Mr. Johann M. Sasso, US Army Corps of EngineersAntilles Permits Section400 Fernández Juncos AvenueSan Juan, Puerto Rico 00901-3299

email: Johann.M.Sasso@usace.army.mil

# re: Application SAJ-2004-12518 (SP-JMS) – Coral Bay Marina

Dear Mr. Sasso,

I am writing to you to offer my comments on the Army Corps of Engineers Public Notice SAJ-2004-12518 (SP-JMS) for the "St John Marina" located in Coral Bay, St John, by the Summers End Group, LLC.. I fully endorse the comments made by the Coral Bay Community Council (CBCC) in their response to this permit application. In addition, I have five topics that I would like to add to those expressed in the CBCC comments. These topics are:

- 1. Inadequacies in Coastal Zone Management Consistency Determination
- 2. Cumulative Impacts on Water Quality
- 3. Esthetic and Historic Impacts
- 4. Extent of Sea Grass Impacts and Mitigation
- 5. Marina Piling Design Physical and Functional Impacts

# SECTION 1: Inadequacies in Coastal Zone Management Consistency Determination

The public notice includes the following statement about Coastal Zone Management (CZM) consistency: "In the Virgin Islands, <u>the Department of Planning and Natural Resources permit</u> constitutes compliance with the Coastal Zone Management Plan." (<u>emphasis added</u>)

I would like to point out that in the case of the Summers End Group (SEG) application there has been no actual permit granted by the Virgin Islands Department of Planning and Natural Resources (VIDPNR), and so there is no evidence of CZM consistency, as required by the Department of the Army Rules and Regulations.

I base this statement on the following facts:

 According to Virgin Islands Code (VIC) any development of submerged lands requires a DPNR permit that is first <u>recommended</u> by a CZM committee, then <u>approved</u> by the Governor and then <u>ratified</u> by the Legislature. The DPNR permit is not effective until all three of these steps have occurred. The relevant language from 12 V.I.C. § 911 is copied below:

"Any coastal zone permit which the appropriate Committee of the Commission or the Commissioner <u>recommends</u> for approval pursuant to this section, together with the

recommended terms and conditions thereof, shall be forwarded by the Committee or Commissioner to the Governor for the <u>Governor's approval or disapproval</u> within thirty days following the Committee's or Commissioner's final action on the application for the coastal zone permit or the Board's decision on appeal to grant such a permit. The Governor's approval of any such permit or lease must be <u>ratified by the Legislature</u> of the United States Virgin Islands. Upon approval and ratification of such permit, occupancy and any development proposed in connection therewith shall not commence until the permittee has complied with the requirements of the United States Army Corps of Engineers pursuant to Title 33 of the United States Code."

- 2. The document that was signed by the St John CZM Committee (based on illegal procedures, as discussed later) has (a) not been approved by the current Governor of the Virgin Islands, and (b) has not been ratified by the Legislature of the Virgin Islands, as required by the code cited above in order to become effective. Therefore, at the moment, there is no DPNR permit for this project, and therefore no evidence of CZM consistency as required by the USACE rules and regulations.
- 3. The meetings of the St John CZM Committee at which the Summers End Group permit application was reviewed were not conducted in conformity with Virgin Islands law. Specifically, the presence and participation of a CZM Committee member who was a legal advisor to the Summers End Group, and who was an owner of leases of property subject to development by the applicant, was a clear conflict of interest under the law. The fact that this individual did not vote in the final meeting does not in any way obviate the violation of law and ethics stemming from his participation.

As evidence of this conflict please consider the following: first, on the Public Notice published by your office, you have included a graphics attachment that contains, among other things, the following map of the "Project Areas":



Figure 1: St John Marina Parcel Map

You will note that four of the subject parcels, on the northernmost part of the shoreline, are labeled "Parcel 10-17", "Parcel 10-18", "Parcel 10-19" and "Parcel 10-41". The development of these four parcels is controlled under a fifty (50) year lease assigned to Brion Morrisette and Robert O'Connor. Mr. Morrisette was (and still is) a member of the St John CZM Committee responsible for reviewing the Summers End Group CZM permit application.

The following excerpt from the lease agreement for parcels 10-17 and 10-18 (full document attached as Appendix A hereto) should suffice to make the point that Mr. Morrisette was intimately involved as a leaseholder in this project:

#### SHORT FORM LEASE

THIS INDENTURE, made and entered into by and between EGLAH MARSH CLENDINEN and MINERVA MARSH VASQUEZ, TRUSTEES of the MARSH SISTERS TRUST, (hereinafter also referred to as "Landlord"); and of Robert O'Connor, Jr. and J. Brion Morrisette, P. O. Box 368, St. John, USVI 00831, (hereinafter referred to as "Tetaent" or "Marina Asset Partners" or "MAP").

## WITNESSETH:

That this Short Form Lease confirms that the Landlord has leased and let to the Tenant under the terms and conditions set forth more completely in the Lease between the parties dated July 30, 2012, the following described premises including all improvements thereon, if any, in their "AS IS" condition, including all of Landlord's riparian and other rights to use the shoreline and waters and submerged lands seaward of Parcels 10-17 and 10-18, and (hereinafter referred to as the "premises," "the leased premises" or "the leased property" for a period of fifty (50) years, commencing on July 30, 2012 and ending on July 30, 2062:

All of Landlord's right, title and interest in the real property more particularly described as:

Parcels 10-17 and 10-18 Estate Carolina, St. John, U.S. Virgin Islands as shown on the drawing set forth as Exhibit One, including the structures thereon, all lease in "as is condition", hereto attached and incorporated by reference.

Figure 2: Lease Agreement with Brion Morrisette, member St John CZM Committee

- 4. When the Summers End Group permit application was submitted to VIDPNR in April 2014, St John CZM Committee member Brion Morrisette should have immediately recused himself from any and all proceedings of the CZM committee on this matter, and if he did not, then the CZM Chairman or head of DPNR should have removed him, as required under VI code. If Mr. Morrisette had recused himself in April 2014 then there would have been more than ample time for the Governor to appoint a replacement CZM Committee member in order to maintain a minimum 3-member quorum on the committee.
- 5. Brion Morrisette did not, however, publicly recuse himself from this matter until a few weeks before the CZM Public Hearing, on August 20, 2014. At that point it was claimed that there was "insufficient time" for the Governor to appoint a replacement CZM committee member to ensure that a quorum would be available to review the SEG application. Mr. Morrisette's failure

to recuse himself on a timely basis, as soon as the application was submitted to DPNR, caused this situation to transpire.

- The St John CZM Committee convened a Public Hearing on the SEG application on August 20, 2014, with Mr. Morrisette present. This meeting was held on illegal procedure since Mr. Morrisette should not have been present due to his clear conflict of interest.
- 7. The St John CZM Committee convened a "Decision Meeting" on the SEG application on October 1, 2014, again with Mr. Morrisette present. Again, this meeting was held on illegal procedure by involving a member with a clear conflict of interest. In fact, during the October 1, 2014 St John CZM Committee meeting, Mr. Morrisette acknowledged his ownership of the lease interests in the subject marina development properties, and stated that he would not participate in the vote.
- 8. The VICZM Rules and Regulations define an "Action" of the CZM Committee in the following language (VICZMA Rules and Regulations, Section 902.2(b) Definitions): ""Action" means a vote by a quorum of Committee members upon a motion, proposal, resolution or order..."

At the October 1, 2014 St John CZM Committee meeting, the "decision vote" was 2-0 in favor of the permits, and was a vote of just two CZM committee members. This is clearly not a "vote by a quorum of Committee members" and hence is not an "Action" under the Rules and Regulations. Furthermore, contrary to Parliamentary Procedure and Roberts Rules of Order, the Chairman of the committee, Mr. Andrew Penn, made the motion to approve. The rules of order should have precluded the standing Chairman from making or seconding a motion.

- 9. Therefore, the document signed by the Chairman of the St John CZM Committee, entitled "MAJOR COASTAL ZONE MANAGEMENT PERMIT NO. CZJ-04-14(W)" is not a legal Action of the CZM committee, has not been approved as required for VIDPNR CZM permits involving construction on submerged lands, and cannot be construed to evidence Coastal Zone Consistency as required by the USACE rules and regulations.
- 10. Additionally, this "permit" has been legally appealed by two separate entities: the Virgin Islands Conservation Society, and the Emmaus Moravian Church, citing a vast number of defects in the application, defects in the review procedures (including the conflicts discussed herein), defects in the Environmental Assessment Report, and defects in the economic analysis, among other things. According to VI Code, the operation of any DPNR permit is stayed while an appeal is pending.
- 11. In addition to the serious matters of procedure discussed above, I would like to draw your attention to the question of whether or not this application is, in fact, consistent with the Goals, Policies and Standards of the Virgin Islands Coastal Zone Management Act. Since the CZM determination that the Corps is relying upon has been made through an illegal procedure, it

would seem prudent for the Corps to make its own assessment of the likelihood that this application will ever be legally deemed to be consistent with the local CZM act.

I am basing the following comments on my personal experience of having served for ten years on a Coastal Zone Management board in the Village of Head-of-the-Harbor on Long Island, New York. In that capacity I personally reviewed hundreds of development applications for coastal consistency, including numerous docks and two marina projects.

I reviewed the Summers End Group application and related documents and summarized my findings in a 33 page report to the St John CZM Committee. In that report I analyzed all of the Goals, Policies and Standards of the local CZM act. I also analyzed the environmental impacts reported by the applicant and the proposed mitigations. That analysis concluded that the application was grossly inconsistent with the goals and policies of the VICZM Act, and provided no meaningful mitigation for the extensive impacts to benthic habitat. I concluded that the application did not meet the minimum requirements for receiving a VI CZM permit.

Attached hereto, as Appendix B, is the document that I submitted to the St John CZM Committee detailing those findings. It has been updated since that meeting with new information.

12. For the reasons enumerated above, it is my belief and opinion that the Summers End Group has not supplied any credible evidence that their project has been determined to be consistent with the goals, policies and standards of the Virgin Islands Coastal Zone Management Act. The USACE Public Notice states: "COASTAL ZONE MANAGEMENT CONSISTENCY: In the Virgin Islands, the Department of Planning and Natural Resources permit constitutes compliance with the Coastal Zone Management Plan." Since no DPNR permit has been issued for this project (the permit requires approval by the Governor and ratification by the Legislature in order to become effective) there is no demonstration of compliance with the Coastal Zone Management Plan.

# SECTION 2: Cumulative Impacts on Water Quality

The public notice for this project lists the factors to be considered by the Corps in considering a permit, and includes cumulative impacts, using the following language: "All factors which may be relevant to the proposal will be considered including cumulative impacts thereof ..." I would like to point out some significant concerns relating to the cumulative impacts of this project, particularly the cumulative impact on the water quality of Coral Bay harbor.

It is well known by local and federal agencies that Coral Bay harbor has been impacted by sediment runoff from upland development for many years. The plumes of sediment that are transported into the harbor after heavy rainfalls are well documented<sup>1</sup>. For example, here is a photograph of such runoff entering the harbor on November 7, 2014 following a typical heavy rainfall. This location is almost precisely where the proposed Summers End Group marina would be located:



Figure 3: Storm Water Entering Coral Bay Harbor

And here is an overall view of Coral Bay harbor on that same date, showing multiple sediment plumes in the inner harbor area:

<sup>&</sup>lt;sup>1</sup> The Coral Bay Community Council has undertaken several projects, with federal grant assistance, to reduce the sediment entering the harbor.



Figure 4: View of Coral Bay Harbor During Storm Event

Again, for context, the bright red roof building at the lower center of the picture is on the property proposed for the SEG marina and is the approximate location of the main pier of the proposed marina. The large sediment plume just offshore of this location is entirely within the footprint of the marina.

As bad as this runoff sediment appears, take a look at that exact same body of water just two days following the storm (this photograph was taken on November 9, 2014):



Figure 5: Coral Bay Harbor 48 Hours Following Storm Event

The vast majority of the sediment, at least the visible sediment, has settled out of the water column in a period of roughly 48 hours. Sunlight is now able to penetrate the water and the temporary impact of the sediment reducing the sunlight reaching the sea grass has been largely abated. Although there would undoubtedly still be increased turbidity, particularly in some of the deeper water with longer settling times, the most significant impact has passed in the span of 48 hours.

The construction of the SEG marina will take place over a period of years. The driving of 1,333 steel pilings and dock construction will take a minimum of 12 months (according to the applicant). Other people with experience in this type of construction have offered conservative estimates of 24 months. Continuously, throughout this period there will be significant amounts of silt suspended in the water column as a result of pile driving, barge movement, propeller wash, and related activities on the sea bed. The applicant has supplied no meaningful data, whatsoever, on the means by which sediment released during construction will be managed. Simply mentioning "turbidity screens" without describing their design, use, efficacy, management, or impact on marine life is insufficient. The extended periods of turbidity resulting from construction on a seabed with significant amounts of trapped silt, will almost certainly result in the death of large areas of sea grass due to sunlight depravation.

The extent of the piling field - encompassing approximately 17 acres - and the large number of individual pilings - 1,333 pilings 15" in diameter - would clearly be disruptive to any seabed. However on a sea floor that has been impacted with deposition of fine silt and clays, held in place by sea grass roots, the disruptive impact of this construction is magnified. The two renderings below each show a small portion of the overall structure and are each constructed precisely to the scale and dimensions defined on the applicant's drawings, helping to illustrate the magnitude of the piling project.



Figure 6: View Above Water, facing North-West



Figure 7: Marina Pilings, Partial View of Main Pier, Underwater

Following construction, the operation of the marina, involving the movement of large motor yachts, navigation in shallow water, berthing in the slips and fuel barge deliveries, will cause an ongoing suspension of silt from the sediments on the seabed. The loss of many acres of sea grass due to shading impacts will further result in the release of sediments currently trapped in the root systems of this vegetation, causing a cascading effect on adjacent areas.

The **cumulative impact** of this silt suspension, which lasts for years or potentially as long as the marina is in operation, will quite likely be fatal to the vast majority of the sea grass in the 28 acres of the marina site. As demonstrated through the photographs, the natural transport of sediments into Coral Bay harbor by rain runoff, while severe for short periods, corrects itself within a matter of days. However if these sediments are continuously re-suspended through marina construction and operation, the cumulative impact will likely spell the death of these vital marine meadows.

This **cumulative impact** is highly significant, given the known recent history of Coral Bay harbor. It is widely documented that development in the watershed, along the hillsides, has resulted in significant quantities of silt being transported into Coral Bay. Several scientists have studied core samples documenting this impact stemming from late 20th century development. Even in a pristine harbor, construction of a marina of the scale proposed by the Summers End Group would undoubtedly create concerns relating to turbidity and sediment suspension, however in a harbor which has already been significantly impacted with increased sediment load, the cumulative impact of this construction would be extreme.

The work which has taken place under the management of the Coral Bay Community Council, largely through federal funding, to abate sediment transport into the harbor has been significant, and is showing definite improvements in water quality. The Summers End Group project would undermine and reverse all of that work.

# SECTION 3: Esthetic, Historic and Visual Impacts

Two of the factors enumerated in the public notice list of "factors ... which will be considered" are esthetics and historical properties. In this section I will restrict my comments to observations relating to the esthetics of the proposal and its relationship with historical viewsheds in the project area.

As a point of historical comparison, the painting reproduced below was made in 1833 and was copied from the archives of the St John Historical Society. It is an overview of Coral Bay harbor, from a vantage point in the vicinity of the Emmaus Moravian church, looking towards the south. The most notable man-made features are sailboats, large and small, in the harbor, isolated buildings along the coastline, and a few dirt roadways along the shore and up the hillsides.



Figure 8: Coral Bay - 1833 Painting

Now if we compare and contrast the 1833 painting with a modern photograph, taken from a very similar vantage point, the similar usage patterns and human impacts on the natural environment are quite clear. The harbor is still populated primarily with sail boats, although the modern sailboats are mostly for recreational use, not commerce. Where there once were dirt roads, these same roadways are still in use albeit mostly paved in the past fifty years. There are more buildings on the hillsides, but the overall density is still quite low, and many open spaces remain.



Figure 9: Coral Bay - 2014 (c) Steve Simonsen

The photograph below is taken recently from a different vantage point, on the western shore of Coral Bay harbor at an elevation of approximately 200' facing northeast. This photograph encompasses the portion of the harbor that will be occupied by the proposed marina. Once again, the most prominent aspects of man's impact on the environment are the low density construction on some hillsides and the shoreline, and the dominant use of the harbor for small sailboats, typically 25'-40' in length.



Figure 10: Coral Bay Harbor - 2015 - View to NE

Using Figure 3 as a base, we have constructed an accurate rendering of the marina proposed by the Summers End Group, using information and data supplied in the Army Corps Public Notice and in documents supplied by the applicant. The following information was used to construct this rendering:

- 1. The graphics attachment to the Public Notice, particularly the dock construction details, the dock dimensions, and the dock physical location.
- 2. The "St John Marina, Market Study, Feasibility and Economic Analysis", prepared by Rick Barksdale, March 2014.
- 3. "Environmental Assessment Report for the Development of the St John Marina" submitted by the Summers End Group, April 2014.

The applicant's Environmental Assessment Report (EAR) states (page 6-41, Major Water EAR) that the slips will be occupied "on average 47% of the year." Based on experience with similar marinas in St Thomas (American Yacht Harbor, Yacht Haven Grande) it can be expected that the actual occupancy varies widely between high season and low season. In fact, between the months of May and November, inclusive (7 months), most Caribbean marinas are virtually empty. So, in order to reach a 47% average occupancy one would expect occupancy around 90% for five months, and around 15% for seven months - however in this rendering we chose to use a conservative slip occupancy of roughly 75%, less than the maximum.



Figure 11: Photorealistic Rendering of St John Marina at Average Occupancy

The impact on the historical viewshed of Coral Bay harbor is extreme. The harbor could no longer be used by sailboats under wind power, since tacking in or out of the harbor with the massive structure of the marina would be virtually impossible. From the shoreline the dominant feature of the entire inner harbor would be the Summers End Group marina.

Such a massive scale development (the project site limits for the marina encompass 28 acres) and such a dramatic increase in boat occupancy of the harbor (the marina is designed to accommodate 10,000 feet of boat) create an esthetic impact of monumental proportions.

Today, the sole fixed structure in Coral Bay harbor is the historic dinghy dock at the north end of the harbor, measuring less than 500 square feet in area. The fixed dock structures of the Summers End Group marina, according to their application, cover 248,292 square feet (5.7 acres). The current boat occupancy of Coral Bay harbor is approximately 4,000 feet of boat (115 boats of 35' average length). The Summers End Group marina is designed to accommodate an additional 10,000' of boat, an increase of 250%.

Although the upland aspects of the Summers End Group project are not explicitly within the scope of the public notice, it is clear from the statements of the applicant that the marina is dependent upon the upland development for (a) infrastructure support (sewage pumpout, fuel, fresh water, electricity), (b) marina personnel offices, (c) economic support for the overall project, (d) parking for marina customers, and (e) a private yacht club for yacht owners. As such, it is self-evident that the construction of the marina will not occur unless the upland project is constructed at the same time.

The impact on the shoreline from the upland project is extensive. The photograph below (Figure 4), taken in 2015, shows the precise location of the marina parcels as described in the public notice. It is clear that the area is primarily used for mixed residential and low impact commercial.



Figure 12: Marina Upland Parcels - current use

Figure 13: Marina Upland Parcels - proposed use

Superimposed on this photograph are the upland developments proposed by the Summers End Group in this area (Figure 5). Their projects include two three-story buildings on the shoreline, a two story building across the road, extensive parking, and removal of an existing restaurant.

It should be immediately clear that this scale of development entirely transforms the esthetics of the area, from a low-density West Indian style into a high density urban style. Most of the area of the upland parcels is either covered with structures, or paved with impermeable parking. It is not in any way stylistically, architecturally, or historically consistent with the existing uses of the area.

The architectural renderings provided by the applicant fail to depict the proposed development in an accurate context and the Public Notice fails to accurately depict the full extent of the proposed development. Here are a few of the most obvious defects:

1. The graphics attachment to the USACE Public Notice is an incomplete and incorrect view of the project - the notice included the Phase I marina upland construction, not the entire project encompassed in the permit application. Here is the rendering from the Public Notice:



2. The correct rendering, taken from the applicant's EAR, is shown below:



Figure 14: Phase II Rendering of The St John Marina - Landside View

3. Both renderings attempt to disguise the full impact of the project. For example, the marina is virtually empty (less than 20% of the slips are filled). The parking areas appear to have around 12 vehicles out of the 120 parking spaces provided (10% capacity). The water is shown serenely calm, with paddle boarders in an area that is totally unsuited for paddle boarding due to wind, waves, boat traffic and lack of safe entry and exit areas.

4. For some reason the applicant has completely failed to show the designated mooring areas that are a major component of the USACE application. This gives a false illusion of open water where in fact, none will exist.

The images below are accurate scale model renderings, based on Google Earth photographic imagery, of the marina and associated upland structures, which more accurately illustrate the extent to which the marina and upland structures fill the inner harbor and impact the land.





The esthetic impacts of this project are profound - it fundamentally changes the vista over Coral Bay harbor, it fundamentally changes the architectural patterns of the shoreline, it obliterates historic viewsheds, and it destroys the unique character of Coral Bay cherished by residents and visitors alike. Literally thousands of letters have made this point - this marina would result in changes that destroy the value of Coral Bay as a quiet, natural harbor, loved by all.

# SECTION 4: Sea Grass Impacts and Mitigation

The public notice and EAR provide limited information on the direct and indirect impacts to benthic habitat, specifically to sea grass within and adjacent to the project site. The little information that is provided is not supported by data, analysis, or even correct arithmetic. In these comments I will endeavor to provide a reasonable and fully justified analysis of probable impacts to sea grass, and an analysis of the mitigation measures described by the applicant to offset those impacts.

# Information provided by the applicant - Direct Impact to Sea Grass

The Environmental Assessment Report (EAR) states that the installation of 1,333 pilings will directly impact 2,500 sq ft of sea grass, which is the area directly within the footprint of the pilings.

The Public Notice (PN) states that the fixed marina structures (docks, walkways, main pier) will cover "1.42 acres of which 181 sq. ft. (0.004 acres ) would be over areas with seagrass and coral rubble, 1,567 sq. ft. (0.0 13 acres) over area of sparse seagrass, 41,546.37 sq. ft. (0.95 acres) over areas with 30%-100% seagrass coverage, 27,072 sq. ft. (0.62 acres)".

The applicant's EAR states that the fixed marina structures will occupy "1.42 acres, of which 181 ft2 will be over areas with seagrass and coral rubble, 1,567 ft2 over area of sparse seagrass, 41,546.37 ft2 over areas with 30%-100% seagrass coverage, 27,072 ft2 over areas with 5-30% seagrass and algae coverage and 4,717 ft2 over areas with 5% seagrass/algae coverage."

Neither of these statements make arithmetic sense. The numbers in the PN add up to 1.59 acres (not 1.42). However one of the conversions in the PN is incorrect: 1,567 sq ft is 0.036 acres, not 0.013 acres. So the correct sum for the PN should be 1.62 acres.

The numbers in the EAR add up to 1.72 acres (not 1.42).

I shall assume that the individual acreage (sq ft) figures provided by the applicant are correct, and that the actual area that the fixed marina structures occupy is therefore 1.72 acres.

# It is therefore reasonable to assume that the indirect impact to sea grass caused by the shading of fixed marina structures is 1.72 acres.

## **Indirect Impacts Due to Boat Shading**

The applicant states that the marina will accommodate 10,000 linear feet of boat (see USACE Drawing 03). The applicant also states that the boats in the marina will shade 5.7 acres at maximum occupancy. The applicant provides no explanation for this figure. Is this the shading at high noon with the sun approximately overhead? Or is it the average shading in the course of the day as the sun traverses the sky and shadows are elongated ? Does it take into account the fact that many of the mega yachts are berthed in a north-south direction, which would have the effect of maximizing their shadows anytime the sun isn't overhead?

I believe the 5.7 acres MAY have been computed using an average beam (width) of 25' which is probably fairly accurate (typical 100' yachts have a 25' beam, longer yachts are wider, shorter are narrower). Using 10,000 feet of length and 25' of width yields a boat "footprint" of 5.7 acres.

Without further data it is impossible to ascertain whether this is a minimum shade pattern (i.e. with the sun overhead), or an average shade pattern during the course of the day.

For lack of better information, I will assume this is the average shading during the course of the sun's transit in a day, so the shading at peak occupancy would be 5.7 acres.

The applicant next makes the following statement: "The slips will be occupied on average 47% of the year. As seagrasses are reported to be impacted after approximately two weeks of shading, this will result in some loss of seagrass with in the marina due to vessel shading. This will probably manifest itself as a loss of density as well as denuding of some areas, especially around larger permanently moored boats (if any). It is estimated that as much as 2 acres of seagrass may be lost."

The PN makes a different statement. It reads "The proposed project impacts to seagrass colonized marine bottom would be associated with 1,333 piles (12 -17 inch diameter) occupying 2,500 square feet (sq. ft.), dock structures totaling 1.42 acres, boat shading estimated in 5.7 acres and temporary construction impacts approximately up to additional 2 acres."

The fact that slips will be occupied on average 47% of the time has no relevance to shading impacts. It is well known that successful marinas in the Caribbean are occupied at maximum capacity for around 5 months out of the year, and at very low capacity for around 7 months out of the year. This gives rise to the 47% average occupancy. However, since sea grass vitality is impacted after just 2 weeks of shading, the five months of high occupancy will impact virtually all of the sea grass within the shade of the boats (which is a minimum of 5.7 acres). The applicant's statement that "as much as 2 acres of seagrass may be lost" is made with no explanation, no justification, and is apparently totally incorrect based on the applicant's own data.

It is therefore reasonable to conclude, as stated in the PN, that the indirect impact to sea grass due to boat shading will be a minimum of 5.7 acres.

# **Construction Impacts**

The applicant has not supplied any information to estimate the impact from construction on sea grasses (other than the 2500 sq ft of direct impact). The PN states that there will be "up to additional 2 acres" from construction impact, but with no explanation how this figure was derived.

The EAR makes the following statement about construction impacts: "The project also has the potential of impacting SAV within the approximate 8 acres project area due to temporary shading by construction vessels and potential direct construction impact. The direct construction impact will be related to barge movements and spuds and will be minimized through monitoring and delineating spudding and anchoring areas. Barge shading will be mitigated through the periodic relocation of barges to prevent shading impacts. The surrounding SAV could also be impacted by construction related turbidity impacts.

This will be abated by sediment and siltation control through detailed planning, training and stringent monitoring."

This statement is puzzling on multiple counts. First, the project area is 28 acres, not 8 acres. The "Site Limits" described on the USACE drawing encloses 28 acres.

Second, the sole explanation for how construction related turbidity will be abated is through "detailed planning, training and stringent monitoring." None of these approaches - planning, training, or monitoring - actually abates turbidity. Turbidity is created through pile driving, barge spudding, barge movement, propeller wash, debris falling in the water, and all of the effects very well known to anyone in the marine construction trades. Elsewhere the applicant mentions "floating turbidity screens" without any details on the type, design, efficacy, or suitability of these devices for the conditions of Coral Bay harbor.

Without technical information on the turbidity screens, it is impossible to assess whether they will be effective in the conditions proposed for their use in the Summers End Group marina. The seabed of Coral Bay harbor has been subjected to silt deposition for centuries, since the agricultural era, and this siltation has accelerated in modern times. Although measures have been taken to abate the surface water transport of upland silt, there is a considerable amount trapped in the roots of sea grasses on the floor of Coral Bay harbor. It is to be expected that any attempt to drive pilings into this environment will release larger amounts of silt than is typical in marina construction. Therefore there is considerable doubt whether abatement devices, such as turbidity screens, will be effective in Coral Bay harbor.

The figure below shows (a) an aerial view of Coral Bay harbor, (b) the 28 acre "Site Limits" in pink, (c) the actual marina structures in white, and (d) the primary area that would be utilized by construction barges, in green:



Figure 15: Construction Impact Limits

Assuming that construction barges stay as close as practicable to the actual marina structure, and make efforts to keep their maneuvering within the green limits, then a conservative estimate of construction impacts would be the acreage of the green area, which is 16.7 acres.

## Total Acreage of Sea Grass Impacted by Construction

Based on the foregoing analysis, it is reasonable to estimate that approximately 17 acres of sea grass will be impacted due to turbidity, shading, and pile driving during the 1-2 year marina construction period. Given the rapid die-off of sea grass in response to reduced sunlight (2 weeks shading will adversely impact turtle grass), it is probable that the construction of the marina will impair or destroy the aquatic function of 17 acres of sea grass meadows.

## **Mooring Field Sea Grass Impacts**

The PN and applicant have provided a partial map of benthic habitat, including sea grass density, covering a portion of the 28 acre project site. That map is reproduced below:



Figure 16: Benthic Habitat Mapping

A slightly more legible map of sea grass density is reproduced below, including the site limits of the marina (in red), the dock footprint (in white), and the site limits of the mooring field (in purple). All locations and dimensions are based on the USACE Permit Drawings supplied by the applicant.



Figure 17: Benthic Habitat with Marina and Mooring Areas Identified

Several important observations can be made from this overlay. First, the applicant has failed to identify the benthic habitat (sea grass density) outside of the limited marina footprint. There are large portions of the site (including the turning basin in the northeast corner of the site by the fuel dock) that have not been mapped, and based on the general pattern of sea grass, these areas probably include large acreage of dense sea grass, particularly in the northeast corner of the site limits.

Second, none of the proposed mooring field areas (outlined in purple) have been mapped for benthic habitat. There is no information on the density of sea grasses, the possible presence of endangered coral species, or any other information required to ascertain the probability of environmental impacts to benthic habitat within these areas.

The decommissioning of existing moorings, and the installation of the new mooring fields, have not been described in any document available for review. There is no information to assess whether the installation of the new moorings will be disruptive to the existing benthic habitat. There is no information to assess whether removal of the legacy moorings will be disruptive to habitat. In short, the applicant has supplied no data, no description of methods, no estimate of impacts, and no description of mitigations relating to any aspect of the mooring fields.

The applicant has not supplied benthic mapping of sea grasses throughout the marina footprint. Without this information it is clearly not prudent to rely on the applicant's claims that construction impacts will be abated through "detailed planning, training and stringent monitoring", since there is no information on what is living on the sea bottom throughout the construction site on which the applicant could base such "detailed planning". As a consequence of the foregoing discussion, it is impossible to know whether the construction of the mooring field will result in impacts to aquatic habitat, since the construction methods and the habitat in the area of construction have not been identified.

# **Compensatory Mitigation of Adverse Impacts to Sea Grass Habitat**

The statement made in the Public Notice regarding compensatory mitigation is reproduced below in its entirety:

"The project would serve to manage mooring in the bay through a public private partnership with DPNR and will be installing proper moorings throughout the bay. By cleaning up the improper moorings and debris, the project would facilitate the recolonization of the SAV. The project includes transplanting of seagrass from piling footprints into impacted areas of the bay, the project includes drainage improvements in the surrounding watershed to abate sediment impacts to water quality. The project would provide sewage pump out services and waste disposal facilities to the boating community. The marina will have signage throughout the facility educating boaters of practices to project marine resources. The marina would contribute funds on an ongoing basis to research to avoid seaturtle vessel strikes."

The applicant has made the following statement regarding the impact on sea grasses from the existing boats in Coral Bay harbor (excerpt from Benthic Mitigation Plan): "There are currently 115 boats anchored or moored within the bay and these conservatively impact an area of between 34,500 and 46,000 sq. ft. based on their anchor drag and rope swing impacts. Many of these have both an aft and bow anchor increasing this impact."

In fact, the single piece of evidence to support the claim of impact from existing moorings seems at odds with the applicant's own statements. Three photographs (all lacking dates, lacking coordinates, and lacking linear scale) were provided to support the claim of seagrass scouring from moorings. The photograph labeled "common footprint" is shown below (from Benthic Mitigation Plan, Section VII):



Figure 18: "Common Footprint" Mooring Scar

Although no ruler is provided to estimate the size of the bare patch, the blades of Thalasia provide a reasonable measuring aide. Thalasia blades are typically around one foot in length. Using this as a yardstick, the patch depicted in the photograph appears to be roughly ten feet in diameter (ten blades). This is equivalent to an area of less than 100 square feet. The applicant, however has made the following unsubstantiated claim: "There are currently 115 boats anchored or moored within the bay and these conservatively impact an area of between 34,500 and 46,000 sq. ft. based on their anchor drag and rope swing impacts." The figures 34,500 and 46,000 apparently are based on average impacts of 300 square feet ( $300 \times 115 = 34500$ ) and 400 square feet ( $400 \times 115 = 46000$ ) per boat. As the prior analysis indicates, the photograph supplied by the applicant demonstrates a "typical" scouring area of less than 100 square feet, which is 1/3 to 1/4 of what the applicant claims.

Given that at least half of the 115 boats currently moored in the harbor are on DPNR registered, inspected and approved moorings, utilizing essentially the same technology as Summer's End proposes for the managed mooring field (helical anchors and floating lines), it is surprising that they can claim such mooring practices typically scour 300-400 square feet when installed by a boater, but negligible impact when installed by Summer's End.

A reasonable estimate of the area of denuded sea grass resulting from the mooring of 115 boats in Coral Bay harbor is a maximum of 100x115 = 11,500 sq ft, assuming every single boat had a mooring scar of the size depicted by the applicant. It is highly likely that less than half have such a scar. This is equivalent to 0.26 acres of seabed that could be recolonized if all boats were move off of their existing moorings.

## There is no Basis for the Claim of Protection of 16 Acres of SAV

The Public Notice provides no quantitative data on the extent of compensatory mitigation provided by the applicant to offset the approximately 17 acres of sea grass that will be adversely impacted, and most likely killed, during construction of the marina. However the applicant has made the following statement in their Benthic Mitigation Plan document:

"The applicant is entering into an agreement with DPNR and will take over the management of the mooring field in cooperation with DPNR and over the next several years will organize the mooring field and replace all the anchors and moorings with properly installed moorings which will have negligible impact on the seafloor. The applicant will also be providing pump out facilities and waste receptacles which will significantly reduce the indirect impacts of these vessels. This will result in the protection of approximately 16 acres SAV and allow for the recolonization of approximately 1 acre of seagrass by removal of the inappropriate anchors."

Protection or preservation of habitat is only applicable in compensatory mitigation under limited conditions. According to DA regulations, "Preservation means the removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources."

In general, in order for protection of habitat to be considered as compensatory mitigation the habitat must be under imminent threat of destruction ("preventing the decline of aquatic resources by an action in or near those resources"). There is no evidence whatsoever that there is 16 acres of SAV (as referenced by the applicant) which is under any imminent threats of destruction or decline. In fact, the applicant's own document indicates that the sea grass in Coral Bay harbor is healthy and has high regenerative potential. The EAR states "Surveys were done within the area in over a 5-year period and over that time the density of the seagrass in the nearshore has increased somewhat. While there are new vessel scars, old vessel scars have healed and seagrass has recolonized."

Without any information on the location of the "16 acres of SAV" that the applicant believes will be protected through construction of the mooring field, and without any information on the imminent threat to this SAV, there is no way this claimed compensatory mitigation can be accepted by the USACE.

Furthermore, by the applicant's own language, the implementation of the mooring field will be "over the next several years" with no further information on the timing. Whereas the death of the sea grasses resulting from construction is immediate, the proposed compensation may come over some ill-defined future period.

For all of the above reasons, it should be clear that the applicant has offered virtually no compensatory mitigation for the loss of aquatic function from a minimum of 17 acres of sea grass meadows.

# Section 5: Marina Piling Design - Physical and Functional Impacts

The applicant has supplied basic information about the size, spacing and number of pilings required for their marina design. From this information alone it is difficult to envision the impacts which such a large number (1,333) of pilings will have, particularly on water movement and marine life. For this reason, we developed an accurate, scale model rendering of the proposed piling design and have used the model to draw some qualitative conclusions about the probable impacts on water quality and marine habitat.

As input to the model we used the following documents and data supplied by the Summers End Group directly, and through the Army Corps public notice:

- 1. "USACE Permit Drawings" depicting the dock dimensions, orientation, slip sizes, etc.
- 2. "USACE Permit Drawings" defining the piling diameters, piling spacing, and dock construction.

Using a scale model rendering tool (Google Sketchup) the piling features were modeled accurately to scale and placement. The resulting model contains approximately 1000 pilings, which is 30% less than the number identified by the applicant (1,333). The difference is due to the uniform spacing of 20' which was used in the model, versus the more realistic spacing which would often be less than 20' due to variable pier lengths.

Figure 17, below is an overview of the entire marina structure with all dock pilings and mooring piles located. The marina docks cover 75,029 square feet, or 1.71 acres, which is consistent with the applicant's data. This is an aerial view facing roughly north east.



Figure 19: Aerial view of piling and dock placement

Figure 18, below, is the same structure viewed in aerial perspective from the southeast direction, which is the dominant direction of incoming tidal and windblown currents (facing the open ocean). This would be the marina view from an altitude of roughly 1000' above sea level.



Figure 20: Aerial view from South-East direction

The next two images are all from the same South-East direction, at progressively lower altitudes, with the final image at sea level.





From the South-East direction at an elevation of approximately 10' above sea level the view is as shown below in Figure 20.





And finally, the rendering below is taken at dock height, roughly 4' above sea level. It should be selfevident that the density of the pilings is so great that there is virtually no unimpeded path through the marina structure that would not collide with at least one piling.



Figure 23: Marina SE View - Dock Heigt

From other directions, the density of pilings is even greater, since the central pier is supported on 15" pilings spaced 4' apart on the width and 20' apart on the length. This presents a dense network of pilings jutting out 900' into the harbor, as illustrated below:



Figure 24: Marina Pilings - View from East of Central Pier



A closer view of the central marina structures, from dock level is shown below.

Figure 25: Marina Pilings - View from East - Looking at Central Pier

Again, it is important to note that this is an accurate, scale model rendering based on the data supplied by the applicant - the piling diameters are 15", the beams and docks are drawn to scale. All pilings are illustrated to a constant depth of 10' below the water surface, for a total length of 14' (since the dock is 4' above the water surface in this region of the marina.

In order to more clearly illustrate the density of pilings, the following image is roughly the same orientation and height as the previous, but the pilings have been colored in red for emphasis. It should be apparent that there is virtually not a single straight line through the piling complex unimpeded by pilings.



Figure 26: Marina Pilings with Color Emphasis - View from East

Even the most unobstructed path through the piling field - viewed perpendicular to the main pier from the north, illustrates the density of this piling structure. The rendering below (Figure 25) is parallel to the North Zone finger piers and perpendicular to the main pier.



#### Figure 27: from North-West Perpendicular to Main Pier

The impact that construction and installation of this piling field will have on the healthy sea grass meadows within the site has been discussed elsewhere in these comments. This construction activity will directly and indirectly impact approximately 17 acres of sea grass due to piling installation, construction impacts (barge spuds, turbidity), shading impacts, and ongoing turbidity from propeller wash and toxic effluents.

Additionally, the renderings provided above should make it thoroughly apparent that the density of piling structures over so large an expanse of Coral Bay harbor will certainly impede water movement and impair the aquatic function of the area.

## Additional Considerations - Effect of Prevailing Winds and Water Movement

The density of the marina pilings over such an extensive area, extending over half the distance across Coral Bay harbor, will certainly have impacts on the aquatic function and water quality of Coral Bay harbor. Consider the illustration below, which is an aerial photograph of Coral Bay, with a large red arrow showing the dominant direction of windblown surface currents. The smaller boats in the photograph confirm the accurate direction of this arrow.



Figure 28: Direction of Open Fetch and Dominant Wave Direction

As a consequence of this frequent wind direction there is a well documented surface flow of water from the open sea in the direction of the proposed marina. This past year (2014) large amounts of sargassum seaweed were seen to arrive in Coral Bay harbor in rafts and streamers extending in the southeast direction. Most of that sargassum ended up in the mangroves to the northwest of the proposed marina.

A surface water study was conducted in Coral Bay habor, in 2007, by TetraTech, under contract to EPA Region 2 (http://www.epa.gov/waters/tmdldocs/39251\_STH\_TMDL\_Appendix\_A.pdf). Among other findings, this study observed surface water movement through dye injection. An illustration from that report further confirms the statements made above about surface water movement in the southeast to northwest direction. Here is the illustration of the dye cloud from that report:





When this image is overlaid on the aerial image of the proposed marina, the impact of the piling field becomes self-evident: it is directly in the path of surface water currents, and will clearly interfere with the limited water exchange that occurs in this partially enclosed harbor. Figure 28, below, illustrates this point.



Figure 30: EPA Dye Dispersion Study Overlaid on Marina Site Plan

In conclusion, the location of the proposed marina, directly in line with incoming winds and surface currents, the density of the piling field, and the area of the proposed marina, all point to the extreme likelihood of serious impacts to aquatic function if this marina were to be constructed.

In addition to the foregoing, I respectfully request a thorough public hearing on all of the matters discussed herein. Additional materials, such as high resolution photographs and video renderings, that are impossible to include in a written submission, are critical for a complete understanding of the impacts of this proposal. A public hearing would provide an opportunity for such materials to be shared with the applicant and the US Army Corps of Engineers.

Sincerely yours,

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David Silverman 9901 Emmaus Coral Bay, St John, VI 00830

ATTACHMENTS (2)

#### **APPENDIX A: LEASE AGREEMENTS**

#### SHORT FORM LEASE

THIS INDENTURE, made and entered into by and between EGLAH MARSH CLENDINEN and MINERVA MARSH VASQUEZ, TRUSTEES of the MARSH SISTERS TRUST, (hereinafter also referred to as "Landlord"); and of Robert O'Connor, Jr. and J. Brion Morrisette, P. O. Box 368, St. John, USVI 00831, (hereinafter referred to as "Tenant" or "Marina Asset Partners" or "MAP").

#### WITNESSETH:

That this Short Form Lease confirms that the Landlord has leased and let to the Tenant under the terms and conditions set forth more completely in the Lease between the parties dated July 30, 2012, the following described premises including all improvements thereon, if any, in their "AS IS" condition, including all of Landlord's riparian and other rights to use the shoreline and waters and submerged lands seaward of Parcels 10-17 and 10-18, and (hereinafter referred to as the "premises," "the leased premises" or "the leased property" for a period of fifty (50) years, commencing on July 30, 2012 and ending on July 30, 2062:

All of Landlord's right, title and interest in the real property more particularly described as:

Parcels 10-17 and 10-18 Estate Carolina, St. John, U.S. Virgin Islands as shown on the drawing set forth as Exhibit One, including the structures thereon, all lease in "as is condition", hereto attached and incorporated by reference.

subject to those Leases and Agreements entered into by Landlord

and

Tenant shall at its expense make such alterations, additions or improvements to the leased premises as Tenant in its sole discretion determines feasible. Tenant must obtain the necessary permits from the appropriate authorities for whatever improvements are made to the leased premises by Tenant. Landlord agrees to assist as reasonably required to obtain all such permits including any CZM or building permits.

WITNESSES:

LANDLORD: THE MARSH SISTERS TRUST

By TRUSTEE

Dated:

WITNESSES :

Ladd

Robert O'Connor, Jr.

Dated: 3/21/14

By: X Meneror 1

TRUSTEE

MINERVA MARSH VAS

Dated: 3/8/14

J. Brion Morrisette

Dated

#### SHORT FORM LEASE

THIS INDENTURE, made and entered into by and CALVERT MARSH, INC., (hereinafter also referred to as "Landlord"); and of Robert O'Connor, Jr. and J. Brion Morrisette, P. O. Box 368, St. John, USVI 00831, (hereinafter referred to as "Tenant" or "Marina Asset Partners" or "MAP").

## WITNESSETH:

That this Short Form Lease confirms that the Landlord has leased and let to the Tenant under the terms and conditions set forth more completely in the Lease between the parties dated July 30, 2012, the following described premises including all improvements thereon, if any, in their "AS IS" condition, including all of Landlord's riparian and other rights to use the shoreline and waters and submerged lands seaward of Parcels 10-19 and Remainder 10-41, and (hereinafter referred to as the "premises," "the leased premises" or "the leased property" for a period of fifty (50) years, commencing on July 30, 2012 and ending on July 30, 2062:

All of Landlord's right, title and interest in the real property more particularly described as:

Parcels 10-19 and Remainder 10-41 Estate Carolina, St. John, U.S. Virgin Islands as shown on the drawing set forth as Exhibit One, including the structures thereon, all lease in "as is condition", hereto attached and incorporated by reference.

subject to those Leases and Agreements entered into by Landlord

and

#### **APPENDIX B - COASTAL ZONE CONSISTENCY ANALYSIS**

The table below lists each of the Goals and Policies of the Virgin Islands Coastal Zone Management Act (VICZMA) together with an analysis of the relevant elements of the Summers End Group plan for the St John Marina, and a conclusion as to whether the plan is consistent, not consistent, or the policy is not applicable to the proposed development.

## **CONSISTENCY WITH VICZMA SECTION 903 GOALS**

CZMA Goal	Commentary	Consistency
<b>CZMA Goal</b> (1) protect, maintain, preserve and, where feasible, enhance and restore, the overall quality of the environment in the coastal zone, the natural and man-made resources therein, and the scenic and historic resources of the coastal zone for the benefit of residents of and visitors of the United States Virgin Islands;	<b>Commentary</b> The applicant proposes to build an extensive marina complex situated above lush marine meadows and within critical habitat of federally protected endangered species (corals and marine turtles). This activity cannot be construed to be protecting, maintaining, preserving, enhancing or restoring the quality of the natural environment in the coastal zone, since, by the applicant's own statements, "seagrasses are impacted after approximately 2 weeks of shading (and) this will result in the loss of seagrass with in the marina due to vessel shading. This will probably be seen as loss of density as well as denuding of some areas especially around larger boats which are permanently moored." (Major Water EAR, Page 5-4) The goal also speaks of protecting the man-made, scenic and historical resources of the coastal zone. This proposed development will dramatically change the viewshed of Coral Bay Harbor, as clearly indicated in the renderings of the finished project prepared by the applicant. Such changes do not maintain or preserve scenic resources of the coastal zone.	NO
	The applicant may claim that this project will "enhance the overall quality of the environment" and specifically refer to the man-made resources therein. However "quality" is not an objectively defined term, and the vast majority of Coral Bay residents have said that this project will degrade, not enhance, the quality of the man-made environment.	
(2) promote economic development and growth	The applicant states that this project will result in significant economic benefits for	YES
in the coastal zone and consider the need for	the Coral Bay community and for the island of St John. If these projections prove to	
development of greater than territorial concern	be true then the application is consistent with this goal.	
by managing: (1) the impacts of human activity		

and (2) the use and development of renewable	Although possibly outside the scope of a coastal consistency review, I should note	
and nonrenewable resources so as to maintain	that the financial projections by the applicant, including the construction costs for	
and enhance the long-term productivity of the	the marina complex, put into question whether the project will be financially viable.	
coastal environment;		
(3) assure priority for coastal-dependent development over other development in the coastal zone by reserving areas suitable for commercial uses including hotels and related facilities, industrial uses including port and marine facilities, and recreation uses;	This application is not being proposed in an area which was reserved for coastal development and suitable for commercial use. The Virgin Islands Coastal Management Program and Final Environmental Impact Statement (VICMP) submitted by the USVI to NOAA in 1979 has the following guidance on Marine Meadows (Grass Beds): "Priority uses for marine meadows and algal plains are conservation (with limited fishing) and carefully monitored mariculture. Any uses in or adjacent to marine meadows and algal plains that create chronic, heavy turbidity or otherwise impede sunlight penetration, or cause perturbation, should be prohibited." (page 119) By the applicants own statements, we know that the proposed development will cause significant shading resulting in loss of multiple acres of sea grass	NO
	Furthermore, the "Coastal Land and Water Use Plan" which was adopted by reference in the 1978 CZMA, includes a map of St John that identifies precisely two places on St John "suitable for commercial uses including marine facilities". These two places are Enighed Pond and the Creek in Cruz Bay Harbor. Conversely, the western shore of Coral Bay Harbor north of Pen Point is identified on the same map as suitable for "Preservation" or "Conservation".	
	Finally, Table 7-1 of the VICMP identifies the characteristics of regions suitable for marina development as having the following traits: "developed shorelines and waters, sand bottoms". This site, with its sparsely developed shoreline and extensive marine meadows, is not suitable for marina development.	
(4) assure the orderly, balanced utilization and conservation of the resources of the coastal zone, taking into account the social and economic needs of the residents of the United States Virgin Islands;	The purpose of this goal is to balance utilization with conservation, in the best interests of the residents of the USVI. This project is proposed as a development with significant community involvement and local ownership. Assuming this is true, then the application would appear to be	NO
	at least partially consistent with this goal. The applicant has proffered a letter commitment for non-VI funding of \$35 million which does lead one to question	

	whether ownership will ultimately vest with the land owners, or with the debt holders, however the applicant is representing that the landowners and Virgin Island resident investors will benefit economically from the project. Notwithstanding the above, a large number of USVI residents in the Coral Bay area have produced statements that the project is not in their social or economic interests. It will likely harm villa rentals (at least in the short term) and small business owners (who may be displaced from their premises). So it would appear	
	that the economic benefits will accrue to a relatively small number of residents, whereas a large number of residents will not have their interests (either socially or economically) furthered by this proposed development.	
	A benefit which accrues to a small number of individuals, while much larger numbers of residents are harmed, and while the environment is severely harmed, does not appear to constitute "orderly, balanced utilization and conservation "	
(5) preserve, protect and maintain the trust lands and other submerged and filled lands of the United States Virgin Islands so as to promote the general welfare of the people of the United States Virgin Islands;	does not appear to constitute "orderly, balanced utilization and conservation." The proposed marina will occupy over half of the entire area of inner Coral Bay Harbor, all of which is trust lands of the United States Virgin Islands. By transferring such a large portion of Coral Bay into private control, this goal is clearly not achieved - the trust lands are not preserved and protected, and the project does not promote the general welfare. In fact, many long-term users of DPNR approved moorings will be displaced by this project, in favor of a privately owned and operated facility. Several experienced boaters in Coral Bay have expressed serious doubts that the existing boats, on DPNR approved moorings in Coral Bay, will be able to fit within the "mooring field" depicted by the applicant.	NO
	Furthermore, it does not appear as though the proposed "mooring field" is a formal part of the present application. There are no details on its construction, its environmental impacts, its usage policies, or any other information necessary to assess its feasibility. There is an expired "Letter of Intent" and the applicant claims mitigation of sea grass based on construction of this mooring field, but it does not appear to be part of the application. As such, the impact on existing users of Coral Bay Harbor cannot be quantified or assessed, and the application is clearly inconsistent with the goal promoting the preservation of the trust lands for the general welfare of the people of the USVI.	

(6) preserve what has been a tradition and protect what has become a right of the public by insuring that the public, individually and collectively, has and shall continue to have the right to use and enjoy the shorelines and to maximize public access to and along the shorelines consistent with constitutionally- protected rights of private property owners	The applicant claims they will provide public access to the shoreline, however the planting of mangroves on currently accessible shoreline together with the gated and controlled entry to the marina, will actually preclude shoreline access where it exists today.	NO
(7) promote and provide affordable and diverse public recreational opportunities in the coastal zone for all residents of the United States Virgin Islands through acquisition, development and restoration of areas consistent with sound resource conservation principles;	Not applicable - the current application is not for a public recreational facility.	N/A
(8) conserve ecologically significant resource areas for their contribution to marine productivity and value as wildlife habitats, and preserve the function and integrity of reefs, marine meadows, salt ponds, mangroves and other significant natural areas;	This development, by the applicants own estimates, will result in the destruction of at least 2.8 acres of pristine marine meadows. It is quite possible that if the marina is successful with high occupancy rates, then the loss of marine meadows could be as high as 8 acres, in some of the most lush and dense marine grass in St John. This clearly does not conserve ecologically significant resource areas. The total acreage of the marina is unclear from the applicant's documents. The ACE drawings delineate an area designated as the "Site Limits" which surrounds the entire marina structure. If one assumes that it is the entire Site Limits which the applicant is seeking to lease from the trust lands of the VI, then it is this entire area which becomes potentially subject to environmental degradation. The area within the Site Limits is approximately 30 acres, most of which is marine meadows. Turbidity from propeller wash, shading from large "mega yachts" and toxic compounds from boat bottoms will inevitably degrade most of the marine meadows within the 30 acre site limits.	NO
(9) maintain or increase coastal water quality through control of erosion, sedimentation,	Applicant states that surface water catchment will be adequate to reduce sediments entering Coral Bay Harbor. There is some concern that the engineered	YES
runoff, siltation and sewage discharge;	rainfall limits may be inadequate for this side of Bordeaux Mountain. The pump- out facility will reduce sewage discharge.	
(10) consolidate the existing regulatory controls	Not directly applicable.	N/A

applicable to uses of land and water in the		
coastal zone into a single unified process		
consistent with the provisions of this chapter,		
and coordinate therewith the various regulatory		
requirements of the United States Government;		
(11) promote public participation in decisions	The applicant claims to have consulted with many public groups, and CZM is	YES
affecting coastal planning conservation and	convening this public hearing, both of which are supportive of this goal.	
development.		

# CONSISTENCY WITH VICZMA SECTION 906 POLICIES

Policy	Commentary	Consistency
DEVELOPMENT POLICIES		
(1) to guide new development to the maximum	The western shore of Coral Bay Harbor in the vicinity of the proposed project is an	NO
extent feasible into locations with, contiguous	area of very low density commercial development - three restaurants, two bars,	
with, or in close proximity to existing developed	and one convenience store make up the primary commercial activity in the area. In	
sites and into areas with adequate public services	addition there are several small jewelry and handicraft stores, a pottery studio, a	
and to allow well-planned, self-sufficient	chiropractic office, an interior decorator and a computer repair service. All	
development in other suitable areas where it will	businesses are locally owned and operated. The seaward portion of the proposed	
have no significant adverse effects, individually or	development is on undeveloped underwater Trust Lands.	
cumulative, on coastal zone resources;		
	The landward portion of the project is largely on developed parcels, however the	
	density of the developed areas is far less than is planned in the present application.	
	The applicants agree that public services are inadequate and will need to be	
	enhanced (solid waste disposal, sewage treatment, police and public safety, potable	
	water). The intent of this policy is to guide development into areas which are	
	"ready to be developed" in the sense that the new project should be an extension	
	of what is already present and not be something fundamentally new and requiring	
	new public services. This project fails to meet the objective of the policy.	
	By locating a high density marina in a sparsely occupied portion of Coral Bay Harbor,	
	offshore from a sparsely developed residential and commercial neighborhood, this	
	policy is explicitly violated. A far lower density marina project might be deemed	

	consistent, however this project, with its extensive land-based parking and commercial development, and its 145 slip marina accommodating 10,000 linear feet of boat, is in blatant disregard for this development policy. There are currently 115 boats moored in Coral Bay, with an average boat length of around 30 feet, for a total of around 3500 linear feet of boat. The proposed marina places an additional 10 thousand (10,000) feet of boat into the harbor, an increase of 300%.	
	This proposed development cannot be deemed to be a "well-planned, self-sufficient	
	development where it will have no significant adverse effects on coastal zone	
	adverse effects on marine meadows, a critical coastal zone resource.	
(2) to give highest priority to water dependent uses, particularly in those areas suitable for commercial uses including resort hotels and related facilities, industrial uses including port and marine facilities, and recreation; to give secondary priority to those uses that are water- related or have special siting needs; and to discourage uses which are neither water- dependent, water-related nor have special siting needs in areas suitable for the highest and secondary priority uses;	The current proposal is clearly water dependent, in that it is a marina.	YES
(3) to assure that new or expanded public capital improvement projects will be designed to accommodate those needs generated by development or uses permitted consistent with the Coastal Land and Water Use Plan and provisions of this chapter;	Not applicable: this is not a public capital improvement project.	N/A
(4) to assure that all new subdivisions, in addition to the other requirements contained in this chapter and in the Virgin Islands Zoning and Subdivision Law, are physically suitable for the proposed sites and are designed and improved so as to avoid causing environmental damage or	Not applicable: this is not a subdivision.	N/A

problems of public health;		
(5) to encourage waterfront redevelopment and	This policy guides the Commission to encourage redevelopment in developed	NO
renewal in developed harbors in order to	harbors. Coral Bay is not a developed harbor, and the project does not improve	
preserve and improve physical and visual access	visual access to the waterfront from residential neighborhoods.	
to the waterfront from residential neighborhoods		
and commercial downtown areas;		
(6) to assure that development will be sited and	The near-shore area of the proposed marina consists of mangroves and open space.	NO
designed to protect views to and along the sea	The offshore area is largely seagrass meadows and public moorings which have	
and scenic coastal areas, to minimize the	been in place for at least 25 years. This project will dramatically alter the views to	
alteration of natural land forms, and to be	and along the sea. It will not be at all visually compatible with the character of the	
visually compatible with the character of	surrounding area.	
surrounding areas;		
	There are many historic structures which are currently within the viewshed from	
	the shoreline where the marina is proposed to be built: the Moravian Church, the	
	Customs House on Usher Cay, and the Battery at Fortsberg. It is likely that this	
	entire viewshed will be eliminated by virtue of placement of the marina, large	
	boats, and additional buildings in close proximity to the shoreline.	
(7) to encourage fishing and carefully monitor	Although this project will result in the removal of an informal local fish market, it	YES
mariculture and, to the maximum extent feasible,	proposes to replace it with a new local fish market. It is doubtful, however, that a	
to protect local fishing activities from	fish market will be able to be supplied by the limited catch available from local	
encroachment by non-related development;	fishermen.	
(8) to assure that dredging or filling of submerged	According to the definitions within the CZMA, "filling" includes the installation of	NO
lands is clearly in the public interest; and to	pilings on the sea floor: "Fill" means earth or any other substance or material,	
ensure that such proposals are consistent with	including pilings placed for the purposes of erecting structures thereon, placed in a	
specific marine environment policies contained in	submerged area. (12 V.I.C. § 902)	
this chapter. To these ends, the diking, filling or		
dredging of coastal waters, salt ponds, lagoons,	The SEG application, as specified, requires installation of 1,333 pilings to support	
marshes or estuaries may be permitted in	the fixed marina structures. According to the CZMA definition cited above, the	
accordance with other applicable provisions of	pilings constitute "fill" and their installation is "filling". Therefore CZMA	
this chapter only where there are no feasible, less	Development Policy (8) applies to this application. In particular, the clause which	
environmentally-damaging alternatives and,	states: "filling may be permitted only where there are no feasible, less	
where feasible, mitigation measures have been	environmentally-damaging alternatives" is applicable to the marina application.	
provided to minimize adverse environmental		
effects, and in any event shall be limited to the	The applicant has not performed a LEDPA (Least Environmentally Damaging	

following: (i) maintenance dredging required for existing navigational channels, vessel berthing and mooring areas; (ii) incidental public service purposes, including but not limited to the burying of cables and pipes, the inspection of piers and the maintenance of existing intake and out-fall lines; (iii) new or expanded port, oil, gas and water transportation, and coastal dependent industrial uses, including commercial fishing facilities, cruise ship facilities, and boating facilities and marinas; (iv) except as restricted by federal law, mineral extraction, including sand, provided that such extraction shall be prohibited in significant natural areas; and (v) restoration purposes;	Practicable Alternative) analysis as required by this policy. Without such an analysis, including the "No Action" alternative (i.e. not constructing a marina in this location), the LEDPA cannot be determined, and the filling cannot be permitted. Furthermore, the applicant's statement on page 6-16 of the "Major Water EAR" that "no dredging or fill is proposed" is clearly in error, given that the definition of "fill" in the CZMA (quoted above) includes pilings.	
(9) to the extent feasible, discourage further growth and development in flood-prone areas and assure that development in these areas is so designed as to minimize risks to life and property	The project is within an existing flood plain. In recent years there have been several extensive floods in the area, severe enough to alter the shoreline and impede access for several days. The area is known to take the brunt of tropical force weather, including storm surge and tidal and wave induced erosion. There is significant concern that a concentration of over 100 watercraft in this particular location would be disastrous in the event of a typical strong hurricane, resulting in significant loss to property and possible loss of life. If, in the event of a hurricane, multiple boats were to be beached on the shoreline and the roadway, then this could impede traffic and emergency services for the entire residential population south of the marina. Their only means of access to the rest of St John is to pass through the proposed marina complex. Note that New Buildings 8, 9, 10 and 11 on Site Plan Drawing C200 are all within the delineated FEMA 100 year flood plain.	NO
(10) to comply with all other applicable laws, rules, regulations, standards and criteria of public agencies.	To the best of my knowledge, the application is compliant with all other applicable laws and regulations.	YES
<u> </u>		

ENVIRONMENTAL POLICIES		
(1) to conserve significant natural areas for their contributions to marine productivity and value as habitats for endangered species and other wildlife;	By the applicants own estimates, the current proposal envisions loss of 2.8 acres of marine meadows, including sea grass beds which are habitat for endangered sea turtles. If the occupation levels at the marina reach 75%, as envisioned by the applicants' marketing plan, then the loss of sea grass from boat shading will amount to a minimum of 6.5 acres of some of the finest sea grass beds in the territory. The Site Limits for the marina encompass approximately 30 acres of submerged lands, the majority of which is marine meadows. Nowhere in the EAR is this total acreage mentioned, nor is the possibility that the entire acreage might be lost due to combination of turbidity, shading, and toxic chemical leaching from boat bottoms.	NO
(2) to protect complexes of marine resource systems of unique productivity, including reefs, marine meadows, salt ponds, mangroves and other natural systems, and assure that activities in or adjacent to such complexes are designed and carried out so as to minimize adverse effects on marine productivity, habitat value, storm buffering capabilities, and water quality of the entire complex;	The installation of 1333 pilings, and the shading created by 300,000 sq ft of piers and watercraft, will severely impact the existing marine meadow in the footprint of the proposed marina. Marine meadows are specifically called out for protection in this policy, as well as elsewhere in the Coastal Zone Management Plan approved by NOAA. Given the probable adverse impact to 3-7 acres of marine meadows and the compensatory mitigation of approximately 0.06 acre (2500 sq ft) this application cannot be deemed to "protect complexes of marine resource system including marine meadows". In fact it will lead to very significant loss of highly valuable habitat.	NO
(3) to consider use impacts on marine life and adjacent and related coastal environment;	As far as I can tell, the applicant has not considered the use impacts on the adjacent coastal environment. However, since the EAR does identify the marine life in the vicinity of the proposed development, and does identify some measures to mitigate potential threats to marine life, they can be deemed to be consistent with this policy which simply requires that the applicant "consider use impacts." It would have been preferable if the applicant had considered the use impacts on adjacent protected waters, including Hurricane Hole.	YES/NO

	Migratory whales are found just outside the project area (humpback whales) and pile driving is known to be harmful to the health of this species, as well as marine turtles. The applicant states (Major Water EAR, page 5-5) "esonification of the marine environment can have a negative impact on sea turtles.	
	and fish." To mitigate this impact, the applicant states "the marina will be primarily	
	constructed from the waterside using barge-mounted equipment to drive the dock	
	and mooring piles with a vibratory hammer, where possible" however there is NO	
	data supplied on the geological characteristics of the seabed where the 1333 pilings	
	are proposed to be installed. Without knowing the depth to bedrock it is impossible	
	to ascertain whether installation using a vibratory hammer is possible. If it is not	
	possible to install using vibratory hammer then the sonic impacts might result in	
	significant adverse impacts to these protected species.	
(4) to assure that siting criteria, performance	The Army Corps of Engineers Wetlands Research Program (WRP) has published	NO
standards, and activity regulations are stringently	guidelines for design of piers to minimize impacts on sea grass. See "WRP Technical	
enforced and upgraded to reflect advances in	Note VN-RS-3.1, June 1999, Design and Construction of Docks to Minimize Seagrass	
related technology and knowledge of adverse	Impacts" as one example of these siting criteria reflecting the latest empirical	
effects on marine productivity and public health;	research on the effects of shading on sea grasses.	
	This document provides the following guidance for dock design: Docks less than 2 m	
	wide, oriented within 10 deg of north-south, and at least 3 m above the bottom will	
	have the least impact to seagrasses. An additional 0.4 m in height should be added	
	for each additional meter increment in width. If the alignment is more than 10 deg	
	from north-south, the dock should be 0.2 m higher for each additional 10-deg	
	increment.	
	The drawings submitted for ACE approval do not conform to these guidelines, and	
	hence do not reflect the most current standards and criteria for marina	
	construction over sea grasses.	
(5) to assure that existing water quality standards	The applicant states that there will be no point source discharge activities resulting	YES
for all point source discharge activities are	from this project. This claim needs to be verified.	
stringently enforced and that the standards are		
continually upgraded to achieve the highest		
possible conformance with federally-		
promulgated water quality criteria;		

(6) to preserve and protect the environments of offshore islands and cave:	Not directly applicable.	N/A
(7) to accommodate offshore sand and gravel	Not applicable.	N/A
mining needs in areas and in ways that will not		
adversely affect marine resources and navigation.		
(8) to assure the dredging and disposal of	Not applicable. The applicant has not applied for a dredging permit.	N/A
dredged material will cause minimal adverse		
affects to marine and wildlife habitats and water		
circulation;		
(9) to assure that development in areas adjacent	The destruction of between 2.8 and 8.0 acres of marine meadows, which is habitat	NO
to environmentally-sensitive habitat areas,	for endangered sea turtles, is not consistent with this policy. The measures	
especially those of endangered species,	proposed to prevent vessel strikes with coral and endangered marine mammals and	
significant natural areas, and parks and	turtles is to post signage with guidelines for avoiding impacts with sensitive marine	
recreations areas, is sited and designed to	life. This does not constitute "assurance" that the development will "prevent	
prevent impacts which would significantly	impacts" and is inadequate to meet the standards of this policy.	
degrade such areas;		
(10) to assure all of the foregoing, development	The applicant has proposed a sediment and erosion control plan to be implemented	YES
must be designed so that adverse impacts on	during land-based construction, as well as storm water management during and	
marine productivity, habitat value, storm	after construction. Assuming these plans are implemented properly then the	
buffering capabilities and water quality are	development should meet this policy goal.	
minimized to the greatest feasible extent by		
careful integration of construction with the site.		
Significant erosion, sediment transport, land		
settlement or environmental degradation of the		
site shall be identified in the environmental		
assessment report prepared for or used in the		
review of the development, or described in any		
other study, report, test results or comparable		
documents		
(1) to protect and, where feasible or appropriate,	This proposed development does increase coastal recreational uses and facilities,	YES
enhance and increase public coastal recreational	albeit in a private context. It is unclear to me whether this policy is specifically	

uses, areas and facilities;	about public use, or simply about recreational use in general. I will assume the	
	latter, in which case the application is consistent with this policy.	
(2) to protect and enhance the characteristics of	The existing anchorage in Coral Bay is highly valued by the boating community as a	NO
those coastal areas which are most valued by the	protected anchorage. This proposal would not only eliminate the public anchorage	
public as amenities and which are scarce, or	sites in up to 30 acres of Coral Bay Harbor (see the "Site Limits" on the USACE	
would be significantly altered in character by	Permit Drawings) but it would also create significant navigational hazards due to	
development, or which would cause significant	the maneuvering of mega-yachts in and out of the dock facility. The risk to life and	
environmental degradation if developed;	property resulting from a collision between a mega-yacht and a small dinghy or	
	kayak is extreme.	
	Open coastlines with easy access from public roadways are fairly rare, and the	
	coastline adjacent to the roadway opposite Aquabistro is one of the few places	
	where tourists, hikers, and residents can sit at the water's edge and contemplate	
	the view without having to negotiate a trail or steep embankment. This amenity	
	will be lost entirely if the proposed marina is developed.	
(3) to preserve agricultural land uses in the	This application does not impact agricultural uses.	N/A
coastal zone by encouraging either maintenance		
of such present agricultural use or use as open-		
space areas;		
(4) to incorporate visual concern into the early	Although the applicant does express "visual concern" within their application	NO
stages of the planning and design of facilities	documents, their vision of a beautiful harbor is not consistent with the views of	
proposed by siting in the coastal zone and, to the	numerous long time residents of Coral Bay. Their project certainly does not	
extent feasible, maintain or expand visual access	"expand visual access to the coastline" and, in fact, their land-based construction	
to the coastline and coastal waters;	plans, particularly for Phase 2, will impede visual access to the water.	
	The shoreline at the precise location identified by the applicants for the landward	
	portion of the proposed marina is one of the very few areas on the western shore	
	of Coral Bay where a scenic vista of the entire harbor may be enjoyed. Views of	
	historic structures, such as Fortsberg (listed on the National Register of Historic	
	Places), the Emmaus Moravian Church (also listed on the National Register), and the	
	Customs House on Usher Cay are all possible from this location, and possibly	
	nowhere else easily accessible by tourists. The construction of the landward	
	portion of this project as proposed would destroy these scenic shoreline views	
	which are an amenity valued by the public.	
(5) to foster, protect, improve, and ensure	The applicant intends to plant a line of red mangroves on either side of the main	NO

optimum access to, and recreational opportunities at, the shoreline for all the people consistent with public rights, constitutionally- protected rights of private property owners, and the need to protect natural resources from overuse;	entrance to the marina pier. The shoreline in this area is currently open for public access, and is frequently accessed by users of dinghies and kayaks as a safe and convenient place to enter or leave the water, to access restaurants and grocery stores, and for general leisure use. The planting of the mangroves is justified by the applicant on the basis of erosion control, although it appears as though the existing rip-rap revetment is functioning adequately. The ACE Permit Drawing Sheet Number 03 depicts two lines of mangroves, one on either side of the main pier entrance. These total approximately 600 feet in length (300 feet on either side) and up to 25 feet in width. These plantings will have the effect of completely blocking access to the shoreline and the water beyond. It will, in effect, become a living fence along the coastline. This, combined with the locked access to the main pier, will make the entire shoreline inaccessible to the public, in express contradiction to this policy.	
(6) to ensure that development will not interfere with the public's right of access to the sea where acquired through customary use, legislative authorization or dedication, including without limitation the use of beaches to the landward extent of the shoreline;	There are approximately 50 boats on DPNR-approved moorings within the footprint of the proposed marina. Many of these boats have utilized the same mooring location for many years. Displacing almost half of the legally moored vessels in Coral Bay Harbor and relocating them into densely packed mooring fields with substantially less privacy and greater risk of collision with neighboring vessels is clearly not consistent with this CZMA goal. Additionally, the proposed "mooring field" does not have appropriately designed facilities to accommodate the vast majority of vessels currently utilizing Coral Bay Harbor. This plan effectively monopolizes the entire harbor to the benefit of one private group, and is clearly not consistent with the letter or the intent of this policy. Furthermore, as detailed elsewhere, there is considerable doubt as to the legality of a private developer constructing and managing a public mooring field; this responsibility is specifically assigned to DPNR under the VI Boating code.	NO
(7) to require, in the discretion of the appropriate Committee of the Commission, that public access from the nearest public roadway to the shoreline be dedicated in land subdivisions or in new development projects requiring a major coastal zone permit.	There does not appear to be public access to the shoreline, other than through the access controlled marina. The remainder of the shoreline is impeded for access by virtue of the proposed planting of new mangroves.	NO