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cc: Donnie Kinard, Acting Chief, Regulatory Division, Jacksonville District (USACE)  
Tori White, Deputy, Regulatory Division, Jacksonville District (USACE)  
Alisa Zarbo, Chief, South Branch/Jacksonville District (USACE)  
Sindulfo Castillo, Chief, Antilles Regulatory Section (USACE)

Re: **SAJ-2004-12518 (SP-JCM) St. John Marina**

Dear Mr. Cedeño,

We write on behalf of the Coral Bay Community Council ("CBCC") and Save Coral Bay ("SCB"). Through the Freedom of Information Act we have obtained copies of documents submitted over the past eight months by the Summer's End Group ("SEG") to the Army Corps of Engineers ("USACE"), and the detailed responses from USACE to SEG relative to these submissions. We note that SEG's comments were submitted well beyond the deadlines established by the USACE in its comment letters. These documents were submitted during the period from August 2017 through March 2018. Needless to say, the environment of Coral Bay, and all of St John, experienced extraordinary impacts from the hurricanes of 2017. Moreover, SEG's submissions fundamentally alter material aspects of the proposed project and its associated application materials. For these reasons the comments in this letter address the implications of the changed conditions on marina projects in Coral Bay, as well as comments on new information submitted by SEG during this period. We request that these comments be included in the administrative record.

The documents that we have reviewed are the following:

1. Summer's End Group submission to USACE of August 2017, consisting of a cover letter and 28 appendices, including two videos, purportedly addressing the USACE deficiencies letter of October 2015 ("Comments for Rebuttal Letter").
2. USACE letter to SEG of October 26, 2017 addressing deficiencies in the August 2017 submission ("Second Comments for Rebuttal Letter")
3. SEG'S additional submission to USACE of December 2017, consisting of a cover letter and 8 attachments, purportedly responding to the October 2017 USACE letter
4. USACE letter to SEG of January 26, 2018 addressing deficiencies in the December 2017 submission ("Third Comments for Rebuttal Letter")
5. SEG's additional submission to USACE of February and March 2018, consisting of a cover letter and 19 attachments

## Background – Earlier Public Comments

During the first public comment period for the SEG marina project (January 2015) and the second public comment period (August 2015) the public provided extensive input to USACE in opposition to the proposed marina. Over 22,000 people sent individual letters and/or signed form letters highlighting major concerns about the SEG project. These concerns were summarized for USACE in a presentation to Kelly Finch and José Cedeño-Maldonado at the Coral Bay Community Council office on October 3, 2015. The issues most frequently cited by the public included the following:

- **The proposed marina is in the wrong location.**  
The shoreline is open to the ocean. There are extensive sea grass beds and sea turtle habitat within the marina footprint. The location would be subject to major impacts from tropical weather.
- **The marina is far too large.**  
The project proposes to dedicate 28 acres of Coral Bay Harbor to one private marina (roughly 50% of the entire inner harbor). The project would restrict other land owners from utilizing their shoreline.
- **There will be extensive environmental impacts to an aquatic resource of national importance.**  
The environment includes Essential Fish Habitat utilized by protected species (sea turtles, corals, marine mammals). The fringing mangroves in the project vicinity are a unique habitat for multiple shark species.
- **It is inappropriate to locate a marina in such close proximity to the Virgin Islands National Park.**  
Direct and indirect impacts to Hurricane Hole, Coral Reef National Monument and VI National Park are likely to be extensive. Significant impacts to the quality of the human environment in Coral Bay are anticipated. There is no mitigation possible for any of these impacts.

In addition to these primary concerns, there were additional topics highlighted by public comments which weighed negatively on the public interest in this project. These additional topics included:

- There is no demonstrated need for the project.
- The basic purpose can be fulfilled elsewhere on St John in better locations with less environmental impact.
- The acoustic impacts from marina construction (pile driving) would resound throughout the valley, hillsides, and underwater causing significant impacts to the human and marine environment.
- The project is not economically viable and is likely to fail while causing adverse impact to the local economy of Coral Bay.

All of these issues, as well as others, were presented to USACE in October 2015 and detailed findings supporting the concerns were submitted on some of these topics. The Coral Bay Community Council ("CBCC") and Save Coral Bay ("SCB") submitted expert reports and analyses during the public comment periods confirming the significance of the issues raised by the public. We concluded that the project did not meet the Public Interest, as required by the Clean Water Act and Section 10 of the Rivers and Harbors Act and that the applicant had not demonstrated that this was the least environmentally damaging practicable alternative location, as required by Section 404(b)1 of the Clean Water Act.

We also note that USACE included most of these same points in the three deficiency letters and requests for additional information sent to SEG. Part of the reason for this current set of comments is to respond to SEG's rebuttal claims on these critical topics. Although we believe all of our comments are highly significant, we would particularly like to call your attention to our comments on the following topics:

- a) incorrect statement of Project Purpose in the alternatives analysis (at page 13),
- b) missing evaluation factors in the alternatives analysis (at page 14),
- c) errors in the estimate of operational impacts to sea grass, particularly considering the increased sediments post-hurricane (at page 18),
- d) significant errors in the estimates of sea grass loss (at page 20), and
- e) extreme inadequacy of the compensatory mitigation proposal (at page 22).

### **Hurricanes Irma and Maria**

In September 2017 the community of Coral Bay suffered direct hits from two catastrophic category 5 hurricanes. On September 6, 2017, the southern eye wall of Hurricane Irma passed directly over the east end of St John and Coral Bay Harbor. On September 20, 2017, The eye of Hurricane Maria passed just south of St. Croix, lashing Coral Bay with hours of hurricane force winds and torrential rains, and completely destroying many boats that were grounded from the first hurricane. The unprecedented impacts of two major hurricanes in a two week period left much of Coral Bay in ruins.

The public comments regarding the ill advisability of a large scale marina in Coral Bay were all raised long before the storms of 2017. We can now see in stark reality just how significant those public concerns truly are.

All of Coral Bay was unsafe during Hurricane Irma. Hurricane Hole, a traditionally safe anchorage for generations, was decimated. Coral Bay Harbor was hit by unprecedented west winds piling boats on the shoreline opposite the proposed marina. Only because Coral Harbor was cleared of most boats prior to the storm was it navigable after the storm.

A marina stretching more than half way across the harbor would have left wreckage in and under most of the navigable waters of Coral Bay, rendering emergency access by water impossible. If there had been fifty thousand gallons of fuel in above ground storage tanks and three thousand gallons of untreated sewage in septic holding tanks, these could have failed catastrophically from the winds and storm surge dumping massive quantities of pollutants into the harbor. It is quite likely that the land and water components of the Summer's End Group marina would have been destroyed, resulting in environmental catastrophe for Coral Bay.

The parklands adjacent to Coral Bay were devastated by Irma. Mature fringing mangroves were particularly hard hit. Electric utility power was out for over four months. Roads were impassable. The only access to Coral Bay in the days following Hurricane Irma was by water, and later by helicopter. All evacuations were by air and water until the main road was cleared.

The experience of Hurricane Irma dramatically illustrates how ill-conceived and how contrary to public interest the proposed Summers End Group marina would be to the human and natural environment of

Coral Bay. The project is clearly not in the interest of the public and it is only in the interest of a very small group of private investors to proceed with a project of this nature.

The impacts of the hurricanes of 2017 were not, however, unanticipated. In fact the experts retained by CBCC in 2015 identified most, if not all, of the issues demonstrated by the severe weather of 2017. This demonstrates that the experts were not idly speculating – they were drawing expert conclusions based on real data and professional and personal experience, and their conclusions were proven correct in many cases by the experience of Hurricane Irma.

The remainder of this report is divided into the following sections:

1. Environmental Impact Review
2. Proposed Marina Location
3. Ecosystems Cumulative Impacts
4. Sonic Impacts – Pile Driving
5. Impacts to Virgin Islands National Park
6. Applicant's Alternatives Analysis
7. Sea Grass Impacts from Marina Construction and Operation
8. Significant Errors in Applicant's Sea Grass Impact Statement
9. Compensatory Mitigation Plan
10. Fuel Delivery
11. Economic Impacts
12. The "Truth About St John" Video
13. Conclusions

## **I. ENVIRONMENTAL IMPACT REVIEW<sup>1</sup>**

SEG's attempt to avoid meeting the requirements of NEPA is undermined by both fact and precedent. Indeed, the SEG submissions alone reflect the presence of significant environmental impacts from the proposal, which would necessitate the preparation of an EIS if the application is not summarily denied.

Initially, SEG's complaints about delay and timeliness seek to blame the USACE for SEG's own dilatory conduct, and fail to recognize the following critical facts: SEG's original application was deemed severely deficient as documented in the USACE's letter to SEG in October 2015. SEG did not submit revised materials addressing these deficiencies until August 2017, allowing almost two years to pass without providing the USACE with the information required to undertake meaningful review. The USACE responded in October 2017 identifying further deficiencies with SEG's August 2017 submission, and again in January 2018 after SEG submitted additional deficient materials in December 2017. SEG's recent submissions, including a follow-up submission in February 2018, reflect a materially different project than was originally proposed, betraying all of SEG's complaints about the timing of environmental impact review under NEPA.

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<sup>1</sup> This section ("Environmental Impact Review") was written by CBCC attorneys at Sive, Paget & Riesel (Maggie Macdonald and Mark Chertok).

The USACE NEPA implementing regulations provide that the USACE should complete environmental impact review "as soon as practicable after all relevant information is available." 33 C.F.R. Part 325 App. B(7)(a). The USACE has repeatedly indicated in letters to SEG that SEG has failed to provide all relevant information; therefore, any delay in the environmental review process can only be attributed to SEG's own neglect. There is no basis either in the statute or implementing regulations that supports SEG's statement that "an EIS would both be late and unnecessarily duplicative..." SEG Comments for Rebuttal Letter at 67. NEPA imposes environmental review and public participation requirements that are separate and apart from the requirements of the permitting process. Absent a statutory exemption from the requirements of NEPA (which do not exist here), the USACE must prepare an Environmental Assessment (EA) or, as here, where it is clear that an Environmental Impact Statement (EIS) would be necessary if the application were to proceed, the USACE need not prepare an EA and may proceed directly to the preparation of the EIS. 33 C.F.R. Part 325 App. B(7)(a) ("In cases where it is obvious an EIS is required, an EA is not required.").

After citing to irrelevant portions of the Code of Federal Regulations regarding timing, SEG then concedes that, at a minimum, as EA must be completed. However, SEG has not prepared a proposed EA. Nevertheless, SEG demands that the USACE pre-determine the outcome of that EA process, asserting that the "COE must issue a Finding of No Significant Impact (FONSI) through their EA process." SEG Comments for Rebuttal Letter at 67. This attempt to foreclose a full and complete environmental review is unlawful, and should be disregarded.<sup>2</sup>

We believe that, absent outright denial of the application, an EA is not necessary because the need for an EIS is clear. Preparation of an EIS is required for "major Federal actions significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). The word "affecting" in the key phrase "significantly affecting the quality of the human environment" is defined by the Council on Environmental Quality to mean "will or may have an effect on."<sup>3</sup> Thus, an EIS is required where, as here, an action may significantly impact the environment.<sup>4</sup> Should the USACE proceed with an EA, we believe that the USACE's review will reveal a number of unmitigated significant environmental impacts, including but not limited to the following:

- Loss of sea grass beds and sea turtle habitat within the marina footprint;
- Loss of essential fish habitat used by protected species such as sea turtles, corals and marine mammals;
- Sonic impacts from pile driving; and
- Loss of habitat and biodiversity in the Virgin Islands National park, Hurricane Hole, and the Coral Reef National Monument. Notably, SEG has eliminated any proposed mitigation for these

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<sup>2</sup> See Simmons v. U.S. Army Corps of Eng'rs, 120 F.3d 664, 669 (7th Cir. 1997) (the Corps may not simply accept the purpose of a project as defined by the project proposer, but has "the duty under NEPA to exercise a degree of skepticism in dealing with self-serving statements from a prime beneficiary of the project." [citation omitted]).

<sup>3</sup> 40 C.F.R. § 1508.3. See Sierra Club v. Marsh, 769 F.2d 868 (1st Cir. 1985).

<sup>4</sup> See City of Shoreacres v. Waterworth, 420 F.3d 440, 452 (5th Cir. 2005); League for Coastal Protection v. Norton, 2005 WL 2176910, \*5 (N.D. Cal. Aug. 31, 2005) (Department of Interior ordered to undertake full NEPA analysis after failure to consider long-term environmental impacts of new oil and gas developments in its approval of oil and gas leases). See also Barnes v. U.S. Dept. of Transp., 655 F.3d 1124 (9th Cir. 2011) (requiring the FAA to study the growth-inducing impacts of a runway expansion at a Portland, Oregon airport).

resources in the current application materials. This unmitigated significant adverse impact alone is enough to trigger a full EIS.

Further, SEG has not, to date, performed an alternatives analysis that meets the requirements under NEPA. The project purpose used for the alternatives analysis must be the project purpose identified by the USACE, not an artificially-limited project purpose crafted by SEG to strategically eliminate other potential sites from consideration.<sup>5</sup> Further discussion of SEG's deficient alternatives analysis is contained in Section VI below.

To the extent that SEG is truly concerned with delay, it would be in SEG's best interest to agree to forego the EA process entirely in light of the obvious unmitigated significant environmental impacts identified herein and agree that an EIS is necessary. However, it is the CBCC's position that the application should be denied without further analysis for all of the reasons outlined in previous submissions, and set forth herein.

## II. PROPOSED MARINA LOCATION

Our expert consultant, James Robertson of Expert Maritime Solutions said the location was improper and the marina design was equally improper. In his 2015 report, submitted to USACE during the 2015 public comment period, Mr. Robertson made the following comments:

"I have personally visited hundreds if not thousands of marinas in my 31 years in the United States Coast Guard and 5 years in maritime private sector, and have seen good planning and construction and have seen bad planning and construction. The proposed Coral Bay Marina is in my professional opinion very bad planning and design. The prevailing winds and seas (as per chart below) are 120 deg or East Southeast 53% of the time and the average wind speed is 11.7 knots which blows directly into Coral Bay.

The overlay of the marina design shows most of the boat slips would be Beam (side) to the seas/waves, which would cause constant damage to the vessels and the pier. Vessels are designed to take the seas/waves on or directly off the bow, NO VESSEL is designed to take seas from abeam (side). When you add to these adverse conditions the fact that the vessel is moored (tied up) to something fixed there will be damage to the vessels, making the marina unsafe and inappropriate. The only way to eliminate the everyday results from this "act of nature" would be to erect a Sea Wall across most of the entrance to the bay, an untenable and unreasonable alternative due to its very invasive character and effect on the on the makeup of Coral Bay.

I based the conditions on an average day in St John (Coral Bay). This does not reflect the event of a Hurricane or Tropical storm. In the event of a Hurricane or Tropical Storm, it is my professional opinion that there would be catastrophic damage caused by the debris from the marina and the vessels, and the cleanup could take months. I have personally witnessed major marinas destroyed by hurricanes, mostly category one and two storms, these marinas would not have been damaged as badly if they were designed correctly."

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<sup>5</sup> For example, the USACE refused to accept the developer's definition of a minimum size project in Hartz Mountain 404(q) Elevation. HOUACE Findings (Unpublished) (July 25, 1989).

We note that in their document submission of December 2017, the SEG consultant concurs that the conditions at the proposed marina site do not meet the standards for a calm water marina and extreme weather events will cause the marina to fail catastrophically at a return period of 20 years.

Based on the real-world experience of extreme weather during 2017, and based on the normal wind and wave conditions in Coral Bay Harbor, and based on the advice of two expert consultants, it should be readily apparent that the proposed site is not appropriate for a marina of this design. On that basis alone, SEG's application should be denied.

We also note that the revised marina drawings prepared by Technomarine and submitted as Attachment B to the August 2017 submission, includes the following Design Criteria on the drawing identified as 4895B-GL01:

DESIGN CRITERIA	
WIND SPEED (25 yrs) FULL OCCUPANCY:	83 mph
WIND SPEED (50 yrs) WITHOUT BOATS:	96 mph
SECURITY FACTOR (WIND LOAD) :	1.5
WAVE PERIOD (25 yrs):	2.6 sec.
CURRENT SPEED (25 yrs) :	1.75 Knots (0.9m/s)
BULKHEAD ELEV. :	+4.2'
SURGE (25 yrs)-STILLWATER ELEV. + WAVE :	5.7 ft MSL
WAVE HEIGHT (25 yrs) :	1.2 ft MSL
SURGE (100 yrs)-STILLWATER ELEV. + WAVE :	9.2 ft MSL
WAVE HEIGHT (100 yrs) :	3.2 ft MSL

It should be self-evident that a marina designed for a maximum wind speed of 96 mph, with a security factor for wind loading of 1.5, would not have come close to survival in the 200 mph winds of Hurricane Irma. There is also ample evidence that wave heights and storm surge exceeded the 25 year return levels in the design criteria. It is surprising that a marina designed with these inadequate criteria would be proposed in 2018 following the experiences on St John of 2017.

The applicant has also made statements that the marina would be emptied of boats prior to the approach of any hurricane (see letter from Jeff Boyd in the February 2017 submission – "For hurricane conditions the marina will be evacuated.") You should note that there was no safe anchorage within any reasonable distance of St John during Hurricane Irma. Anchorages throughout the British and US Virgin Islands were destroyed by the intense winds. Even Hurricane Hole, a safe refuge for generations, experienced almost total loss of boats moored within the innermost reaches of the bay. In an extreme event such as Hurricane Irma, evacuation of the marina would simply place the burden of boat wreckage on a neighboring location.

### III. ECOSYSTEMS CUMULATIVE IMPACTS

In his 2015 expert report, Rafe Boulon said that the species inhabiting the Coral Bay ecosystems, including the mangroves, were particularly sensitive to the toxic pollutants discharged into the water by large yachts and marina operations. Boulon made the following comments regarding the mangroves which were included in our comments to USACE during the 2015 public comment period:

"Of primary concern for the mangroves in Coral Harbor would be the location of this proposed marina immediately seaward and to windward of them. Any and all pollutants entering the water and air from the marina would flow by wave and wind action towards the mangroves, causing significant adverse impacts. Nutrients from human generated waste would likely cause eutrophication of the mangrove prop-root communities and result in excessive algal growth, which would displace invertebrate and fish communities and in turn eliminate any juvenile fish nursery habitat. Petroleum and other chemical contaminants that float on the surface of the water and originate from the proposed marina will coat the mangrove prop-roots, either causing direct mortality of the trees (I have personally observed this at Red Hook, St. Thomas) or weakening them and increasing susceptibility to other stressors. The exhaust gasses produced from vessel engines and generators would impact the aerial portions of the mangroves and affect all wildlife nesting, roosting and/or foraging there."

One of the most devastating effects of Hurricane Irma was the almost total collapse of the mature red mangroves fringing Coral Bay Harbor. It appears as though the regeneration of the critical fringing mangroves will be dependent upon the success of the numerous propagules, or seedlings, that are currently appearing in the mangrove wetlands.

As with many other species, the seedlings of the red mangrove are far more sensitive to toxic compounds in their environment than more robust, mature specimens would be. I asked Mr. Boulon whether he had any first-hand knowledge of the relative sensitivity of propagules versus mature red mangroves to pollutants, including hydrocarbons from fuel spills and bilge effluent. Boulon replied as follows: "It has been my observation that red mangrove propagules and seedlings are considerably more sensitive than mature trees. When I was in Red Hook at Fish and Wildlife I was monitoring a small clump of red mangrove seedlings and there was a small fuel spill from a marina upwind. The fuel coated the seedlings and killed them within days while the similarly affected adjacent mature trees showed no stress that I could detect." (email correspondence)

The current crop of red mangrove propagules were the offspring of the mature red mangroves that are currently either dead or very slowly regenerating from their root systems. There will be no more propagules produced until the immature seedlings emerging today in the wetlands become mature specimens. If this crop of propagules is killed, then the mangroves may not ever regenerate naturally.

I also asked Mr. Boulon about other species whose habitat and food sources were compromised by the 2017 storms. He responded as follows: "As for other species in the bay that were stressed or otherwise impacted by the storms, any recovery would certainly be affected negatively by pollutants such as would be generated by a marina. This could very well compromise any natural recovery." (email correspondence)



The natural environment of Coral Bay Harbor – the mangroves, the benthic habitat, marine life, as well as upland forests – is in the process of a slow natural recovery, which will take many years. Any additional burden placed on this recovery, as from siltation of the water column due to pile driving, toxic effluents from yachts, fuel spills, sonic impacts from construction, and so forth, could stress the natural recovery to the point of failure. This is simply not the point in time to even contemplate placing additional stresses on our fragile natural environment.

#### **IV. SONIC IMPACTS – PILE DRIVING**

One of the topics most frequently mentioned in public letters and comments in opposition to the Summer's End Group marina was the impact on the human and natural environment from driving pilings into Coral Bay Harbor. Many months, if not years of constant hammering, echoing throughout the hillsides of the Carolina Valley, would decimate tourism and make the area virtually unlivable for residents. The impact on marine life, particularly cetaceans including humpback whales and dolphins, as well as endangered sea turtles was a major concern expressed by many.

In their Environmental Assessment Report ("EAR") for the marina project, SEG claimed that they would be using a vibratory hammer for pile driving whenever feasible. In fact, the use of vibratory pile drivers is mentioned at least 17 times in the EAR and is cited as one of the factors to minimize environmental impact. The esonofication impact on marine life was calculated by SEG on the basis of vibratory pile driving, leading them to conclude that the installation of marina pilings would not impact marine life.

In spite of multiple requests for a geotechnical survey of Coral Bay Harbor, including analysis of the substrate composition, SEG has never provided any evidence that vibratory pile driving would be feasible in Coral Bay. SEG has never commissioned a geotechnical survey of the marina site. To the contrary, many local people with firsthand knowledge of the seabed have stated that solid rock is found in places at very shallow depths below the bottom sediment, and vibratory hammers will not be adequate for driving pilings.

In their letter of December 15, 2017, the applicant's agent Katherine English made the claim that a research report published by Dr. Barry Devine and others provided evidence that vibratory hammers could be used for at least the first ten feet of pile driving. This was an erroneous interpretation of the Devine report.

I contacted Dr. Devine (who was previously a resident of Coral Bay), and asked him to review the conclusions of the Summer's End Group regarding use of vibratory hammers. He responded to me by email and made the following statement: "We found the bottom extremely variable for bedrock depth. In some cases bedrock was covered with only a few inches of sediment and in others, several feet. We utilized 3" x 10' aluminum tubes and coupled them up to 30' because we were working in depths of water from 4- 20' and they had to reach to the surface and above to be connected to the vibracore engine on a 28' workboat in the wind and waves. The length of the tube gave us a potential core of 9', but throughout 100+ cores across the VI, maybe 3 or 4 would be longer than 6'. Most all were much shorter than that." (email correspondence)

SEG's statement that the Devine report provides evidence of 10 feet of sediment suitable for vibratory driving is clearly incorrect. I asked Dr. Devine if his work provided evidence of soft sediments up to 10

feet in depth throughout the marina site. His response was "No that is not at all correct. There are soft sediments, generally shallow, distributed according to the tides, currents, underlying depths and storms. The pipes were 10' but the cores collected in all cases were much shorter." (email correspondence)

In their response letter of February 26, 2018, SEG seems to have abandoned the idea of using vibratory hammers. Their sole response on this topic is a letter from Technomarine, dated February 23, 2018. In this letter Technomarine describes the pile installation process using impact driving only. However there are assumptions made by Technomarine which are highly dubious and not supported by any evidence.

Technomarine states that they are relying on "our experience designing over 900 marinas in nearly identical geotechnical conditions." It is puzzling that they could make such a claim without ever conducting a geotechnical survey of Coral Bay Harbor. How can they claim that Coral Bay is "nearly identical" to their other projects if they don't know what lies beneath the seabed of Coral Bay?

Technomarine then goes on, in the same letter, to state that they are "assuming a mix of fine, silty sand and clay soil conditions" throughout the 25 feet of piling embedment. I asked Dr. Devine if he could confirm whether the seabed of Coral Bay Harbor is composed of at least 25 feet of fine silty sand and clay soil. His response was "This cannot be assumed. Sediment layers vary greatly across the harbor in depth, materials and layering. From our limited and distinctly different sampling approach we could never make the statement about the substrate conditions or depth to bedrock. It is not fine silty sand and clay soil to 25'. Depth is significantly lower, deposition varies by place and so does bedrock."

In summary, it is apparent that the Summer's End Group and their technical advisors have no firsthand knowledge of the seabed and substrates beneath Coral Bay Harbor and the practicality of using any particular method of pile driving. The number of hammer blows to install a piling to the required embedment depth is fundamentally an unknown, and so all claims about minimization of impacts through use of vibratory hammers must be dismissed as pure speculation.

## **V. IMPACTS TO VIRGIN ISLANDS NATIONAL PARK**

The one institution most responsible for maintaining the natural character of St John island is the Virgin Islands National Park ("VINP"). With its extensive land ownership and stewardship of offshore waters, the park is the main reason that hundreds of thousands of tourists visit St John and support the island economy.

It is no wonder that the marina's proximity to the VINP and the Virgin Islands Coral Reef National Monument ("VICRNM") was one of the reasons most frequently cited by the public in comments in opposition to the SEG marina. The public concern was that the addition of hundreds of motorized yachts with their attendant tenders and personal watercrafts would severely impact the visitor experience of the park, and particularly the pristine waters of Hurricane Hole.

The Superintendent of the VINP wrote to the Army Corps in January 2015 (during the first Public Comment period for the SEG project), and said the following:

"I find no mention of Virgin Islands National Park or Virgin Islands Coral Reef National Monument in the permit information as supplied on the ACE web site. Likewise I have read the

Environmental Assessment Report provided by the Summer's End Group to VI DPNR some months ago. I want to call to your attention and to the attention of the U.S. Fish and Wildlife Service that there is no mention whatsoever of potential impacts to the natural or cultural resources of either Virgin Islands National Park or Virgin Islands Coral Reef National Monument in this document. This, in spite of the fact that the applicant states that the "largest factor" in locating this marina is its proximity to the Park and Monument and the proliferation of corals contained therein. What is most disturbing, given this statement is the complete lack of consideration given by the applicant to the potential negative cumulative impacts to Park and Monument resources caused by the increased vessel traffic associated with the marina. There is no evidence of consideration or thought given to impacts on water quality, marine resources, wetlands (mangrove areas), coral reefs, sea grasses, fish and marine invertebrates and species of concern protected by the Endangered Species Act. There is no indication of consideration of impacts to Park and Monument soundscapes, lightscapes or cultural and archaeological resources; not to mention visitor use and experience."

These strong sentiments have become even more pressing following the devastation of Hurricanes Irma and Maria. In particular, the mangrove wetlands of Hurricane Hole, including portions within the VI Coral Reef National Monument, suffered extreme damage from the winds and tidal surge of Irma. The wreckage of boats who sought safe anchorage within the "creeks" of Hurricane Hole continues to cause damage to the natural environment.

On April 13, 2018, the NPS presented a lecture on "The State of Our Reefs" looking at coral reef conditions post Hurricanes Irma and Maria. Jeff Miller, fisheries biologist with the National Park Service, showed slides illustrating the extent of damage to different reef environments. His main conclusion is that there is sufficient coral cover to support reef recovery, and the water conditions are suitable for coral growth, but he ended his presentation with this message: "Every Living Piece of Coral is more important than ever before. They survived! Don't step on them now! Or drop an anchor on them!"

The coral reef recovery is very slow and perilous. Any additional impacts can completely destroy what little coral remains in places. The coral communities in Hurricane Hole were particularly hard hit.

In their most recent submissions to the Army Corps, Summer's End Group has completely withdrawn their proposed mitigation associated with VINP and VICRNM. On December 15, 2017, Katherine English (agent for SEG) wrote:

"Once the hurricanes hit, the applicant has not been successful in reaching anyone associated with the VINP and VICRNM since that time. Accordingly we are withdrawing all the proposed mitigation associated with the park from this submittal and providing alternative mitigation proposals."

We find Summer's End failure to successfully pursue communications with park officials extremely troubling and unacceptable. Given the prior comments by the Park Superintendent, and given the even more pressing current concerns about reef protection as stated by Jeff Miller, now more than ever protection of park and monument resources is critical. Education, informational buoys and marina fees – the components of SEG's prior mitigation proposal for VINP impacts – are thoroughly inadequate to compensate for the significant indirect and cumulative impacts to VINP resources. Now that even these

have been withdrawn we find the response to NPS concerns thoroughly unacceptable and possibly in violation of the relevant laws and regulations.

## **VI. APPLICANT'S ALTERNATIVES ANALYSIS**

In our 2015 comments to USACE we said that the alternatives analysis provided by SEG was inadequate and did not conform in either structure or substance with the requirements of the relevant regulations. The Corps made similar comments in the October 22, 2015 deficiencies letter to the applicant. In that letter the Corps provided detailed guidance, and stated:

"The alternatives analysis submitted with your permit application did not describe or compare with sufficient detail and rigor the different sites considered for the proposed marina. In order to allow a proper evaluation and balancing of the ability of the different sites to meet the overall project purpose (as established in our Public Notice) and their potential effects (benefits and detriments) on the public interest, we request that you please revise and expand your alternative analysis as follows:

a. The list of factors used to compare the sites should be reviewed to ensure that all relevant factors, in relation to the public interest review and the overall project purpose, are included, and that duplicative, redundant or non-informative factors are excluded. Please note that if a particular factor does not contribute to differentiate one site from the others, that factor can be excluded from the analysis. The Corps understands that important relevant factors such as: compatibility with existing land uses and landscape; potential effects to existing business and local economy; compatibility with and potential effects to existing infrastructure; potential conflicts and adverse effects related with navigation; quantification of potential impacts to benthic habitats; and potential effects to protected or sensitive resources within or in the vicinity of the alternative sites; among others, are important relevant factors that were not included in your analysis of alternatives. On the other hand, some of the factors included in the analysis were not clearly differentiated from others (e.g., "Location"). This last issue could be addressed providing more detailed definitions or descriptions for the factors, as described in more detail below.

b. The factors and criteria must be defined or described in more detail and specificity to allow an objective comparison of the alternatives. This should assist in avoiding duplicative or redundant factors. In addition, adequate discussion and documentation must be provided to support the conclusions of the comparison with regard to the alternative locations. This may require or result in a revision of the factors included for comparison.

For example, the definition or description for the "Environmental Compatibility" factor presented in your analysis is too broad. Which specific environmental resources are being targeted? Is it natural areas, protected areas, mangroves, forests, submerged aquatic vegetation, endangered species, critical habitat, coral reefs, or others? Also, how is proximity to the resources addressed in this factor? In addition, what types of

avoidance and minimization measures are included in this factor and how are they being evaluated? On the other hand, no references to maps, surveys, publications, agency records, etc. were provided to document how it was determined that environmental resources were absent or present at the alternative sites being considered. Similar comments are applicable to the many of the other factors included in your analysis of alternatives.

c. An appropriate and practicable approach to structure the comparison of alternative sites could be to conduct a tiered analysis. This could be achieved using an initial set of more general factors to screen out some alternatives, and then conduct a more rigorous analysis of the remaining alternatives based on a set of more specific factors or criteria. Based on our review of your alternatives analysis and the comments provided in response to the Public Notice, the Corps understands that at least two of the alternative sites identified (i.e., Cruz Bay and Turner Bay/Enighed Pond) warrant a much more detailed and rigorous comparison with the proposed location at Coral Harbor."

The alternatives analysis provided by the applicant in August 2017 did not conform to this detailed and excellent guidance. In particular, as pointed out in your letter of October 2017, the August alternatives analysis did not provide an objective methodology for ranking the different criteria and sites. Your letter stated:

"...it is difficult to understand the weight given to the different factors or criteria used to rate and compare the alternatives. Therefore, we recommend that you prepare and submit a table summarizing your alternatives analysis. This table should indicate and explain the rating or value given to each comparison factor/criterion used to select the preferred alternative. In other words as part of your alternatives analysis we request that you: (1) define a set of criteria for comparing the alternative sites and layouts considered; (2) define a system to rate the alternatives against each of the criteria; and (3) describe a method to comparatively weigh each rating as to its importance."

The applicant revised and resubmitted their alternatives analysis in December 2017, and included a ranking system in the revised analysis. However the revised analysis is still deficient in a number of critical areas. We would like to point out the following:

1. **Overall Project Purpose:** The Corps guidance for conducting an alternatives analysis is very specific about use of the "Project Purpose" as defined by the Corps in any analysis. The guidance states "Once the Corps has placed the project on public notice, **the applicant must use the overall project purpose as stated in that public notice** or the overall project purpose as provided back to the applicant if the Corps has modified their original project purpose." (Information for Preparing an Alternatives Analysis Under Section 404, Jacksonville District Regulatory Division, June 2014)

Your deficiencies letter of October 2015 addressed this point as well, stating: "In order to allow a proper evaluation and balancing of the ability of the different sites to meet the overall project purpose (**as established in our Public Notice**) ..." (emphasis added).

The "overall project purpose" as established in the Public Notice for this project (July 9, 2015) is as follows:

**PROJECT PURPOSE**

Basic: Offshore Marina.

Overall: **Construct a private commercial offshore marina with ancillary and commercial facilities in adjacent uplands in St. John, USVI.**

In their most recent (December 15, 2017) alternatives analysis the applicant has totally ignored the Overall Project Purpose as defined in the Public Notice issued by the Corps and has performed their analysis against a new "project purpose" that does not comply with the Corps regulations. In Section II of their most recent alternatives analysis the applicant states:

"The Applicant's project purpose is to construct a 144 wet slip, fixed dock marina with services including: a waste pump out, fueling, Customs facility, retail stores, restaurants, and parking for marina guest and the public."

This is a fatal deficiency in the applicant's alternatives analysis. The "project purpose" is the framework against which the alternatives are weighed, and use of the wrong project purpose results in erroneous conclusions in the analysis. In particular, we believe that if the applicant had used the correct project purpose, as defined in the Public Notice, then either a different site would have been identified as the most appropriate location for the proposed marina or the "No Action" alternative would have been clearly preferable to any of the evaluated project alternatives.

2. **Missing Evaluation Factors:** In your original guidance (October 2015) the Corps identified certain factors that should be included in the alternatives analysis. One such factor specifically requested by the Corps was "potential effects to existing business and local economy" and we strongly concur that this is a highly significant factor for the public interest determination and must be included in any alternatives analysis.

The applicant did not include this factor in their analysis. They chose to use only five factors: Accessibility and Infrastructure, Navigation, Adequate upland area, Safe Harbor, and Compatible with existing land uses.

In our comments of August 2015 we included a letter signed by virtually every small business owner in Coral Bay (31 businesses) urging the Corps to deny the permit for the Summers End Group marina. The letter includes this statement: "We believe this project will be damaging to the economy of Coral Bay – its small businesses, its rental properties, and its ecotourism appeal. We urge you in the strongest terms to deny the permit requested by the Summers End Group."

If the "potential effects to existing business and local economy" had been included in the evaluation factors for the alternatives analysis, as specifically identified by the Corps as an "important relevant factor" then the conclusion of the alternatives analysis would almost

certainly have been very different. The potential effects to existing business would have ranked very high (positive) for the Cruz Bay and Enighed Pond sites, and would have ranked very low (negative) for the Coral Bay sites.

3. **Changed Baseline Conditions:** As mentioned previously, the impacts of hurricanes Irma and Maria have fundamentally changed site conditions for many of the locations considered in the applicant's alternatives analysis. In particular, the benthic habitats have been impacted to varying degrees, the wetlands (mangrove) habitats have been severely impacted, the stability of public infrastructure has been impacted, and the condition of the local economy has been temporarily impacted. An analysis which looks at the potential environmental impacts of a project based on the conditions which existed prior to the severe storms of 2017 is likely to reach erroneous conclusions. We believe the entire analysis is therefore flawed for failure to consider the changed baseline conditions. Since the high level impacts of the storms were well known by December 2017 (the date of the last alternatives submission), it is unacceptable that the applicant made no mention or consideration of these changed conditions in their most recent analysis.

For the reasons cited above we believe that the alternatives analysis submitted in August 2017, and revised in December 2017, is fatally flawed and self-serving. Had the correct overall project purpose been used, and the complete set of evaluation factors, and consideration of the real environmental baseline post-Hurricane Irma, then it is almost certain that an alternate site would have been identified as the most appropriate for this project. We believe that Coral Bay Harbor would have ranked quite low in the objective ranking of locations based on an objective and properly executed alternatives analysis.

## VII. SEA GRASS IMPACTS FROM MARINA CONSTRUCTION AND OPERATION

The applicant has calculated impacts to sea grasses from all sources (construction, dock shading, boat shading, ongoing operations) as 3.75 acres in total. We believe this estimate significantly understates the impacts to sea grass and mischaracterizes the overall impact to the benthic habitat. The erroneous estimate is then repeated by the applicant in numerous responses, in rebuttal to six federal agencies (NMFS-PRD, NMFS-HCD, FWS, NPS, EPA, USCG) and in multiple appendices and in multiple commentaries within the rebuttal letter (Alternatives Analysis, Benthic Mitigation Plan, Responses to CBCC, Impacts to Seagrass, Threatened or Endangered Species).

The basis for the 3.75 acre estimate is stated in the excerpt below from the applicant's August 2017 submission:

"The project will be directly impacting approximately 1350ft<sup>2</sup> due to the placement of 960 piles ranging from 14"-18" in diameters (66- 14"square concrete, 457 14"- round steel encased concrete, 437-18" – round steel encased concrete). 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 seagrass under vessels 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."

To summarize the paragraph above, the table below shows the area impacts (as claimed by the applicant) from each of the main sources of impact:

<b>Cause of Impact</b>	<b>Area of Impact to Sea Grasses</b>
Piling Footprint	0.031 acre
Dock Shading	0.487 acre
Vessel Shading (at 50% impact)	2.825 acre
Barge Spudding	0.023 acre
Subtotal	3.366 acre
Marina Operations – Prop Wash and Scour @10% of above	0.337 acre
<b>Total Impact (per applicant)</b>	<b>3.703 acre (approx 3.75 acre)</b>

There are multiple problems in this analysis. First, the estimate of shading impacts from the fixed dock structures and boats within the marina neglects the cumulative impacts of these two sources of shading impacting the same regions of sea grass and ignores the fact that although any single vessel may, on average, be in place for short periods of time the overall occupancy of the marina will reach close to 90% during peak months of the boating season, according to the applicant's market analysis. Second, the estimate neglects the shadows created by 966 pilings, 5 feet high, and averaging 16" in diameter. Third, the estimate neglects the effects of shadow elongation in the latitude of Coral Bay. Finally, the estimate for the effects of prop wash and scour (10%) has no basis in science, has no supporting discussion and is flawed for a number of reasons discussed later.

#### **Cumulative Effect of Dock and Boat Shadows**

The cumulative shading effect is due to the fact that the grated decking, which by itself will reduce sea grass cover by at least 54% (Landry, 2008), is overlapped by the shadows created by boats within the marina. Due to the fact that the sun is virtually never directly overhead the shadows of the dock and the boats move in an east west direction during the course of the day and the large boat shadows cover areas which would otherwise be in partial dock shadow. The result of these cumulative shading impacts is to render the entire area of dock and boat shading unsuitable for sea grass growth.

It should be noted that the Landry study applied primarily to single family, small dock structures. The extrapolation to a large commercial marina with 12' wide walkways running in a predominantly east-west direction and 100'+ mega yachts is problematical.

We believe that a more accurate estimate of sea grass impact is obtained by adding the boat shadows at peak month occupancy to the fixed marina structure shadows and then increasing by average shadow elongation.



### Effect of Shadow Elongation

At the latitude of Coral Bay (18 degrees North) the average elongation of shadows is approximately 22% during the mid day period (10am- 2pm) of the winter months (Dec – Feb). This means that a yacht with a footprint of 1000 square feet will cast a shadow elongated by an average of 22%, for a total shadow area of 1220 square feet. The elongation factor varies by time of day and time of year. In this estimate we are using the average shadow elongation from 10am through 3pm on January 1.

### Piling Shadows

The current design calls for 960 pilings at an average height of 5' above the water at an average water depth of approximately 10'. The pilings are, on average 16" in diameter. The total length of the piling above and below water will cast a shadow on the sea bed. The calculation for this shading is shown below:

Factor	Value
Number of Pilings	960
Average Piling Height (sea bed to deck)	15 feet
Average Piling Diameter	16 inches
Single Piling Shadow Area	18.75 sq ft (height * diameter)
Total Piling Shadow Area	18000 sq ft (0.413 acres)

### Total Shadow Impact from Fixed Structures and Vessels

As a consequence of (a) the overlapping of boat shadows and marina structure shadows, and (b) the elongation of shadows, it is erroneous to use the estimates of 54% for sea grass loss due to docks and 50% for sea grass loss due to boats. It is well known that sea grasses will die after two weeks in shade. It is our opinion that the total area of the boat shading during peak utilization months (90% occupancy of 5.65 acres) should be added to the total dock area (0.90 acres) and piling shadows and then increased by 22% to account for shadow elongation in order to arrive at a reasonable estimate for the cumulative effects of dock and boat shading at the latitude of Coral Bay.

The resulting shade impacts and loss of sea grass from the fixed marina and boats therein is summarized in the table below:

Shading Component	Acres Shaded
Fixed Docks	0.90 acres
Piling Shadows	0.413 acres
Boats Shadows at 90% occupancy peak month	5.085 acres
Sub Total	6.398 acres
Shadow Elongation Factor	22%
<b>Total Sea Grass Shading</b>	<b>7.801 acres</b>

## Construction Impact

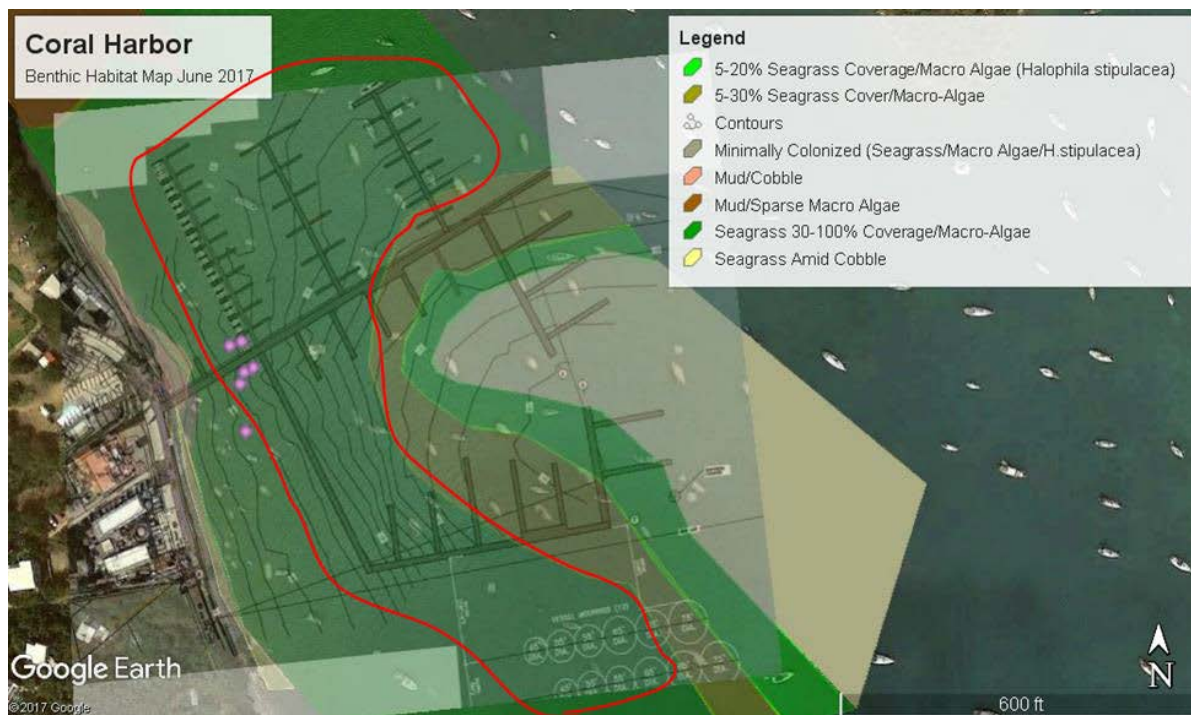
The direct impacts to sea grasses from construction, as estimated by the applicant, are minor. They consist of the piling footprint (1350 square feet) and the barge spudding (900 -1200 square feet). This amounts to a total impact of 0.05 acre and we are omitting this component from our analysis.

## Marina Operational Impacts

The applicant has made an unsupported claim that "the operation of the marina will have an impact due to prop wash scour and you can assume another 10% loss." There is no reference cited for this 10% estimate, and there is no data cited to support it. It is also unclear from the text what the 10% is intended to apply to, although the numerical result indicates they are applying the 10% factor to the shading impact total. This does not make logical sense: the impacts of prop wash scour will extend throughout the navigational ways and berths of the entire marina, not solely where shadows fall.

Furthermore, the die-off of sea grasses due to shading will release large quantities of fine terrigenous sediments which are trapped within the root structure of healthy sea grasses. When these grasses die off due to shading, the effect of prop wash, currents, wind and wave action will be to resuspend these sediments in the water column, and then to redeposit them on adjacent areas of the seabed, thereby causing further die-offs of sea grasses.

The distribution of healthy sea grass meadows within the marina footprint is shown in the overlay image below (excerpted from the applicant's submission with added highlight):



The dark green area closest to the shoreline is the 30-100% seagrass coverage region, and it is on this region that the majority of the marina and navigation ways are located. The red line encloses the region of dense sea grass within the navigable portions of the overall marina. The majority of this region is at depths considerably less than 10 feet. The region enclosed in red is approximately 13 acres.

Rather than make the same error as the applicant, we prefer to use a range estimate for the cumulative impact of prop wash and scouring on the sea grasses already impacted by shading. We estimate that between 25% and 50% of these grasses will die off over time due to marina operations.

As evidence for the impact of prop wash, the photograph below is a 120 ft yacht which attempted to come into Coral Bay Harbor in the vicinity of the proposed marina. This photograph was taken on Feb 22, 2017 under normal wind and water conditions. It is obvious that the yacht captain misjudged bottom depth resulting in severe prop wash and damage to the sea bed. We anticipate this will happen frequently with the size and number of vessels navigating the proposed marina and surrounding waters.



### Total Impact to Sea Grasses Due to Construction and Operation

The table below summarizes all of the foregoing considerations.

Impact Factor	Acres Impacted
Shading from Fixed Structures	1.313 acres
Shading from Boats	5.085 acres
Shadow Elongation	22%
<b>Total Shading Impact</b>	<b>7.801 acres</b>
Total Dense Sea Grass Cover in Navigational Area	13 acres

Range Estimate for Cumulative Impact of Prop Wash	25-50% (4.25 – 6.5 acres)
<b>Total Sea Grass Impact (all factors)</b>	<b>12.1 – 14.3 acres</b>

We believe that a reasonable estimate of loss of sea grass meadows due to the construction and operation of the marina is in the range summarized above – approximately 12 – 14 acres. This is to be contrasted with the applicant's estimate of total impact to sea grasses of 3.75 acres. Based on the analysis of all impacts above, it is our opinion that the applicant has understated the loss of sea grass by at least 10 acres.

This is a critical error in the applicant's analysis and it impacts their rebuttal in all of the areas mentioned in the first paragraph, including responses to federal agencies and the alternatives analysis.

### VIII. SIGNIFICANT ERRORS IN APPLICANT'S SEA GRASS IMPACT STATEMENT

In estimating environmental impacts the applicant, and the Corps, are obligated to use the best scientific data available. We have reviewed the applicant's estimate of total sea grass loss (3.75 acres) and the scientific authorities cited in their report and our review raises significant concerns about the science behind the applicant's estimates.

The sole authority referenced by the applicant in the computation of sea grass loss due to shading and marina operations is cited as (Landry, 2008). This is a reference to a study on the impacts on sea grasses from grated versus solid decking in Florida for small residential docks. The author of the study, Brooke Landry, is currently an employee of the Maryland Department of Natural Resources.

I contacted Ms. Landry and asked her to review the applicant's estimate of sea grass loss (3.75 acres) and to review our independent estimate of sea grass loss (12.1 – 14.3 acres) and to provide an opinion as to which estimate is a more accurate projection of sea grass loss from the construction and operation of the marina. Brooke Landry is currently the Chair of the Chesapeake Bay Program's SAV Workgroup and Biologist at Maryland Department of Natural Resources. She is the author of the study cited by the Summers End Group ("The Effects of Docks on Seagrasses" - 2008) and is an authority on sea grass and SAV impacts and recovery.

I provided Ms. Landry with three documents: the February 5, 2015 letter from NMFS-HCD to USACE, the August 15, 2017 response to the NMFS letter from SEG ("Appendix C2"), and our independent estimate and computational methodology for sea grass loss (Section VII of this response). I asked Ms. Landry if she could compare the applicant's estimate and methodology with our work and provide any relevant feedback.

On April 26, 2018, I received this message from Ms. Landry:

"Thanks for forwarding the NMFS letter as well as Appendix C2, the rebuttal. I can't imagine how this consultant determined a 46% survival rate based on the data presented in our dock study. The docks, grated or not, all had a significant negative impact on underlying seagrasses.

**In any case, I've read through your counter-estimates and I find them much more appropriate than what the consultant came up with. It's an incredibly thorough and thoughtful approach**

**to estimating shading impact and I would recommend any scientist in the field consider using similar methods. You're correct, seagrasses don't survive shading for too long at all. If you park a yacht over a patch of seagrass in shallow water and don't take it out for several weeks, the seagrasses underneath will die.** Even if they're not completely eliminated by the time you do take the boat out, one or two days of sun isn't enough to reset their clocks." (**emphasis added**)

Brooke Landry, email communication, 26 April 2018

This is from the scientist who is cited by SEG as their authority on shading impacts to sea grasses. The conclusion from this is that, based on the best scientific analysis available, and validated by the authority cited by the Summers End Group, the probable loss of sea grass from construction and operation of the proposed marina is most likely between 12.1 and 14.3 acres, not the 3.75 acres claimed by the applicant. Their estimate is too low by a factor of 350% based on the best science available.

The impact of this is extremely significant. Summer's End has repeated their incorrect estimate of 3.75 acres of sea grass loss in multiple documents and analyses, including:

- Appendix C-1 Response to NMFS PRD comments, August 2017
- Appendix C-2 Response to NMFS HCD, August 2017
- Appendix C-3 Response to FWS, August 2017
- Appendix C-4 Response to Comments VI National Park Service, August 2017
- Appendix C-5 Response to EPA Final, August 2017
- Appendix C-6 Response to US Coast Guard, August 2017
- Appendix E Benthic Mitigation Plan 2017
- Summers End Group Rebuttal 8-15-17 final, including the following sections:
  - Alternatives Analysis
  - Impacts to Sea Grass and Benthic Habitats
  - Threatened or Endangered Species
- Compensatory Mitigation Plan, February 2018

The higher and more accurate estimate of marine grass habitat loss (12.1 – 14.3 acres) has profound implications on the Alternatives Analysis and on the proposed mitigations. It would clearly render the "No Action" alternative superior to any of the proposed alternatives, especially the applicant's Preferred Alternative, since the huge loss of sea grass habitat in the applicant's Preferred Alternative would clearly have greater environmental impact than the No Action alternative.

We respectfully request that the applicant's incorrect and far too low estimate of sea grass loss not be used as the basis for evaluation or decision making on their permit application, given that the scientist they cite as an authority disagrees with their estimate.

## **IX. COMPENSATORY MITIGATION PLAN**

The elements of the applicant's Compensatory Mitigation Plan (February 2018) are as follows:

- transplantation of 1350 square feet (sf) of sea grass
- provision of pump out facilities and waste receptacles
- planting 300 red mangrove propagules along 850 feet of rip rap shoreline
- collection of 10,000 sf of debris scattered in 750 acres of Coral Bay waters
- reattach loose corals with underwater epoxy
- remove 1,200 sf of debris from sea grass beds within marina footprint
- maintenance of stormwater BMP's

We will now look at each of the proposed mitigations and evaluate their likelihood of success and suitability for compensation for loss of aquatic habitat.

The applicant claims the project will result in the loss of 3.75 acres, or 163,350 sf of sea grass. We believe for the reasons cited above that this estimate is incorrect and a far more accurate estimate is in the range of 12-14 acres. However for the purpose of this analysis of compensatory mitigation we will use the applicant's own estimates and demonstrate that their proposed compensatory mitigation is inadequate for their own impact estimate, and clearly insufficient for the correct impact estimate.

### **Sea Grass Transplantation**

The area into which the transplanted sea grass sods are intended to be placed is currently a very shallow, barren muddy area. Sea grasses have died off in this area because it is at the outlet of the main Carolina ghut which frequently deposits large volumes of heavily laden silted water there. Until major improvements are made throughout the Carolina valley watershed this will not be a viable habitat for sea grasses. Several local experts have stated that the transplantation of the sea grass will almost certainly fail.

Regardless of success or failure, in percentage terms the 1,350 sf of transplanted sea grass amounts to less than one percent of the applicant's own estimate of lost habitat (0.83 % of 3.75 acres).

### **Pump Out and Waste Receptacles**

Provision of pump out facilities and waste receptacles is a standard requirement of any marina project. It cannot be considered as compensatory mitigation because it would need to be done regardless of any impacts to habitat.

### **Planting Red Mangroves Along the Shoreline**

The shoreline onto which the application proposes to plant 300 red mangrove propagules has not been viable mangrove habitat for as far back as we are able to research. The image below is an aerial photograph from 1954 showing the general vicinity of the proposed marina, before the onset of significant 20th century development in Coral Bay:





In the rendering below, we have highlighted the roadway in RED and outlined the extent of the 1954 mangrove just north of the proposed marina in GREEN.



It is readily apparent from the 1954 aerial photograph that there were no mangroves along the shoreline south of the highlighted mangrove. The roadway was directly on the shoreline, where it remains today, and it veered inland at the start of the mangrove wetland to avoid the "swamp" where the mangroves grew. There were no mangroves along the shoreline where the road traveled along the water's edge in 1954.

This area is devoid of mangroves because of constant wave action. Mangrove propagules require calm water conditions to root and thrive. Placing 300 red mangrove propagules along 850 feet of shoreline where they haven't grown in at least 65 years is highly unlikely to result in success. We therefore dispute the efficacy of this mitigation and cannot see any logic in considering it as compensation for loss of 3.75 acres of sea grasses.

Furthermore, it is worth noting that in the unlikely event that the mangroves did survive, they would be located downwind and down current from the 28 acre marina (the dominant wind and wave patterns are towards the shoreline where the mangroves would be planted). Any habitat created by these new mangroves would be continually immersed in the contaminants released by the yachts resident in the marina (bottom paints, cleaning agents, bilge and cooling water, hydrocarbons). This makes it extremely unlikely that the habitat would be conducive to restoration of aquatic function.

#### **Collection of Hurricane Debris in Coral Bay**

The applicant proposes to remove 10,000 sf of hurricane debris from 750 acres of greater Coral Bay. Although this is certainly a good thing to do, we question the practicality of the applicant's plan and the extent to which it will compensate for loss of aquatic function from destruction of sea grass beds.

The applicant claims that it will cost \$150,000 to remove sunken debris from 750 acres. Based on a team size of 4 (2 divers in the water, 2 crew on the boat), and at a very nominal cost per person of \$25 per hour, this translates into 1500 hours of work time, or 2 hours per acre. Given that the depths within the region to be cleared range up to 80 feet (limiting dive time and number of ascents/descents) and given the challenges of rough water and poor visibility, it seems thoroughly unrealistic to complete an acre in 2 hours. A more realistic figure might be 1000 sf per hour, allowing for time to descend, survey, disentangle debris, and raise to surface. This would then require twenty times more effort than budgeted by the applicant (43 hours per acre, or 32250 hours in total).

However, the main concern regarding adequacy of the measure is that the applicant proposes to remove 10,000 sf of debris. This would, presumably, allow for regeneration of 10,000 sf of habitat, which is roughly 6% of the applicant's own estimate of total loss of sea grass, assuming all of the removed debris was located on sea grass or coral habitat.

#### **Reattaching Loose and Broken Corals**

There is insufficient information provided by the applicant to quantify the impacts of this measure. We do not know how much coral would be restored, the survival rate, or the temporal implications of this mitigation.



### **Removal of Debris from Sea Grass Beds Within Coral Bay Harbor**

The applicant proposes to remove 1,200 sf of debris from sea grass beds within Coral Bay Harbor. This is debris remaining after the major cleanup conducted by the Coast Guard following hurricanes Irma and Maria.

We agree that this is a good thing to do for the health of the seabed, however it is an insignificant quantitative offset to the loss of habitat from the proposed marina. Using the applicant's estimate of habitat loss (3.75 acres or 163,350 sf) the removal of 1,200 sf of debris, allowing sea grass recolonization in those places where the debris is located, amounts to less than one percent (0.73 %) of the applicant's claimed habitat loss.

### **Maintenance of Stormwater BMP's**

In your October 2017 letter to the applicant ("Second Comments For Rebuttal Letter"), you asked the applicant to "complete a water circulation and modeling study, assessing the potential effects of the project on the mixing and flushing capacity, as well as the water quality of the bay" (page 3, paragraph 7).

The applicant did not provide the information requested. No water circulation or modeling study has been provided by the applicant in the materials we reviewed. Instead the applicant has provided extensive information on stormwater abatement measures which have been installed throughout the Coral Bay watershed. Some of this work was conducted by the Coral Bay Community Council with federal grant and community funding.

The water circulation and modeling study is obviously critical in the environment of Coral Bay, particularly at the site selected by the applicant for their proposed marina. Impacts to fringing mangroves, currently in need of extreme protection to allow natural recovery, and impacts to Hurricane Hole, all depend on an understanding of how the toxic pollutants released by the marina will circulate and accumulate in the confined waters of Coral Bay.

Your October 2017 request asked the applicant to discuss "which additional project modifications, or avoidance and minimization measures would be implemented" to address the potential indirect and cumulative adverse effects of marina operation in the poorly flushed environment of Coral Bay.

The applicant has once again failed to answer this question, and in place has provided extensive discussion of stormwater management devices installed throughout the Coral Bay watershed.

The ongoing maintenance of BMP's, including rain gardens, drainage swales, culverts, and other devices, is clearly required in order for them to perform in their intended manner. In many cases this maintenance work is performed by the individuals on whose property the devices are located. In other cases the Virgin Island Public Works Department is responsible for periodic maintenance. In some cases, as documented by the applicant in their February 2018 submission, maintenance has not been performed and the devices are not operating to their full capability.

We do not see how a proposal to fund the ongoing maintenance of stormwater BMP's can be considered a "project modification, or avoidance and minimization measure" to address the issues identified by the Corps.

It is also unclear whether the applicant is proposing the BMP maintenance as part of a Compensatory Mitigation Plan or not. It is mentioned within their mitigation plan but no details nor quantification of positive impacts to aquatic function are provided. Compensatory mitigation refers to "the restoration, establishment, enhancement, or in certain circumstances preservation of wetlands, streams or other aquatic resources for the purpose of offsetting unavoidable adverse impacts." Maintenance of BMP's, while beneficial to the environment, does not fall into any of the categories of restoration, establishment or enhancement of wetlands.

### **Sea Grass Impacts and Mitigation Conclusions**

We have provided scientific authority to demonstrate that the applicant's claim that 3.75 acres of sea grasses will be lost due to the proposed marina construction and operation is incorrect. A more accurate estimate, according to the authority cited in their own report, is between 12.1 and 14.3 acres of sea grass loss. This is a major error in their submission with implications to their Alternatives Analysis, Mitigation Plan, and federal agency rebuttals.

We have quantified the applicant's proposed compensatory mitigation and conclude that all of the elements combined provide for less than 10% compensation for the applicant's own estimate of habitat loss. A standard for compensatory mitigation would require greater than 100% mitigation, given the uncertainties of the compensation measures. This compensatory mitigation should not be deemed acceptable by any standard.

## **X. FUEL DELIVERY**

In their August 2017 comments to the US Coast Guard, the applicant makes the following statement regarding fuel deliveries: "The applicant anticipates that 1,975,572 gallons of fuel will be sold annually as part of marina operations. This may increase as the availability of fuel becomes more well known." Also in the August 2017 comments (cover letter), the following statement was made about fuel delivery to the marina: "in order to minimize potential environmental impacts associated with fuel spills created during boat fuel deliveries (the marina) will also be receiving fuel delivery by truck rather than over sea. This will also add traffic to the access roadways to the site but will not over burden the existing roadway system."

We estimate that 1.975 million gallons of fuel will require approximately 400 truckloads of fuel per year (based on 5000 gallons per delivery). If deliveries are made on weekdays only, this become 1-2 fuel truck deliveries per day.

Following Hurricane Irma, the Army Corps of Engineers conducted a roadway assessment of the main connecting road between Cruz Bay and Coral Bay ("Centerline Road") and concluded that the roadbed had been undermined in multiple locations and was unsafe for heavy vehicles. It took over four years to repair Centerline Road following the heavy rainfalls of Hurricane Otto in 2010. The damage to Centerline Road from Irma may require extensive repairs which could take years to complete.

The dangers to the public of multiple daily tanker trucks loaded with fuel traversing the length of St John island on a frequently compromised road are difficult to quantify. The remote location of Coral Bay makes any approach for large-scale fuel delivery problematical.

## XI. ECONOMIC IMPACTS

During the 2015 public comment period, we retained an expert in real estate economics to assess the probable economic impacts of the proposed marina. Dr. Richard Voith has an extensive background in evaluating complex projects for economic viability. His many qualifications include a Ph.D. in Economics from the University of Pennsylvania, adjunct professor at the Wharton School of Business, Economic Advisor to the Philadelphia Federal Reserve Bank, and authorship of numerous professional articles.

We asked Dr. Voith to provide an independent analysis of the project costs, the potential market, and the economic impacts of the project based upon all of the data made available by the Summers End Group. He conclusions, in 2015, included the following statements:

- "The economic impact estimates provided in the SEG Report are based on seriously flawed, unreliable data."
- "The positive economic impacts, to the extent they exist, are unlikely to flow in large measure to St. John residents."
- "Many businesses, residents, and visitors do not anticipate the type of gains projected by the SEG Group."
- "The SEG economic impact analysis ignores any potentially negative economic impacts resulting from construction noise, environmental degradation, or changes in the overall character of the island."
- **"It is my opinion as an expert in real estate economics and economic development that the SEG analyses are completely inadequate to demonstrate any potential positive economic impacts from the Marina project on the St. John economy."**
- **"It is my opinion as an expert in real estate economics and economic development that the SEG Report is completely inadequate to demonstrate the economic feasibility of the proposed Marina and the need for the Marina."**

The new market analysis and economic impact model submitted by SEG in August 2017 do not materially alter any of these conclusions. The new documents simply repeat unsubstantiated numbers from prior submissions or offer new numbers without any basis for validating the underlying assumptions.

In their February 26, 2018 letter to USACE, the applicant's attorney (Katherine English) makes the following statement regarding consideration of economic factors in a public interest review:

"Although the CFR does not provide a definition or an example for such a broad concept as "economics," courts have interpreted the factor to exclude any consideration of private profit and the general economic interests of municipalities. Rather, in keeping with the purpose of the

Clean Water Act, the focus of any "economics" factor in a public interest review is strictly limited to an evaluation of the economic effects related to impacts on the natural environment."

We do not agree with this statement and are not aware of any court decisions supporting such an interpretation of economic effects. Having said that, if we accept Ms. English's interpretation then it works against all of the economic arguments posited by the applicant in support of the marina. Their sole economic argument was that the marina would be profitable (to the private owners) and that it would have a positive economic effect on the municipality. We do not agree with these conclusions (as demonstrated by the sound reasoning of Dr. Voith) but even if one accepts the economic data of SEG it should not be admissible in a public interest review according to Ms. English.

As far as the "economic effects related to impacts on the natural environment" we can see absolutely no positive effects in this realm. In fact, the applicant acknowledges negative impacts to the benthic environment, to marine vegetation, to the adjacent wetlands, to the Virgin Islands National Park, and to endangered marine species. These negative impacts all have direct and indirect economic consequences as they adversely impact the central economics of the region, which is based solely on ecotourism surrounding the Virgin Islands National Park and the Coral Reef National Monument.

We believe that Dr. Voith's conclusions from 2015 are valid and even more concerning today than they were in 2015. The cumulative adverse economic impacts of a major construction project following the impacts of the extreme weather in 2017 would be devastating to the local economy.

## **XII. THE "TRUTH ABOUT ST JOHN" VIDEO**

In their August 2017 submission the applicant included a video consisting primarily of public comments regarding the proposed Summer's End Group marina project. The content of this video was then mentioned in multiple responses and documents, purporting to demonstrate widespread public support for the marina project.

In reality, the video consists of statements made by less than 20 individuals, several of whom are either investors in the marina, land owners of parcels targeted for marina development, or advisors to the marina. We do not doubt that there are some people on St John who feel the marina would be beneficial to their personal circumstances. However we strongly dispute the conclusion that the statements of 20 individuals can be extrapolated to represent "The Truth About St John."

Counted within the close to 20,000 individuals who have submitted letters, petitions, and form letters in opposition to the marina are many St John natives. We do not differentiate one group from another so we cannot say who is white, black, born here, or born elsewhere, however I personally know of far more St John residents opposed to this project than in support of it. It is telling that during the public comment period of 2015 the Army Corps received nine (9) letters in support of the marina, and over 20 thousand in opposition. If anything, this video confirms the fact that there are only a small number of residents who support the project.

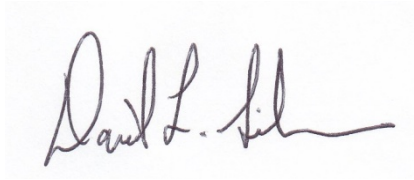
### XIII. CONCLUSIONS

We concluded in January 2015 and again in August 2015 that the Summer's End Group marina project should not proceed and the permit should be denied. There are clearly less environmentally damaging practicable alternatives for a marina servicing St John, including locations in Cruz Bay. The proposed project adversely impacts the local economy, the fragile Coral Bay natural environment, and the surrounding VINP lands.

With the experience of Hurricanes Irma and Maria, we now can see in dramatic real images – not simulations or analyses – just how exposed Coral Bay and the east end of St John island is to extreme tropical weather. This experience not only confirms the concerns raised in 2015, but adds to those concerns the cumulative impact of a disruptive multi-year construction project on top of the disruption to tourism and the severe damage to the natural environment caused by the hurricanes of 2017.

Simply put, Coral Bay is too remote, too unprotected, and too fragile to support the marina proposed by the Summers End Group. Once again we strongly urge USACE to either deny the permit, or absent a denial to require a comprehensive Environmental Impact Statement to fully understand the implications of this project on the human and natural environment.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "David L. Silverman". The signature is fluid and cursive, with a long horizontal stroke at the end.

David Silverman  
Secretary, Coral Bay Community Council  
President, Save Coral Bay

4 May 2018