC through their grants.

YCSE hopes to help advance the work which has been done by CBCC and others. The one thing that has been lacking in the implementation of the watershed management plan is the maintenance of the Best Management Practices for storm water facilities which have been installed by Coral Bay Community Council. As depicted below, because of lack of maintenance many of the installed devices have become inefficient and ineffective.





YCSE is proposing as one of the mitigation projects for YCSE to provide the needed maintenance on these storm water BMPs on an ongoing basis as well as make improvements onsite to improve water quality coming from upstream as it flows through the upland portion of the property before it reaches the sea. YCSE has prepared a detailed Mitigation Plan (Appendix E) to help augment and help maintain the steps already taken through funding of the federal agencies.

YCSE is also proposing to set up long-term water quality monitoring stations which will track changes in water quality during operation of the marina, providing much needed data to help guide future efforts to abate the terrestrial and marine impacts to the system. This monitoring will also include the monitoring of sediments contaminant build up and monitoring of both coral (including ESA listed corals) and seagrasses adjacent to the marina development so that if impacts are noted measures can be taken to abate those impacts.

The mooring field permitted as part of the project has been removed from this application even though it was previously approved the Department of Planning and Natural Resources, Division of Coastal Zone Management. ("DPNR"). This idea, which was first suggested by National Marine Fisheries Service as a mitigative measure, would have helped abate on going impacts caused by poor mooring practices and unauthorized boating activities. While installation and management of a properly designed mooring field could greatly reduce the ongoing degradation currently occurring within Coral Harbor as a result of illegal moorings, there was strong public objection, especially by boaters within the bay. DPNR approval does not require construction of every component permitted and is contingent on receipt of all other required permits. By removing the mooring field from the ACOE permit application, Summer's End Group will not be seeking to obtain the remaining permits that would be necessary for the installation.

Fuel deliveries will be taken over land rather than over sea by barge, eliminating that potential impact, and making spills if they occur during fuel transfer easier to contain and prevent from impacting the marine environment.

The upland portion of the project has been reduced in size and the project designed includes detailed sedimentation and erosion control including measures to treat runoff which runs on the properties. The intent is to improve the water quality of any discharges from the upland through the property.

A very thorough alternative analysis has been prepared and is presented in the Rebuttal document to the USACE. It evaluates 11 sites including the proposed project site, the no build alternative, different construction methods as well as different designs to accomplish the proposed intent of the project.

The project will probably impact 3.75 acres of seagrass, to reduce the total loss the seagrass from the piling footprints will be transplanted,

It is the applicant's belief that the availability of a marina may in fact reduce illegal and improper mooring activities by offering a viable, safer and more convenient option for boaters.

The marina will be using grated decking to minimize shading from the docks and minimize seagrass loss. While some seagrass loss is expected due to shading and propwash, every effort will be made to minimize those impacts to the greatest degree possible.

Increased vessel movements will have the potential of re-suspending shallow sediments. The marina has been designed to keep the largest vessels with the deepest drafts in the deeper areas of the bay and the marina will be enforcing "No Wake" speeds within the marina. The marina will institute a strict no bilge pumping rule and will be providing pump out facilities for vessels both staying in the marina and for any other vessel wishing to pump out. Summers End will also prohibit any maintenance activities or work on vessels within the marina. These activities will help minimize potential impacts from marina operations on the harbor.

The overall impacts will include impacts caused by marina operations. The Applicant acknowledges that due to the number of vessels in the marina, it is probable that there will be some increase in turbidity and pollutants introduced into the harbor. In order to help compensate for this impact, Summers End is proposing to assume maintenance of the sediment and erosion control features which were installed utilizing ARRA funds from NOAA in the Coral Bay water shed and will be installing new measures in two drainage ways which currently are introducing sediment and pollutants into the bay during rainfall events. Currently, the sediment and erosion control features are not being actively maintained and as a result are operating at less than optimum efficiency and functionality. The applicant believes that providing a long-term solution to the maintenance needs will benefit the water quality in Coral Harbor. The detail of the maintenance work and new sediment controls are found in Appendix E, Mitigation Plans. These mitigative measures should help reduce the terrestrial input of sediments and pollutants and should offset the resuspension of existing seafloor sediments during construction or by vessels later during operation.

The Applicant is providing pump out facilities. These facilities will be available for use by non-marina users. The applicant also will prohibit discharges in the project area, which is roughly

25% of Coral Harbor. This active management of the area will reduce pollution and improve water quality in the Harbor.

The applicant acknowledges that the biggest potential environmental impact to Coral Bay as a whole will be the increase in the number of vessels going into Coral Harbor. On the northern side of Coral Bay, Hurricane Hole and Round Bay enjoy the protection of being in National Park waters. The limited development and protections offered by the park have protected these waters from the impacts of development. Hurricane Hole offers a very unique environment with both corals and mangroves in the same habitat, something rarely seen. In St. John, US Virgin Islands, over 30 species of scleractinian corals are growing on and under mangrove prop roots in small bays located along the perimeter of a large bay, Hurricane Hole, within the Virgin Islands Coral Reef National Monument. This has been proposed as a potential refuge for corals with the changes that are being brought on by climate change (Yates, 2014). On a whole, the limited development along the northern arm of St. John has protected the benthic resources in the area.

The introduction of the marina will bring more boats through the area, increase the chances of groundings, animal strikes by vessels and potentially increased anchoring and damage to corals and seagrasses if anchors are thrown indiscriminately. Because vessels will be in Coral Harbor, and therefore Coral Bay, guests who would not otherwise venture into the Coral Bay area may choose to explore Hurricane Hole and Round Bay. Greater vessel traffic and higher numbers of visitors swimming, snorkeling and diving can result in seagrass loss and coral damage. Additional visitors and vessels could exceed the number of moorings and services the park currently has available.

The applicant is working with the Park Service and other resources to alleviate this increased strain and the potential increase in impacts. The Applicant is proposing the following measures to address impacts:

- 1) The applicant will add a fee to charges levied on each slip which will be dedicated to support of a third party independent research program on vessel strikes to sea turtles and marine mammals similar to the one NOAA is currently funding in St. Croix. Information gleaned from these studies and those in the future may one day help to minimize or alleviate strikes altogether.
- 2) The Applicant is proposing to install two informational buoys on the approach to Coral Bay as a means to help guide boaters and to prevent boaters from venturing into shallow waters and damaging seagrass and corals in park waters and within the National Monument.
- 3) The Applicant is proposing to fund, on an ongoing basis, a part time position within the Park Service for an interpretive park ranger to educate and provide programming for marina guests regarding park resources and visitor practices.
- 4) The Applicant is proposing to work with the Park Service to include a page on the Marina website, developed jointly with the Park Service to educate boaters in advance of visiting the marina about both the resources in the park and the rules and regulations governing activities in park waters.
- 5) The Applicant is proposing to work with the Park Service to develop and deploy a mobile application sharing information about park resources, and means visitors can utilize to protect those resources consistent with park rules and regulations. The

goal of this application will be to provide boaters with real time access to park information while they are within parks waters.

- 6) As noted in the original application, the Applicant is proposing removal of derelict vessels within the project area as part of its mitigation plan. The mitigation details the methods that will be used to reduce and contain sediments and minimize other impacts during the removal process.. The Applicant welcomes the opportunity to partner with public agencies in the event derelict vessels outside the project area are being removed at some future date.

NMFS Recommendation:

1. A complete impact assessment that quantifies all potential direct and indirect impacts to corals and seagrass, including work vessel spudding areas, shading by barges during construction, fuel barge operations, deck shading long-term, and mooring placement and potential impacts due to vessel shading in mooring field. The information provided should include a map clearly depicting and quantifying impacts by location and habitat type.

The area was resurveyed in 2015, 2016 and 2017, and an updated analysis was prepared.

In addition to the seagrass survey information provided in the initial application, the site was resurveyed in 2015, 2016 and most recently in May and June of 2017. Transects previously undertaken were revisited. The entire site marina location, buoy locations and potential construction foot print and transit routes were surveyed. The changes noted included the appearance of *Halophila stipulacea* in the deepest areas with primarily macro-algal cover, regrowth of seagrass in some areas where there were previously scars in seagrass beds from anchor and rope drags and new damaged areas which have been disturbed by anchor and rope drags. The benthic map prepared in 2014 still accurately depicts the abundance and distribution of species. North of the culvert, there is a narrow muddy band of uncolonized sand which varies in width between 10 ft. and 25 ft. along the shoreline and then *Syringodium filiforme* beds which grade into abundant *Thalassia testudinum*. The seagrass beds are dense and continuous offshore with occasional blow outs which have been predominantly caused by debris, anchoring, or moorings. To the south of the existing storm water culvert, there is riprap revetment along the shoreline and there are cobbles amid the seagrass at a distance of 10 ft.– 25 ft from shore. *Thalassia* dominates the grass beds all the way into shore on the southern side of the property. These beds are extremely dense only broken by debris and anchor scars. There are six relatively large coral heads, *Solenastrea bournoni*, found offshore of the discharge point all were found and are still healthy as of 2017. Small *Siderastrea radians* colonies found on scattered debris and cobbles in the area.

The seagrass densities between depths of 1 ft. and 11 ft. range from 30-100%. The lower densities are found primarily in areas that are recolonizing from previous disturbances. *Thalassia* represents 80% of the grass and *Syringodium* approximately 20%. *Halodule beaudettei* is present in areas of regrowth. As depth increases, seagrass densities decrease and *Syringodium* becomes more abundant and represents a greater percentage of the seagrass present. At a depth of 11 ft to 13 ft., the seagrass densities fall to 5% to 30% and at a depth of 13 ft to 14 ft the seagrass densities are no greater than 5% and macroalgae is the dominant colonizer. At 15 ft of depth there is only an occasional *Thalassia* shoot, and macroalgae is the dominant colonizer and has colonized between 10% and 70% of the seafloor. *Halimeda* is the most common algae present. *Halophila stipulacea* is

patchily abundant amid the algae. Also found are *Caulerpa*, *Udotea*, *Avrainvillea*, *Penicillus capitatus*, *Laurencia*, *Hypnea* and *Dictyota*. At a depth of greater 16-19ft. the macroalgae density decreases and only several small patches of *H. stipulacea* were present. The system is light limited at this depth. Beyond the inner harbor dense seagrass is present in depths exceeding 25ft.



100% coverage of seagrass at depths up to 10ft.





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A total of 39,258.18sf of docks are over areas with SAV, the majority of which has densities between 20 and 100%. Based on a 46% survival due to shading since the Applicant is using grated decking, 21,199.42sf (0.487ac) of seagrass may be lost. At the maximum capacity and at the maximum size boat in each slip there will be 5.65 acres of shading due to vessels. It can be assumed that 50% of the area shaded by boats will be lost due to vessels being in placed more than 2 weeks at a time. There will be some survival due to angle of the sun and vessel types and some available light. There will be impacts due to spudding impact during construction which will probably account for between a 900-1020 sf of impact (6sf per spudding event and between 150 and 170 relocations. The operation of the marina will have an impact due to prop wash scour

and you can assume another 10% loss. In total, approximately 3.75 acres of seagrass will probably be lost as a result of the project.

In order to reduce potential impacts barges will not be used to deliver fuel. All seagrasses within the piling footprints will be transplanted. Boat lifts will be utilized in the shallowest slips to reduce shading impacts. BMPs within the Coral Harbor watershed will be maintained to improve water quality. Derelict and sunken vessels will be removed to allow recolonization by seagrasses. The mitigation plans to offset and compensate for these impacts are found in [Appendix E](#).

B. 1. As noted in the rebuttal letter, the Corps has stated that the mitigation plans described in your permit application would not provide sufficient compensation for the potential impacts of the proposed project on seagrasses.

A total of 1350sf. of seagrass will be impacted directly due to pile driving and due to shading, construction activities, and propwash and scour from vessels using the marina it is probably that as much as 3.75 acres of seagrass will be lost. Every effort has been made to avoid impacts where possible. Impacts have been minimized through the reduction of the number piles, use of grated decking, placement of boat lifts in the shallowest slips where seagrass is the densest. No wake speeds will be required and enforced within the marina to minimize scour by engines, and bow thrusters.

YCSE is proposing a seagrass mitigation plan which includes the transplant of seagrass from the pilings and potential turbulence loss footprints into an uncolonized area in the northwestern corner of the bay. YCSE will also be completing the cleanup of derelict vessels and associated debris allow for the recolonization of seagrass into areas which were previously impacted. YCSE will also be implementing a maintenance plan for the storm water mitigation devices which were previously installed with funding from EPA and NOAA but have not been maintained (Also see Section 2 above and the response to EPA in [Appendix C](#)). YCSE will also be undertaking a long-term monitoring plan which will monitor water quality as well as the closest ESA corals species and the seagrass to the east of the project site to look for impacts. YCSE will also be installing 5 informational buoys, 1 to protect the transplant site and 4 to protect shallow seagrass and reef sites in the vicinity of the approach to Coral Harbor to help prevent future groundings and impacts to corals and seagrasses. YCSE will be providing information materials on their website and on a mobile application designed especially for Coral Bay, which will provide detailed National Park rules, regulations and procedures and will discuss the importance of not anchoring in seagrass beds or on coral resources. YCSE will be providing on-going funding to for a third-party study and sea turtle strikes and how to avoid them and will be planting a mangrove fringe along the shoreline of their property to restore the fringe which was remove years ago.

2. Description of on-site and off-site project alternatives that demonstrate avoidance and minimization of impacts to corals and seagrass to the maximum extent practicable.

A detailed alternative analysis has been prepared of both alternative locations and alternative layouts, including the no build alternative. This is presented in the rebuttal document.

3. A biological monitoring plan that gauges actual impacts relative to those predicted in the impact

assessment and triggers additional compensatory mitigation when appropriate. The plan should include pre-construction, during construction, and post-construction water quality monitoring. In addition, the plan should include examination of long-term on-site storm water management measures to reduce runoff created by the impervious surface constructed for the parking area

The Water Quality, Environmental and Acoustic Impact Mitigation Plan is found in Appendix E. This plan includes a discussion of what measures will be taken if impacts are noted both during construction and long term. The project includes baseline sampling, during construction sampling and long term sampling. It includes examination of storm water management both on the project site and within the watershed long term.

4. A spill contingency plan that includes precautionary measures, emergency actions should a spill occur, and spill reporting criteria. The plan also should demonstrate a tiered approach for minor versus major spills

The project will be required to obtain a Terminal Facility License in order to be able to provide fuel. In order to obtain this license, they must prepare a Spill Prevention Countermeasure and Control Plan, and it must be approved by DPNR. This plan addresses large and small spills and what measures must be taken.

5. An amended compensatory mitigation plan that describes how unavoidable impacts to seagrass and corals would be fully offset. The plan shall include a description of mitigation activities and the mitigation site(s), expected results from the mitigation, and a monitoring plan with schedule that will gauge how the performance criteria will be met. In this regard, NMFS would support the relocation of all corals (including corals smaller than 10 centimeters), which would eliminate the need for compensatory mitigation for corals. The mitigation plan shall demonstrate that the amount of seagrass and coral mitigation is sufficient through a functional assessment or appropriate analytical tool.

The footprint of the marina avoids impact to all corals. The mitigation plan is found within Appendix E, and follows the compensatory mitigation guidelines as set forth in 40 CFR Part 230, Compensatory Mitigation for Losses of Aquatic Resources: Final Rule. The fundamental objective of compensatory mitigation is to offset environmental losses resulting from unavoidable impacts to the waters of the United States authorized by DA permits. This includes a detailed description of the mitigation activities and mitigation sites, propose success performance criteria and the monitoring of performance criteria to gauge compliance.

6. A list of BMPs that will be implemented during construction and operation of the upland infrastructure, docking facility, and mooring field to ensure that impacts to coral and seagrass habitats are minimized to the maximum extent practicable.

As stated about the larger mooring field is no longer proposed only the 12 moorings to the east of the marina. These mooring will use helix type anchors and floated lines to minimize any impact to the seafloor and its benthic communities.

UPLAND BMPS:

Reinforced silt fencing will be used throughout the project and gravel outlets will be used to filter sediment. Tree Protection fencing will be placed outside the driplines of all trees identified to be saved. Construction entrances will be provided on each site to keep track out to a minimum. If track out occurs, it will be cleaned by the end of the day. Reinforced silt fence will be placed downslope of all stockpiles and staging areas.

Vegetated swales will direct runoff in the Voyages Ghut to a forebay and retention area on Parcel 10-41. Permeable pavers will be installed in the upper parking area of 10-41 and an underground storage system will be installed in the lower parking lot. Both of these will be directed to the retention area which will have baffles installed, then an outlet structure will control discharge to the ghut. The retention area will be grassed and irrigated, and planted with native vegetation.

Permeable pavers will also be installed on Parcel 10-17 and 10-13. Parcel 10-13 will also have underground storage for storm water. Both underground storage systems can be used for irrigation, if needed

MARINE BMPS:

Type 2 or 3 Turbidity barriers will be installed and properly maintained around all in-water construction activities.

Bubble curtains will be installed around all pile driving activities.

Sea turtle and Marine Mammal Monitoring will occur during all pile driving activities.

Water quality and environmental monitoring will occur during all in water work and long term monitoring will monitor to effectiveness of upland control measures and impacts of marina operations.

Sea Turtle and Smalltooth Sawfish Construction Conditions will be followed during construction

Vessel Strike Avoidance Measures and Reporting for Mariners will be implemented.

The ESA listed species have been fully address in the response to NMFS Protected Resources Division.