Save Coral Bay, Inc.
9901 Emmaus
Coral Bay, St John, USVI 00830

Mr. José A. Cedeño-Maldonado
U.S. Army Corps of Engineers
Fund. Angel Ramos Annex Bldg., Suite 202
F.D. Roosevelt Ave. # 383
San Juan, Puerto Rico 00918

8 August 2016

cc: Mr. Sindulfo Castillo (USACE)
Mrs. Kelly Finch (USACE)

Re: **SAJ-1982-05019 (SP-JCM)**
**Sirius Marina, Coral Bay, St. John**

Dear Mr. Cedeño,

I am writing to you on behalf of Save Coral Bay Inc., a Virgin Islands nonprofit corporation. On July 12, 2016, I sent you a request under the Freedom of Information Act (FOIA) for any correspondence between the US Army Corps of Engineers and the permit applicant known as "T-Rex St John" or "Sirius Development Group" (collectively known as "T-Rex") relating to a proposed project in Coral Bay, St John, USVI. The permit application number is SAJ-1982-05019 (SP-JCM).

In your response to our FOIA request you included documents submitted to the Corps by agents of T-Rex. These documents included responses from T-Rex to a request for additional information from the Corps which had been sent to T-Rex by the Corps on March 8, 2016.

We have reviewed the responses of T-Rex and found that they raise new issues which had not been identified in the Public Notice for this project published by the Corps on December 10, 2015. We have discovered that, in certain respects, the marina project is now larger than the one previously described, including the sizes of vessels and number of fixed slips in the plan. We have also found that a great many of the responses submitted by T-Rex did not, in fact, respond to the issues and concerns raised by the Corps and by the public.

On the basis of our review, we respectfully request that either a new Public Notice, or a Public Hearing, be convened for the purpose of eliciting broader public response to the revised proposal from T-Rex.

The documents attached hereto provide our detailed comments on the responses of T-Rex to the Army Corps, federal agency, and public concerns. In order to provide context for the comments, the Save Coral Bay comments are provided directly following the responses of T-Rex and offset using a different font and style. We have restricted our comments solely to the new materials provided by T-Rex, and these comments add to, but do not in any way substitute for, the broader comments sent to the Corps by Save Coral Bay during the public comment period.

I have also provided these comments to the Coral Bay Community Council who may include some or all of them in their response.

Save Coral Bay, Inc.
9901 Emmaus
Coral Bay, St John, USVI 00830

If you would be so kind as to confirm receipt of these materials it would be much appreciated.

Respectfully submitted,

David Silverman
President, Save Coral Bay Inc., a Virgin Islands nonprofit corporation

*In order to provide context for our comments, we have inserted our comments directly following the responses provided by the applicant. The text of the Army Corps letter is in* ***Bold Italics****, the text of the applicant is in* blue Standard Font *and the comments by Save Coral Bay are in Simple Italics and offset between green solid lines.*

**William F. McComb, P.E.**
**P. O. Box 303408**
**25A Dronningens Gade**
**St. Thomas, U. S. Virgin Islands 00803**

**TELEPHONE: (340) 690-0308 Work/Cell**
**email:wfmccomb.eng@attglobal.net**
**(800) 859-8736 Fax**
**(340) 777-4044 Home**

July 11, 2016

Mr. Sindulfo Castillo
Chief, Antilles Section Regulatory Division
U.S. Army Corps of Engineers
Jacksonville District - Antilles Office
Fund. Angel Ramos Annex Bldg., Suite 202
383 F.D. Roosevelt Ave.
San Juan, PR 00918

Re: SAJ-1982-05019 (SP-JCM)
Sirius Marina, Coral Bay, St. John

Dear Mr. Castillo:

We are pleased to submit our responses to your March 8, 2016 letter requesting additional information in order that the Corps can complete its analysis of compliance of the Project with the Clean Water Act (CWA). Our responses are as follows.

***A. Project Scope, Description and Drawings – Your permit application was submitted requesting Corps authorization for the construction of a private commercial offshore marina with ancillary facilities in adjacent uplands at Coral Bay. However, various sections of the Environmental Assessment Report (EAR), including the Marina Market Analysis Report, submitted with the permit application make reference to a resort, which would be developed in association with the proposed marina. We request that you please clarify the scope of this proposed resort and its relationship with the proposed marina in terms of interdependency and economic viability. Specifically, please clarify whether the***

***proposed resort and marina are interdependent components of a single and complete project, or whether each component could have independent utility and economic viability on their own. Please be advised that portions of a multi-phase project that depend upon other phases of the project do not have independent utility. If the proposed marina and the other components of the resort do not have independent utility, it may be necessary to evaluate them as a single action for NEPA and Corps Regulatory purposes. In this regard, please clarify whether any components of the proposed resort development would require discharges of dredged or fill material into waters of the U.S. or the installation of structures or work in navigable waters of the U.S. Also, please clarify whether the proposed resort development would require impacts or alterations to an existing gut or ravine which traverses through Parcel 10A.***

The Marina is a stand-alone project and is financially viable. Utilities for the Marina is independent from any future Resort. The proposed Sirius Marina will not impede or restrict any future Resort which would be subject to NEPA and Corps Regulatory as applicable.

*The three sentence response by T-Rex does not address the issues raised by the Corps. It is non-responsive to the question whether the resort is dependent upon the marina. It is non-responsive to the question whether the proposed resort would require discharges of dredged or fill materials or installation of structures or work in navigable waters. It is non-responsive to the question whether the resort would require impacts or alterations to an existing gut on Parcel 10A.*

*In short, T-Rex has not responded to the questions raised by the Corps. The regulations are very clear about the need to include all reasonably related activities for which a DA permit is required in the same application (33 CFR 325.1(d)(2)): "All activities which the applicant plans to undertake which are reasonably related to the same project and for which a DA permit would be required should be included in the same permit application. District engineers should reject, as incomplete, any permit application which fails to comply with this requirement."*

*It is abundantly clear that the resort is a "reasonably related activity" based on many statements by the applicant, the titles to the USACE permit drawings ("Sirius Resort and Marina"), the EAR, and the other sources identified in our initial comments. It is also apparent, based on the applicants description of the resort project, that it may require a DA permit for alteration of an existing ghut and for discharge of reverse osmosis effluent, at a minimum. As such, the plans for the resort must be included in this permit application according to USACE regulations.*

*We continue to believe, based on numerous public statements by the principals of T-Rex St John and by their printed publications, that the marina is one component of a combined "Resort and Marina" project. In fact, when asked what would happen if the rezoning required for development of the resort hotel is not approved, the chief architect for T-Rex said in that case they would build a condominium development. They have never said to the community that the*

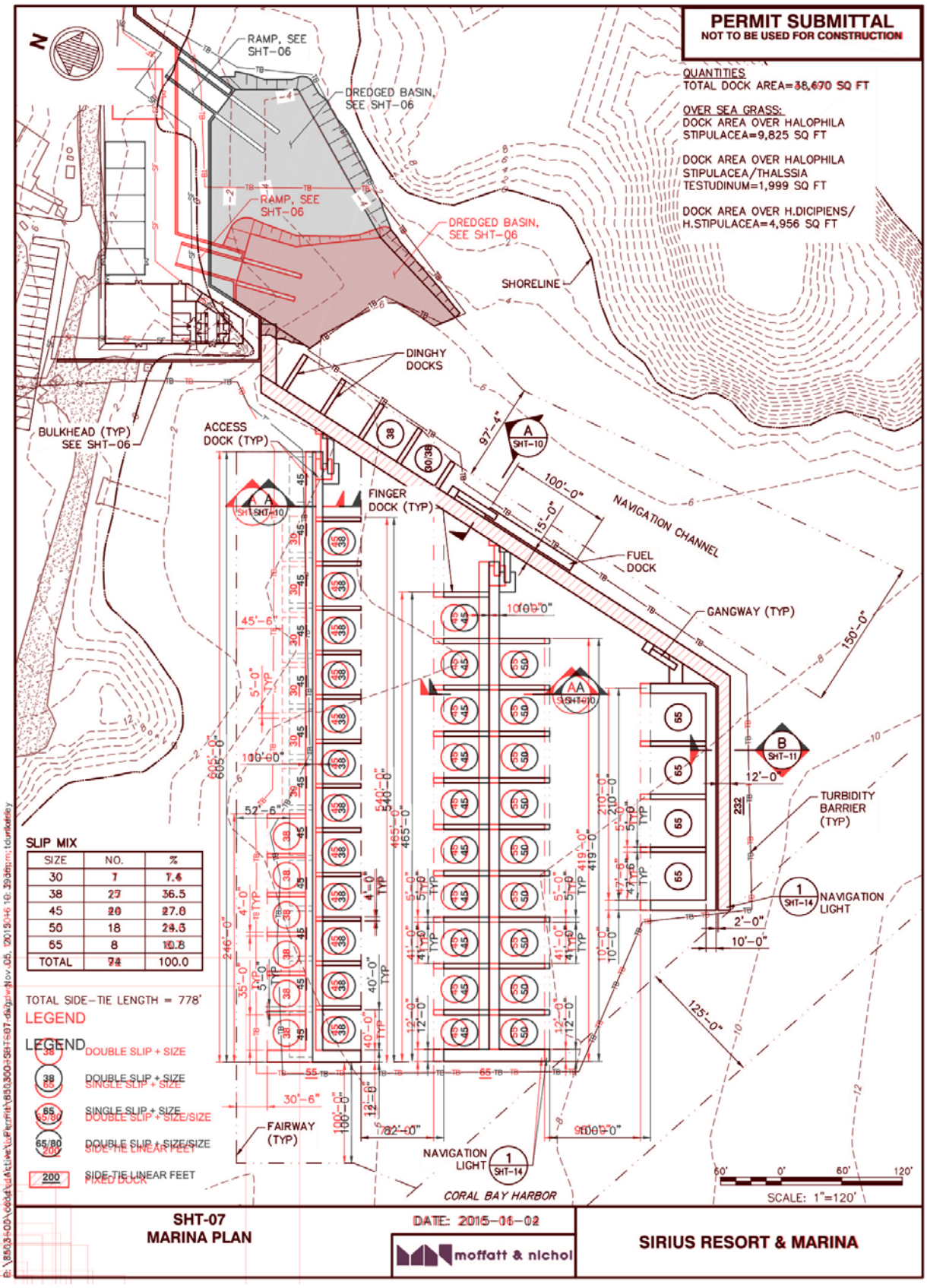
*marina would be built without a closely related residence facility on the adjacent lands. Attached hereto is the most recent document published by the developers depicting the combined Sirius Resort and Marina project (see Attachment 1) as well as the rezoning application by T-Rex St John (see Attachment 2).*

***In addition to the above, please note that many of the drawings included in your permit application and its attached EAR are somewhat inconsistent in terms of components of the proposed marina, particularly the size and details of the docks and slips. Although the information submitted was sufficient for PN purposes, consistent and more detailed drawings would be required to complete the evaluation of your permit application. Therefore, we request your submittal of revised drawings, accurately and consistently depicting the components and layout of the proposed marina. Please ensure that the revised drawings clearly illustrate which docks would be pile supported and which docks will be floating docks. Also, please clarify in the drawings whether reverse intake and outfall lines from the reverse osmosis or waste water treatment plant would be installed in waters of the U.S. as part of the proposed project. Furthermore, the drawings should clearly illustrate all project components, which would be installed or built in waters of the U.S. All drawings should depict the project components relative to the ordinary high water mark for non-tidal waters, and/or the mean high tide and highest high tide line for tidal waters.***

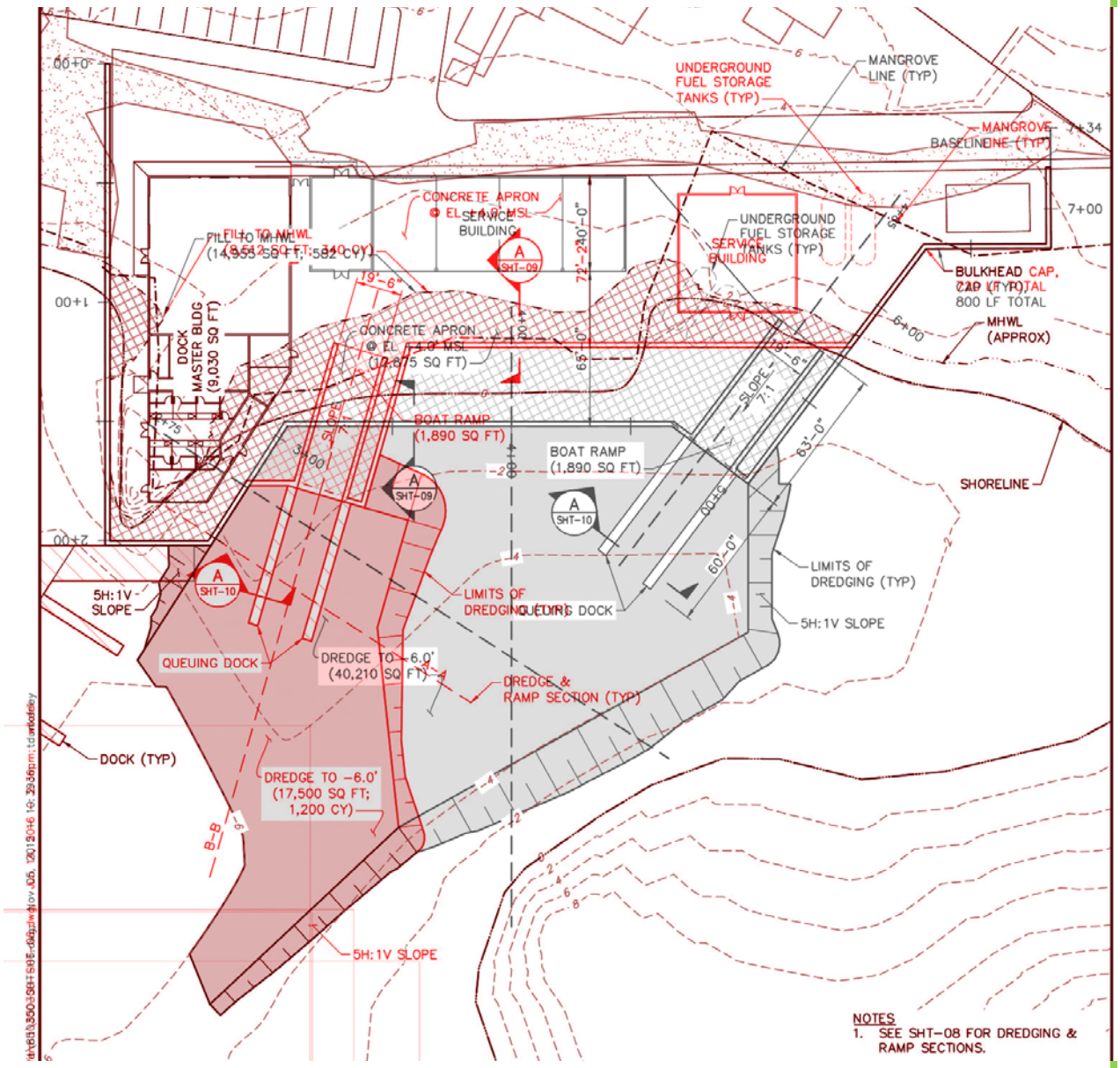
Attached are the revised ACE Permit Drawings which address the concerns above.

*The applicant has submitted revised ACE Permit Drawings but did not identify with specificity the changes that have been made in the design. In order to better understand the proposed changes we have overlaid the new drawings on the original drawings to highlight the changes. The first illustration is the overall marina plan (Sheet 7 in the drawings) with the original plan in black lines and the new plan in red lines.*

*The principal areas of change in the marina design are (1) in the dredge and fill plan, (2) in the configuration of the boat ramp and marina services area, and (3) a reconfiguration of portions of the in-water marina structures. These changes can all be seen in the illustration below (the red lines are changes from the prior drawings). Each of these changes is illustrated and discussed in greater detail in subsequent drawings.*


PERMIT SUBMITTAL
NOT TO BE USED FOR CONSTRUCTION
QUANTITIES
TOTAL DOCK AREA=38,670 SQ FT
OVER SEA GRASS:
DOCK AREA OVER HALOPHILA STIPULACEA=9,825 SQ FT
DOCK AREA OVER HALOPHILA STIPULACEA/THALSSIA TESTUDINUM=1,999 SQ FT
DOCK AREA OVER H.DICIPIENS/ H.STIPULACEA=4,956 SQ FT
RAMP, SEE SHT-06
DREDGED BASIN, SEE SHT-06
SHORELINE
DINGHY DOCKS
BULKHEAD (TYP) SEE SHT-06
ACCESS DOCK (TYP)
FINGER DOCK (TYP)
NAVIGATION CHANNEL
FUEL DOCK
GANGWAY (TYP)
TURBIDITY BARRIER (TYP)
NAVIGATION LIGHT
FAIRWAY (TYP)
CORAL BAY HARBOR
SLIP MIX
SIZE NO. %
30 7 7.4
38 27 36.5
45 20 27.0
50 18 24.5
55 8 10.8
TOTAL 74 100.0
TOTAL SIDE-TIE LENGTH = 778'
LEGEND
DOUBLE SLIP + SIZE
DOUBLE SLIP + SIZE SINGLE SLIP + SIZE
SINGLE SLIP + SIZE DOUBLE SLIP + SIZE/SIZE
DOUBLE SLIP + SIZE/SIZE SIDE-TIE LINEAR FEET
SIDE-TIE LINEAR FEET FIXED DOCK
SCALE: 1"=120'
SHT-07
MARINA PLAN
DATE: 2015-06-02
moffatt & nichol
SIRIUS RESORT & MARINA

*We now look at each of these changes in more detail. The next illustration is the dredge and marina services area. Again, the new plan is in red lines and the original plan in black lines.*




*The principal changes in the revised plan for the dredge area and marina services area appear to be the following:*

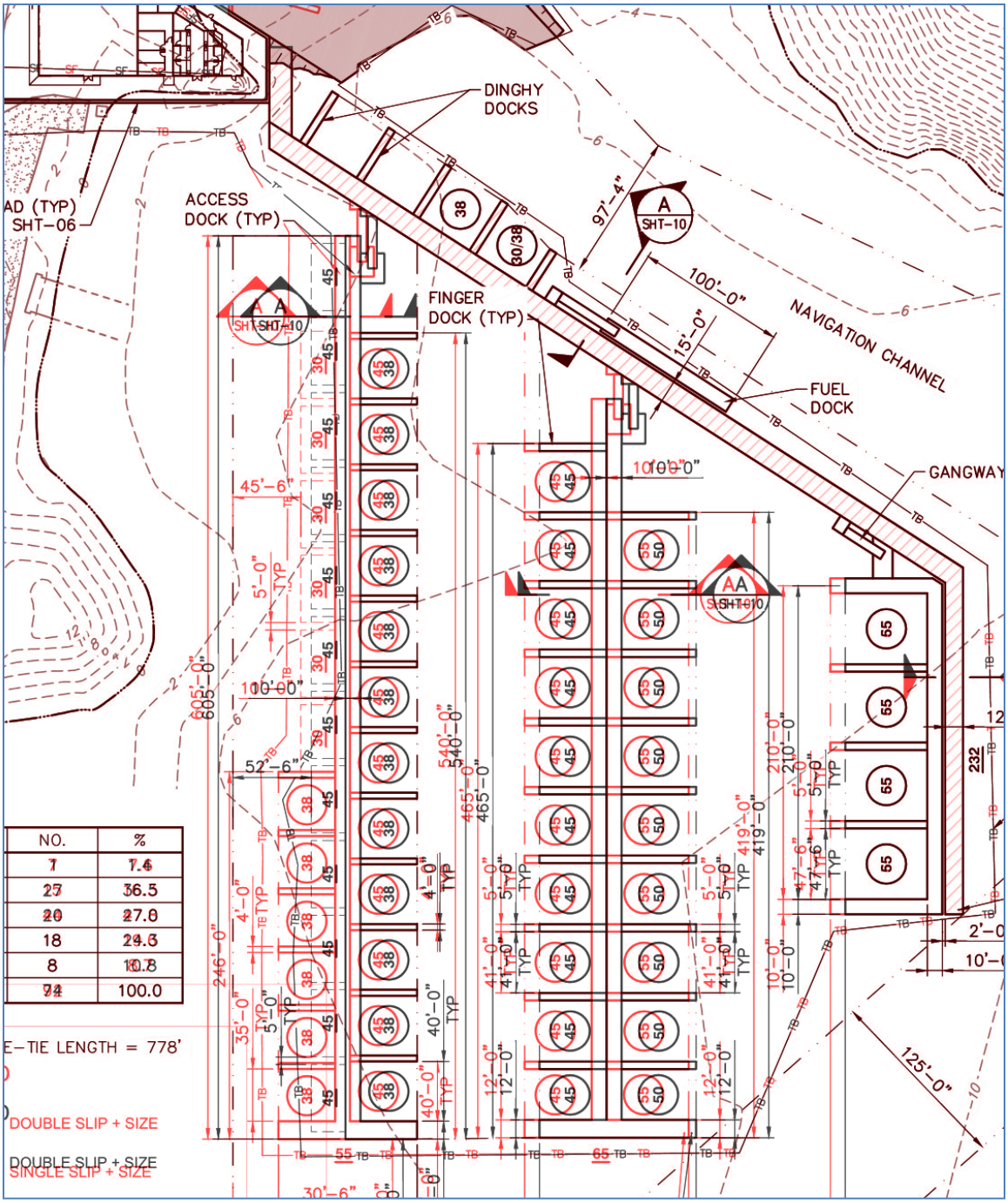
1. *A reduction in the area of the dredging (the red shaded area is the revised dredge area versus the red and grey area previously)*
2. *Relocation of the boat ramp to a location approximately 150 feet west of its prior location.*
3. *Reconfiguration of the southern portion (the in-water portion) of the bulkhead, but not the eastern or western portion.*

*4. Reconfiguration of the structures on the concrete apron.*

*We note that the applicant has marked the Mean High Tide Line (MHWL) but not the Highest High Tide Line as requested by the Corps.*

*We do not believe that the dredging and filling proposed in the revised plan, albeit less than the prior plan, is required to meet the basic and overall purpose of the project. We do not believe it is the Least Environmentally Damaging Practicable Alternative as required by Section 404 of the Clean Water Act. These comments are discussed in greater detail later in this document.*

*The next illustration is an enlargement of the portion of the overall marina plan focusing on the in-water marina structures. Again, the new design is in red and the prior design is in black.*




*This composite overlay drawing is difficult to decipher because of the dimension lines, but if one focuses solely on the actual marina structures – the access piers and the finger piers – the following design changes are apparent:*

1. *The finger piers on the most southerly access pier (on the right side of the drawing, since North points roughly to the upper left hand corner of this drawing) have been extended by 10' in order to accommodate larger boats. The original design had slips for 55' boats on this*

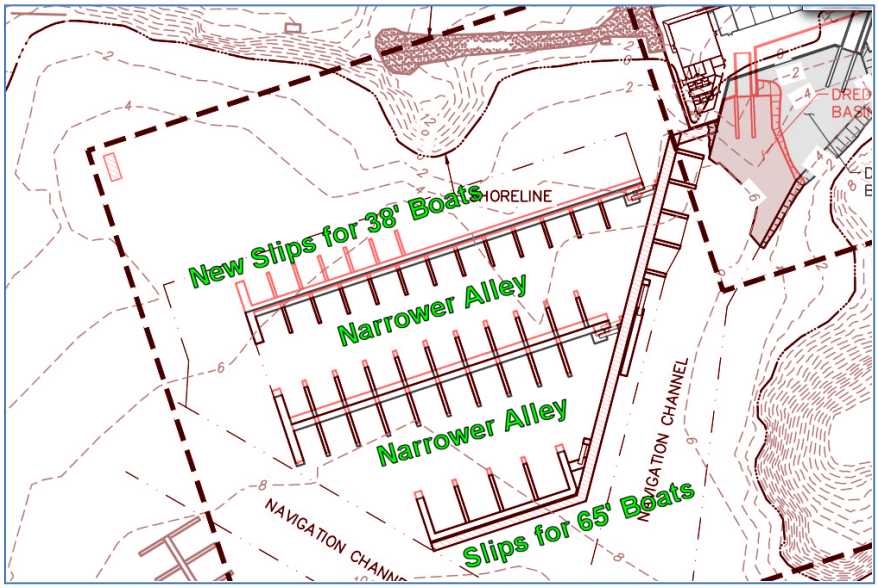
*pier and the new design has slips for 65' boats. This increase of 10' in slip size has shifted the remaining access piers and finger piers 10' towards the shoreline.*

2. *The two most northerly access piers (on the left side of the drawing,) have been shifted approximately 10 feet towards the shoreline, as mentioned above. This is due to a combination of longer finger piers for larger vessels, and narrower alleys between the piers, for a net shift of 10' towards the shoreline.*

3. *The most northerly access pier, the one closest to the shoreline, has been modified by addition of seven finger piers to accommodate double berths for 38' boats. The prior plan did not have any finger piers between the northernmost access pier and the shoreline, and the entire length of the pier was allocated for side-tied vessels.*

4. *The alley between the finger piers of the middle access pier and the northern access pier has been reduced 10 feet in width. It was 82' wide in the prior plan and has been reduced to 72' in the current plan. The alley between the finger piers of the most southern access pier and the middle access pier has been reduced by 5 feet in width, from 100' to 95' in the new design.*

*These changes are troubling for a number of reasons as discussed below. The illustration below may be helpful in visualizing some of the comments that follow.*




*First, the applicant has increased the overall size of the in-water marina by accommodating slips for 65' boats in the revised plan, whereas the original plan was limited to 55' boats. The total number of slips has increased from 74 slips in the original plan to 86 slips in the revised plan (not inclusive of side-ties). This increase of 16% in the number of slips results in increased impacts due to construction, pilings, and shading.*

*Second, while increasing the slip sizes, the applicant has reduced the navigational alleys between the slips, so larger boats must navigate narrower alleys. In fact, in the original plan all of the alleys were sufficiently wide for two boats, end-to-end, to fit in the alley (e.g. the previous 82' alley was between 45' slips and 38' slips, for a combined length of 83'). In the new design the alleys have become narrower while the slips have become longer (e.g. the new 72' alley is between two 45' slips for a combined length of 90').*

*Third, the northernmost finger piers in the new plan, pointing directly at the shoreline, are in water depths of 4' to 6' based on the bathymetrics provided by the applicant. These slips, which are designed for 38' boats, will require the vessels to navigate in water depths as shallow as 4 feet in order to enter and exit the slips, which are oriented with their entrances toward shallower water, so a bow-in entrance requires the deepest part of the vessel (the engine or propellers) to be in the shallowest water. A typical 38' motor boat has a draft of over 3', so this configuration will result in extreme propeller wash and possible groundings. The new slips in the shallowest portion of the marina footprint are almost certainly not feasible as designed.*

***Based on the fact that the applicant has increased, not decreased the size of the in-water marina, we respectfully request a public hearing on the modified design.***

*The revised drawings are still inconsistent and ambiguous regarding which portions of the dock structures are fixed and which are floating. For example, Sheet 7 indicates that the "Fixed Docks" are shaded with diagonal lines, which would be the main access pier from the shoreline only. All other docks are not shaded, and so presumably they are floating. However Sheet 7 indicates on the section callout for the first and second docks that the detail is "A Sht-10" and detail A on Sheet 10 shows a fixed dock on pilings. It is our assumption that all of the un-shaded docks are floating, and should reference the floating dock details on Sheet 12.*

There will be no Reverse Osmosis intake and outfall line into the water nor WWTP effluent discharged into Coral Bay.

Potable water will be supplied by wells drilled on Parcel 10C which is at the bottom of a major watershed and the brackish water processed thru an R/O system to produce the potable water needs for the Marina operation. A total of 4,000 gal/day is required for the Marina operation. The R/O effluent will be blended with the WWTP effluent and used for irrigation.

*The statements made about Reverse Osmosis intake and outfall are confusing and misleading. Parcel 10C is the parcel which is intended for the disposal of the dredge spoils. The center of Parcel 10C is approximately 1200 feet from the marina service area. If wells are proposed to be drilled on Parcel 10C, how will the water be delivered to the point of use at the marina? Are underground pipes proposed and if so where are they located? It appears as though pipes would need to traverse a public roadway and a ghut. The excavation and installation of these water pipes needs to be illustrated.*

*Furthermore, the drawings do not illustrate the location of the Reverse Osmosis facility (is it on Parcel 10C or at the marina, or elsewhere). There is no indication of a location for a potable water storage tank – is it on Parcel 10C or at the marina. There is no indication of how reliable power will be supplied for the Reverse Osmosis facility – if a backup electrical generator is proposed, its location should be indicated so the impact on sound levels and air quality from its operation can be assessed.*

*Although the applicant claims that the 4000 GPD required by the marina can be supplied by the brackish wells and R/O processing, there are no calculations to demonstrate the quantity and salinity of the R/O effluent. Lacking this, it is impossible to determine whether the proposal to dilute the effluent with the Waste Water Treatment Plant effluent for irrigation will be feasible. It is reasonable to assume that a significant portion of the 4000 GPD of potable water consumption will be used for boat washing and showering and will not end up in the Waste Water stream. This means that the quantity of waste water effluent may be significantly less than imagined, and insufficient to dilute the R/O brine to a point where it is suitable for direct application to vegetation for irrigation. What are the contingencies if the volume of Waste Water effluent is insufficient to dilute the R/O brine? The salinity level of the undiluted brine will render it unsuited for direct irrigation.*

*Finally, it is abundantly clear that the challenges in providing potable water to the marina will be significantly magnified when the needs of the adjoining Resort are considered. The resort, with 89 rooms, peak occupancy of around 200 persons, could consume as much as 20,000 GPD of potable water. It is virtually impossible to dispose of the effluent from the R/O process, mixed with the effluent from the WWTP, over the limited vegetation on the combined site. It is virtually certain that discharge into WOTUS will be required.*

*The new drawings add additional confusion to the understanding of exactly what is being proposed. The original Army Corps permit application states that the project consists of "a 92 slip marina, along with a Marina Building containing a Marina Office, retail and provision stores. There will also be a 30-boat dry stack building, concrete apron and boat ramp, parking, fuel storage, Wastewater Treatment Plant, and emergency generator." The new drawings provided by the applicant do not appear to show the following components:*

- *the 30-boat dry stack building,*
- *the Wastewater Treatment Plant,*
- *the parking area,*
- *the emergency generator,*
- *the Reverse Osmosis plant*
- *the potable water storage tank*

*In order to comment on the revised design we need to understand exactly what is being proposed, and where it is located. For example, operation of a backup generator can create air quality and noise impacts that would be detrimental to adjacent business establishments as well*

*as the bird rookery in the creek mangroves. The location and design of the parking facility can result in serious contamination of groundwater from the hydrocarbon leaks of the vehicles parked thereon. A mechanism for separating oil and other contaminants from a large parking area must be proposed and evaluated considering the proximity to the shoreline and mangroves. We also note that the underground fuel storage tanks are within 20' of the shoreline and will be placed below sea level. The structure which we believe may be the proposed WWTP (on the far eastern portion of the concrete apron), is approximately 160 feet from the Skinny Legs restaurant, and is ESE (east-southeast) from the restaurant. The prevailing winds are from the E-SE direction, so any offensive odors emanating from the STP will directly impinge upon the restaurant.*

***B. Project Location***

***1. Alternatives analysis - The documents submitted as part of your permit application did not include any information about alternatives sites considered for the location of the proposed project. In order to satisfy the requirements of NEPA and the 404(b)(1) Guidelines and properly determine whether the proposed project is the LEDPA, please submit an analysis describing alternative sites considered to locate the proposed project. This analysis must include a proper evaluation and balancing of the practicability of the different sites to meet the overall project purpose (as established in our PN) and their potential effects (benefits and detriments) on the public interest and the environment, particularly the aquatic ecosystem. As part of this alternatives analysis we request that you: (1) define a set of criteria for site evaluation; (2) define a system to rate a site against each of the criteria; (3) describe a method to comparatively weigh each rating as to its importance; and (4) prepare a report describing the search for the sites, identification of their location and rating, and a narrative which shows which site is the preferred alternative and whether it is the LEDPA.***

See page 4 for Matrix of Alternative Sites

*The "Matrix" and its accompanying text are not responsive to the requirements of a thorough Alternatives Analysis under Section 404(b)1 of the Clean Water Act and do not demonstrate that the applicant's preferred alternative is the LEDPA. Although criteria are enumerated, the "system to rate a site against each of the criteria" is not defined (only a number is given, not the methodology for determining that number), there is no description of a method to comparatively weigh each rating for importance, and there are no reports on the search for sites, identification of their ratings, or a narrative describing the conclusions.*

*Without this information, the applicant is simply providing conclusory statements to support their own preferred alternative. There is insufficient information to independently ascertain whether a sufficiently wide search was performed, and which site or alternative is the LEDPA.*

*It is also important to note that the applicant has completely failed to discuss on-site alternatives, e.g. reducing the scale of the marina, changing its orientation, use of moorings as*

*opposed to slips, and so forth. It is our opinion that an on-site alternative that completely avoids dredging and filling may, in fact, be the LEDPA.*

*The applicant also appears to have failed to discuss the "no action" alternative, which may, in fact, be the LEDPA. If a managed mooring area with an improved dock facility were used to address the Basic Purpose then this could possibly accomplished with only very minor (or possibly no) permitting, effectively a "no-action" alternative.*

***2. Federal investment in Coral Bay – As explained in the enclosed letters from EPA and the CBCC (see attached disk), significant investments have been made by EPA, NMFS and the US Department of Agriculture (USDA) to support the development and implementation of watershed level management plans and actions directed to reduce land-based sources of pollution and improve water quality, seagrasses and corals within Coral Bay. The CBCC has been involved for many years in the development and implementation of a Watershed Management Program for Coral Bay and has received various grants and awards from NMFS, EPA and the USDA in this regard. We request that you please include in your response to this letter an assessment and discussion regarding whether the proposed project would be compatible or in conflict with the goals, programs and investments supported by these Federal agencies and the CBCC to improve the Coral Bay watershed, water quality and aquatic resources.***

The CBCC has developed proposed mitigation measures and preliminary design features to reduce sediment from the Johnny Horn Gut. We have been in contact with the CBCC and will work with them in the final design of the proposed Johnny Horn Gut watershed improvements to reduce sediment runoff. We will work closely with the Moravian Church and adjacent landowners to define and obtain the necessary easements to provide the necessary check dams, sedimentation basins and emergency spillways. It is in our interest to improve the water quality in the Bay.

*The CBCC will provide a response to this. The fact that the applicant states above that they will be performing work on check dams, sedimentation basins and spillways further indicates that the scope of the project is greater than simply what is stated in the application and includes work on the existing ghut on Parcel 10A.*

*As we have previously commented, the area in which the applicant proposes to construct the marina is at the foot of the Johnny Horn ghut and has over the past few decades received considerable sediment transported by storm water in the ghut and down the roadway of Sea Grape Hill. This sediment is held on the seabed, in part, by the SAV and mangroves in the northeast part of the harbor and in the creek. We are very concerned about the cumulative impact which the proposed new development will have on the water quality of Coral Bay, considering the impacts from past upland developments and the resulting sedimentation. There is a considerable risk that the killing of up to five acres of sea grasses, dredging, and*

*construction of a large concrete apron will result in release of trapped sediments and as a consequence severe impacts to water quality. A marina in a location with a sandy bottom would not have to confront these types of problems.*

## Matrix of Alternative Sites

| Evaluation Criteria | Location | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Cruz Bay | Enighed Pond | South Side | North Shore | East End | Johnson 's Bay | Sander's Bay | Coral Harbor West | Coral Harbor East |
| Land Available | 1 | 2 | 1 | 1 | 2 | 2 | 2 | 5 | 5 |
| Exposure | 3 | 5 | 1 | 2 | 3 | 3 | 3 | 3 | |
| Zoning | 5 | 5 | 1 | 1 | 1 | 1 | 1 | 5 | 5 |
| Buildability | 4 | 5 | 2 | 2 | 2 | 1 | 1 | 5 | 5 |
| Environmental Concerns | 3 | 4 | 2 | 2 | 2 | 3 | 3 | 4 | 5 |
| Best Use | 5 | 5 | 1 | 1 | 1 | 2 | 2 | 4 | 5 |
| Location | 3 | 5 | 1 | 1 | 1 | 2 | 2 | 5 | 5 |
| Access | 5 | 5 | 1 | 1 | 2 | 2 | 2 | 5 | 5 |
| Community | 5 | 5 | 2 | 2 | 3 | 3 | 3 | 5 | 5 |
| Present Use | 5 | 5 | 1 | 1 | 1 | 2 | 2 | 3 | 5 |
| Total | 39 | 46 | 13 | 14 | 18 | 21 | 21 | 44 | 50 |

* Moravian Church Site

Land Available: Is there sufficient upland available for the support activities
Exposure: Is the site protected from wind and waves
Zoning: Is the upland zoned for Marina Use
Buildability: Is the shore and upland conducive to adequate construction methods
Environmental Concerns: The extent of environmental impact to construct the project. This considers present marine conditions and uses of the uplands
Best Use: Is the site the best use for a Marina. Is it compactable to surrounding uses?
Location: Is the site a viable location for a Marina
Access: Is there good access to the site by the near-by community
Community: Will the project provide services to the community
Present use: Is the project compatible with the existing uses.

Rating System: 1 to 5 points with 5 being most favorable

The top three site were: Enighed Pond; Coral Bay West Side and Coral Bay East Side. Enighed Pond is controlled by the VI Port Authority and is not available.
Coral Bay West property that is zoned for Marina use is under lease and not available. It has extensive seagrasses in front of the property.
Coral Bay East is property owned by the Moravian Church and was available for Marina development. The site presently is used for marine service, has a boat ramp and has a dingy dock for use by boats moored in Coral Bay. It has less extensive seagrasses and is conducive to a marina with limited layout and location.

*Our comments on this very rudimentary and inadequate analysis of alternatives were provided earlier in these document. We do not believe this short discussion meets any of the statutory requirements for an alternatives analysis under Section 404 of the Clean Water Act and is inadequate for identifying the Least Environmentally Damaging Practicable Alternative (the LEDPA).*

***3. Exposure to prevailing and storm winds and waves - The EAR submitted with the permit application describe that based on the orientation of Coral Harbor, the project site is well protected and has limited fetch. However, this conclusion was mostly based on general wave and wind information for the U.S. Virgin Islands, and no local data measured specifically for the project site was provided. On the other hand, the project drawings submitted illustrate that wave attenuators would be installed in some of the marina piers. In addition to the above, the Corps has received numerous communications from the public indicating that prevailing wind and wave patterns, as well as potential effects of storms and hurricanes, at the proposed project site could create unstable and unsafe conditions for boats, which could in turn affect the viability of the project.***

***The Corps understands that additional local data collection and analysis are necessary to adequately evaluate the potential effects of the prevailing and storm wind and wave conditions on the proposed docking marina. This information is necessary not only to evaluate the feasibility of the proposed project location and design, but also to prevent potential piecemealing in the evaluation of the project, if modifications in the project design or additional structures such as groins or wave breakers are determined to be necessary to protect the proposed marina structures and vessels from the effects of the waves and wind. Please provide these data and analysis in your response to this letter.***

A coastal engineering assessment at the project site was conducted to evaluate prevailing and storm wind, wave, and water level conditions at the site. This report is attached with this response. Wind speed measurements are based on collected data from a NOAA, FEMA, Global Hindcast Model, and CDMP. The prevailing wind direction is easterly, with winds approach from the east and southeast during the summer months (May through September). During the winter months, the wind direction may shift to the east northeast direction as cold fronts from the continental US bear down on the island. Prevailing wind speeds average less than 20 knots. Storm wind speeds are primarily

generated from hurricanes and tropical storms that pass north, south, or through the Island of St. Johns. These storm winds may approach Coral Bay from any direction depending on the storm track. An extremal analysis based on wind hindcast models that includes historic hurricanes and tropical storms was performed and is presented in the report. The 50- and 100-year return period wind speeds are 107 mph and 123 mph, respectively.

Water level measurements for Coral Bay are based on recorded tide measurements from a tide station at Lameshur Bay, St. John. The mean tide range is less than 0.72 feet with the diurnal range (which includes the average of spring and neap tides during the course of the year) is approximately 0.82 feet. Recorded tide measurements for mean and diurnal tide levels for Charlotte Amalie, St Thomas, USVI, and Road Town, Tortola, USVI are within 3 inches of the water levels measured at Lameshur Bay, confirming that tide amplitude and phase at Coral Bay is similar. The magnitude of elevated water levels (storm surge) were evaluated by performing an extremal analysis of historical tropical storms and hurricanes that passed within 100 miles of St. John. The storm surge level (above mean sea level) ranges from 3.9 feet during the 10-year return period storm to 8 feet during the 100-year return period storm.

Prevailing waves (sea conditions) in Coral Bay are generated by local generated winds. A nearshore spectra wave model was executed to evaluate the magnitude and direction of the seas. Due to the orientation of Coral Bay, prevailing winds from the southeast generates sea conditions up to 1.5 feet at the project site. Swells (waves generated from storms passing far offshore) are less than 1.5 feet. An extremal analysis of historical tropical storms and hurricanes was performed to determine offshore storm waves conditions. These storm wave conditions were then transformed into Coral Bay, taking into consideration shoaling and refraction effects. Storm wave heights range from 2 to 6 feet depending on storm track. These elevations are consistent with FEMA.

The marina was designed to accommodate wave heights up to and including the 50-year storm event, approximately 4 foot wave. A fixed dock structure with wave attenuation panels is proposed along the south and east perimeters of the marina to reduce sea/swell conditions to less than 0.5 foot during prevailing conditions and 2 feet during storm conditions. The American Society of Civil Engineers (ASCE) guidelines for Small Craft Harbors indicates that the 0.5 foot threshold meets criterion for safe mooring during prevailing conditions. Marina will be designed to moor vessels up to 95 mph and offshore wave heights up to the 50-year storm event.

> *The applicant states that the marina is designed to moor vessels in winds up to 95 mph. Over the past 30 years there have been multiple storm events in Coral Bay in which winds exceeded this level. How will boats in the marina be safely managed if winds in excess of 95 mph are forecast? The space available in Hurricane Hole is always utilized by local boaters who apply for space on a lottery basis. There is certainly not sufficient room in Hurricane Hole for an additional 92 boats.*

*Furthermore, we take strong exception to the applicant's claim that the marina "will be designed to moor vessels up to 95 mph." We do not believe that marina insurance policies will permit boats to remain in the marina under those conditions, nor do we believe the marina could possibly provide safe mooring in winds much over 50 mph. The physical limits of the lines, cleats, boat spacing, water depths, waves and storm surge, all dictate that the marina would be unsafe far before winds reach 95 mph.*

*If the boats located at the marina were to break loose from their lines during a major storm event the consequences for Coral Bay could be disastrous. Fuel spills, wreckage, toxic chemicals thrown onto the shoreline, into the mangroves, and into the waters of Coral Bay could decimate business and natural habitat for years, if not permanently.*

*This is not a question of "if" – it is a question of "when". With global climate change and rising sea levels it is virtually certain that Coral Bay will endure another major tropical storm event sometime in the next 10-20 years. When that happens the proposed marina could release devastation on Coral Bay. This cannot be allowed to happen. A feasible plan for management of 92 boats at the marina in the event of an approaching major storm must be provided by the applicant.*

*The table below is excerpted from the applicant's analysis of wind speeds:*

**Table 2-4 Wind Speed Extremes**

| Return Period | Wind Speed (mph) |
|---|---|
| 10-year | N/A |
| 25-year | 92 |
| 50-year | 107 |
| 100-year | 123 |

*The applicant states that the marina "will be designed to moor vessels up to 95 mph." The applicant's table, above, clearly indicates that the 25-year return period wind speed is 92 mph, only 3 mph less than the design value, and the 50-year return period wind speed is 107 mph which is 12 mph greater than the marina designed mooring capability.*

*What this means is that there is at least a 50% probability that the marina will fail catastrophically with wind conditions exceeding its mooring capability within 25 years (half of the return period). There is a 25% probability this event would occur in the next 12.5 years.*

*We do not believe that any competent engineer or planner would be comfortable approving a plan which by its own analysis indicates a 25% probability of potentially major destructive effects on land and water within a time window of 12 years.*

*We would also like to point out that under conditions of global warming with rising sea levels and extreme weather events, the validity of hindcast models should be questioned. At the very least an extra margin of safety should be applied when utilizing hindcast modeling, since it is likely that future weather events will exhibit more extremes than what was observed in the past.*

***4. Virgin Islands National Park (VINP) and Virgin Islands Coral Reef National Monument (VICRNM) - The Corps is very concerned with the proximity of the proposed marina to the VINP and the VICRNM, and its potential direct, indirect and cumulative impacts on the sensitive marine resources located therein, especially within Hurricane Hole. This concern was also expressed by many commenters to our PN, in particular by the NPS, which is the federal agency responsible for the management of the VINP and VICRNM.***

We all share the concern of protecting our sensitive marine resources, and educating the public is the key to conservation. Marina management intends to install prominent signage and print and distribute literature describing our many natural resources, and stressing that boating traffic must stay within preferred designated channels and avoid all coral reefs and other resources of special concern. We will solicit input from the appropriate agencies and community organizations to define the preferred channel and to identify known resources of special concern. These will be prominently marked on a chart given to all tenants and visitors, and instructions will be given to all captains hailing the marina prior to arrival.

Based on the small total areal size of the project footprint and the fact that the project is located in the far northeastern-most reaches of Coral Bay – the area in the bay furthest from Hurricane Hole and VINP, we believe that these steps will reduce the likelihood of this project would have any adverse or deleterious impact on the resources of VINP.

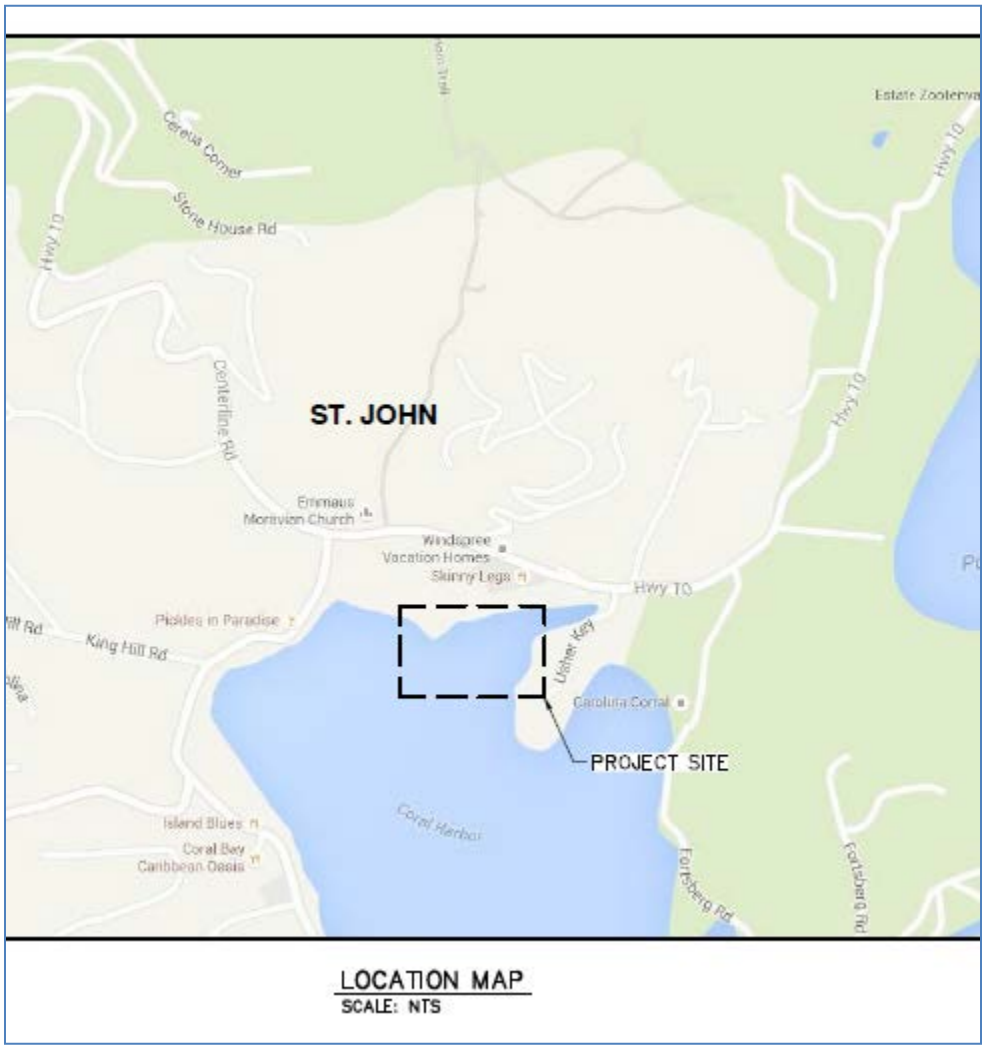
*We thoroughly disagree with this assessment of direct, indirect and cumulative impacts on National Park and National Monument resources. We do not believe that the applicant has made any effort to quantify the impacts and therefore has not proposed any mitigation.*
*The 92 slip marina will add up to 92 predominantly motorized vessels to the current population of around 115 predominantly sailboat vessels in Coral Bay Harbor. This is an increase of at least 80% in terms of number of vessels. Motorboats are potentially far more harmful to habitat than sailboats due to fueling requirements, hydrocarbon exhausts, propeller wash, and wake. So the impact of this marina is considerable and no effort to quantify its impact on National Park resources has apparently been made.*

*With respect to Hurricane Hole, the presence of large numbers of motorboats in this pristine location, only 1.2 miles (by water) and 0.4 miles (by land) from the proposed marina, is a matter*

*of huge concern. The applicant must provide some concrete data to estimate what traffic is anticipated in this vicinity.*

*The sole proposed mitigation – prominent signage and literature – is thoroughly inadequate given the risks to these national resources.*

*The applicant states, above, that "the project is located in the far northeastern-most reaches of Coral Bay – the area in the bay furthest from Hurricane Hole and VINP (Virgin Islands National Park)." This statement is incorrect, as evidenced by the applicant's own drawings in their Army Corps permit application (SHT-02 Vicinity and Location Maps), reproduced below (the dashed rectangle is the approximate boundary of the project site and the green shaded area is within the statutory boundary of the National Park):*




*Contrary to the statement of the applicant, the proposed location is closer to the statutory boundaries of the Virgin Islands National Park than any other location in Coral Bay Harbor. The marina is a mere 440 feet from the statutory boundary of the National Park at its closest approach between the creek and Fortsberg peninsula.*

***The VICRNM was established on January 17, 2001, by Presidential Proclamation 7399 to provide greater protection to sensitive coral reef resources located within federally owned submerged lands beyond the VINP. In light of this proclamation, recreational or commercial boat anchoring is prohibited within the VICRNM. In addition, operation of personal watercraft is prohibited in the VINP and VICRNM.***

We understand this, and this project in no way undermines that executive order. Accordingly, signage and informational kiosks located in the marina with highlight the rules and regulations to boaters in and around VINP. See comments above.

*With all due respect to the applicant, we do not believe that "signage and informational kiosks" are adequate mitigation for the potential risks to sensitive coral resources located within the VICRNM. One careless jet skier can damage large number of young coral colonies in the mangroves of Hurricane Hole. Power boats can, and do injure slow moving turtles. Anchoring has caused extensive damage to coral reefs throughout the Caribbean. Given the limited number of moorings in Hurricane Hole, designed so as to minimize boating impacts, we believe that the large number of power boats and personal watercraft occupying the proposed marina will inevitably drop anchors, use jet skis, and perform activities in violation of use regulations, notwithstanding the presence of "signage and informational kiosks." This happens today – and with the increased number of power boats it is inevitable to happen more frequently.*

***Hurricane Hole, a NPS designated no-anchoring bay, which is part of the VICRNM, is located approximately 1.5 miles from Coral Harbor. The NPS has described that Hurricane Hole supports the most extensive pristine and well developed mangrove habitat on St. John. The NPS also described that aside from the Hurricane Hole area, the majority of the VICRNM and some of the most pristine beach and marine habitat in VINP lie on the south side of St. John and could be immediately accessed from south of Coral Harbor. In addition, the NPS has noted that Lagoon Point, which has been designated as a National Natural Landmark (NNL), is located in Coral Bay directly along the transit routes to and from the proposed marina.***

We agree that these are the facts and that the same boater traffic patterns presently used to enter and exit the bay will not differ after the building of the small marina in the northeastern-most reaches of Coral Bay.

*The vast majority of boater traffic entering and exiting the bay today is wind powered, or sailboats with motor assist. This presents a significantly different traffic pattern than a 92 slip marina with predominantly 45 foot power boats will present. The fact that the applicant believes that roughly doubling the boat population of Coral Bay with close to 100 power boats will not result in significant change is troubling and seems to indicate a lack of any detailed analysis of transit routes, boating patterns, and the differences between motorboat usage and sailboat usage.*

Those presently moored or anchored in Coral Bay as well as those who will visit the marina will be educated upon their first arrival. In its literature and signage, the marina will describe the preferred approaches to Coral Bay and the areas to avoid, as well as applicable rules and regulations, including one prohibiting recreational personal watercraft, e.g., jet skis, in Hurricane Hole. Approach headings from the sea to a prominent light mounted on the marina or to other visible landmarks will be given, with cautionary notes to remain in the preferred channel. Of particular importance management will disseminate precautionary measures to be taken regarding Lagoon Point and other environmentally sensitive habitats in the vicinity of and along the route to the marina. Further, we will endeavor to have this information published in United States Coast Pilot, in the Seventh Coast Guard District *Local Notice to Mariners*, and will have it published on the Active Captain charts. https://activecaptain.com/ Active Captain is now used by majority of cruising yachts to better understand ports of call prior to arrival, and preferred channels and areas to avoid may be placed on electronic charts in the near future. Marina management intends to provide Active Captain with updates and specific information regarding precautions to be taken in navigating through Coral Bay to the marina. Management hopes to work closely with National Park Service and DPNR in implementing these and other measures to protect the environment. Accordingly, we do not see an increase in adverse impacts to the resources of VINP or Lagoon Point.

*As stated earlier, we strongly disagree with the proposed mitigation and the conclusions reached by the applicant. We believe that impacts to Hurricane Hole are inevitable unless there is a mechanism for active enforcement of boating use regulations at least on a 12 hour / 7 day a week basis.*

*We believe that, at a minimum, protection of the resources of Hurricane Hole would require a full time, seven day a week, boating enforcement officer in Hurricane Hole with the power to enforce all relevant regulations on boat speed, anchoring, use of personal watercraft, and so forth. Given that this enforcement needs to take place in NPS and NM waters, the enforcement may need to be under the auspices of the NPS.*

***The proposed marina would be reasonably expected to increase boat traffic activity in the vicinity of Coral Bay, not only by the vessels occupying the marina, but also by their tender boats and recreational personal watercrafts, such as dinghies and jet skis. The NPS has expressed that due to limited resources and personnel it could be difficult for them to effectively enforce the boating regulations, protect the sensitive marine resources, and respond to potential boat accidents and groundings within the VINP and VICRNM with the increased boating activity that could be expected from the development of the proposed marina.***

The number of marina slips proposed for this facility when compared to the overall boat traffic in Coral Bay will have only a minimal impact on the overall boater traffic, and visitation on sites outside of Coral Bay.

*There are presently approximately 115 boats on moorings in Coral Bay Harbor. At least 80% of these boats are sailboats. The applicants propose a marina with 92 slips, and these would be predominantly motor boats (not sailboats).*

*This is a dramatic change in the makeup of the boat population of Coral Bay. Aside from an increase of 80% in the number of boats (from 115 to 207), it is an increase of around 320% in the number of motor boats (assuming 20% of the existing 115 boats are power boats, and assuming 80% of the 92 new boats are power boats, the power boat population goes from 23 to 97, an increase of 321%).*

*The marine traffic generated by a powerboat population is far more intense than a sailboat population, simply because the speed of the powerboat is many times that of a sailboat, and the conditions under which powerboats can use the water are more frequent than sailboats (i.e. the powerboat does not need a breeze to propel itself).*

*These factors combine to mean that the boating activity generated by the proposed marina will be vastly greater than the traffic generated by the current boat population of Coral Bay. Under current conditions, on a typical day during peak season, it is unusual to see more than a half dozen boats in all of Hurricane Hole. There are only 15 moorings in all of Hurricane Hole. There is a high risk that the increased visitation to Hurricane Hole stemming from the proposed marina will result in motorboats speeding through the mangroves, searching for available moorings, and dropping anchor if none are available.*

*The applicant has made no effort to quantify the anticipated number of boat visits to Hurricane Hole resulting from the 92 slip powerboat marina. Without this information available for review and scrutiny, the statement that "the number of marina slips proposed for this facility when compared to the overall boat traffic in Coral Bay will have only a minimal impact on the overall boater traffic, and visitation on sites outside of Coral Bay" is simply a conclusory statement without any data or evidence to support it.*

Presently, comments on the Active Captain charts for Coral Bay sometimes refer to the lack of information about anchorages, and that going ashore means tying to a line along the dinghy dock and wading ashore.

*The applicant is relying upon incorrect information (comments on Active Captain). In my many years of seeing people disembark at the dinghy dock, I have never once seen anyone wading ashore.*

Marina management has recently investigated and prepared an updated breakdown of the vessels moored and anchored in Coral Bay and their registration numbers which has been provided to DPNR and will be given to other government agencies to assist in determining the status and legality of the vessels in the Bay. Further, we will work with local agencies (DPNR) to identify preferred anchorage locations and help define and

implement mooring procedures which will best mitigate any potential adverse effects to the natural resources. This will greatly reduce the present scarring of the bottom and destruction of sea grasses caused by the numerous boats presently anchoring randomly and also pumping out their sewage into the Bay.

*The applicant has supplied no data or evidence to support the statement that the current moored boat population is resulting in scarring of the bottom and destruction of sea grasses. The actual evidence based upon testimony from individuals with direct knowledge of the mooring practices in Coral Bay Harbor indicates that the vast majority of boats are utilizing environmentally sound ground tackle which does not scar the seabed.*

To assist in correcting this problem, the marina will offer a sanitary pumpout station for all vessels in the marina and Coral Bay, and, combined with possible DPNR regulations mandating periodic pumpouts, this will greatly eliminate the sewage presently being dumped into the Bay and help restore the natural environment and mitigate any further damage to the environment of Coral Bay,

*We agree that pumpout is a desired solution for marine sewage. Save Coral Bay is actively pursuing a Clean Vessel Act grant to provide a pumpout boat in the Coral Bay Harbor designated mooring area. However the applicant has supplied no data whatsoever to indicate that the current practice of untreated sewage discharge by a small number of live-aboard boats lacking sewage treatment devices is contributing to any measurable pollution (bacterial) in the waters of Coral Bay. Of the 115 boats currently using Coral Bay Harbor, approximately 20-30 of these are live-aboards, and an unknown number of the live-aboards have marine sewage treatment devices onboard.*

In summary, the alternative to anchoring offered by the marina, the educational process to be undertaken by the marina and the pumpout facilities to be offered by the marina will result in adequately mitigating damage to sensitive marine resources and less pollution in Coral Bay.

*Once again, this is a conclusory statement without a single shred of supporting data or analysis.*

***In spite of the above, the information provided in your permit application did not include an evaluation of the potential effects of the proposed marina on the marine resources within the VINP, VICRNM, or Lagoon Point NNL. Based on the above, it is imperative for our evaluation of your permit application that you please complete and submit an assessment of the potential direct, indirect and cumulative effects of the proposed project on the resources of the VINP, VICRNM and Lagoon Point NNL, including but not limited to boat traffic, enforcement, safety, marine resources, water quality, landscape, viewshed, lightscape, soundscape, carrying capacity, and visitor use and experience. In addition, as part of this assessment, please describe in detail the measures you propose to implement to adequately mitigate (i.e., avoid, minimize and compensate) any potential adverse effects of the proposed project on the VINP, VICRNM and Lagoon Point NNL.***

The number of marina slips proposed for this facility when compared to the overall boat traffic in Coral Bay will have only a minimal impact on the overall boater traffic, and visitation on sites outside of Coral Bay. With the above proposed steps it is unlikely that the marina proposed herein with have a detrimental, impact to VINP and its resources and services. The availability for Boat Sewerage Pumpout and the elimination of some un-regulated moorings will improve the marine environment within Coral Bay.

*The statements above are a repeat of statements made earlier. Lacking any supporting data or analysis, they are simply self-serving conclusions made by the applicant and must be rejected unless additional data to support them is provided.*

It is possible that another Marina might be built in Coral Bay. If this happens, the 200 +/- total slips would require about 50 existing moorings, most of which are do not have any permits, to be lost as they could not be relocated to other areas within Coral Bay. If another Marina would take the same precautions that the Sirius Marina propose, (signage, handouts, maps, etc.), this would minimize any potential adverse impacts to the Nationals Park and VICRNM. Sirius Marina will offer a boat slip for the DPNR Enforcement to use.

*The applicant has totally failed to respond to the explicit imperative request of the Corps to "submit an assessment of the potential direct, indirect and cumulative effects of the proposed project on the resources of the VINP, VICRNM and Lagoon Point NNL, including but not limited to boat traffic, enforcement, safety, marine resources, water quality, landscape, viewshed, lightscape, soundscape, carrying capacity, and visitor use and experience." Simply asserting that "signage, handouts, maps, etc." is sufficient to minimize any potential adverse impacts is unacceptable without a quantitative analysis and report on what the potential impacts actually are. There has not been a single mention by the applicant of impacts to viewshed, landscape, lightscape, safety, or soundscape, all of which are concerns raised by the public, by federal agencies, and by the Corps.*

***5. Economic – Numerous commenters to our PN expressed concerns with the potential adverse effects of the proposed marina on the existing ecotourism based attractions, services, businesses and economy of Coral Bay. Numerous communications were also received from visitors of Coral Bay expressing that they would not return to St. John if the proposed marina is built. In order to adequately address these issues in our public interest review of your permit application and comply with our requirements under NEPA, we request that you please provide an analysis of the potential effects of the proposed project on the existing business and economy of Coral Bay.***

Many Caribbean island nations lack significant industry and sufficient natural resources to provide employment for their residents, and have turned to tourism to support their economies. Economic growth is one of the most fundamental indicators of a community's economic health, and one of government's most important roles is to

promote tourism. Both the Virgin Islands government and the National Park Service (NPS) advertise extensively to attract tourism. The US Virgin Islands are blessed with beautiful beaches, mountains, flora and fauna, making it one of the most visited destinations in the Caribbean. St. John is particularly blessed that Laurence Rockefeller donated majority of the island for dedication to the public.

Over 500,000 visitors each year come to St. John for many reasons, including hiking, exploring the petroglyphs and plantation ruins, for boating, fishing, diving and snorkeling. The NPS offers boat moorings throughout the island. However, presently there is no marina with dock facilities, which would surely enhance the attractiveness of St. John for the boating community and bring back many of the charter services and private yachts that moved to the BVI after hurricane Marilyn because the former Yacht Haven, a popular marina in Charlotte Amalie offering docking and marina services, was destroyed.

*The statement that a marina with dock facilities "would surely enhance the attractiveness of St John for the boating community and bring back many of the charter services and private yachts" is made without any market analysis and/or data to support it. We believe that the statement is incorrect and have supplied evidence to support our conclusions. Numerous boaters have submitted comment letters stating that a marina in Coral Bay would not be a preferred facility for cruisers. These boaters prefer to pick up a mooring or drop anchor in a designated anchorage and come ashore by dinghy. The sole demographic which might find the proposed marina attractive are local St Johnians who would see a benefit in keeping their boat in a marina for ease of access on weekends and holidays. These individuals do not contribute incrementally to the tourism economy since they are already residents of the island.*

*The factors which caused the vast majority of charter business to move to the BVI are far more complex than the destruction of a marina in St Thomas. They have to do with boating regulations, with availability of customs and immigration, with location, and with shoreline amenities such as transient housing. This is why the land-based component of the Resort and Marina project is essential for the economic success of the overall venture. Mixed use marina projects involving overnight lodging, dining, and marina services have a much higher likelihood of success than a standalone marina project. However this applicant continues to assert that the Resort component of the Sirius Resort and Marina is not a central element of the project.*

*Basically, the applicant is making an assertion akin to "build it and they will come" without any supporting data or evidence, and without refuting the evidence to the contrary.*

Our planned marina development in Coral Bay would offer to the community and boaters services such as provisioning center, boat slips, fueling, shops, athletic facilities, and related services. These enhancements would generate more than fifty jobs for locals, training programs, internships, and even more work opportunities during construction and afterwards. Further, it would attract a new market and new revenues to Coral Bay and St. John. There would be new businesses and services offered to the community and visitors as well. All of this would create a trickle-down effect to improve

the economy not detract from it. All of the present businesses in Coral Bay would also benefit from the enhanced overall attraction to Coral Bay.

*We have seen no analysis to support the claim that the standalone marina project proposed by the applicant will "generate more than fifty jobs for locals." In fact, it is our experience that the marina business in St Thomas and elsewhere in the Caribbean is highly seasonal, generally running from November through April (six months). Most jobs in the marina district are likewise seasonal. For this reason the jobs are unsuited for a local family wage earner who needs to provide year-round income to support a family. The vast majority of jobs in the tourism support industry are therefore taken by itinerant workers from the United States who frequently visit for the tourist season and then return to their northern homes during the off season.*

*In stark contrast to the applicant's claim that present businesses in Coral Bay would benefit from "the enhanced overall attraction to Coral Bay" almost all of these business owners have signed letters stating that a large marina in Coral Bay would be detrimental to their businesses.*

Development and tourism on St. John are now centered around Cruz Bay, the westerly port that includes the ferry landing from St. Thomas and other ports, and the population and tourism continue to grow around the Westin Hotel Resort at Great Cruz Bay and the Caneel Bay Resort on the West side of St. John. Numerous homes are owned by part time residents, who often rent the homes when not in use. As all of St. John is within a few minutes' drive from anywhere on the island, tourists are drawn to these locations by the convenience of nearby shops, services and restaurants, grocery stores and boat rental locations. Our marina development would bring tourism and services to Coral Bay therefore generating greater revenues thus improving economics on the East End of St. John.

*These statements by the applicant indicate a total lack of firsthand knowledge of the dynamics of the tourism market on St John. It is untrue that "all of St John is within a few minutes' drive from anywhere on the island" and in fact Coral Bay is at least a half hour drive from many parts of Cruz Bay. Many visitors to Cruz Bay do not venture to Coral Bay during their vacation, as well as many visitors to Coral Bay who prefer the quiet and natural ambiance of Coral Bay and stay far away from Cruz Bay.*

*Coral Bay offers an alternative – the "not Cruz Bay" option – which is highly appealing to people who value proximity to nature and avoidance of commercial development. For this reason countless visitors to Coral Bay return year after year, and have said they would no longer visit St John if Coral Bay became too much like Cruz Bay.*

Coral Bay has been an important port throughout the 300+ year history, and was the largest community on the island before the ferry to St. Thomas began arriving at Cruz Bay. It was the convenience of transportation and availability of goods and services that attracted many to visit and to move to Cruz Bay. The Moravian Church with its waterfront location in Coral Bay for more than 300 years, the proposed site of the marina development, has always been a major part of that history and the

community of Coral Bay. They now wish to develop their property and believe this marina development would be a social, cultural and economic benefit to the entire community, as was strongly testified to at the recent re-zoning hearing before the Legislature by Superintendent Euceline Christopher of the Moravian Church Conference of the Virgin Islands and several other members of its congregation, as well as by Dawn Henry, the Commissioner of Virgin Island Department of Planning and Natural Resources on April 12, 2016.

*The applicant fails to mention that the vast majority of the testimony at the recent re-zoning hearing was opposed to the project because it would deprive the residents of the community of the open space and vistas which they have enjoyed for generations. Furthermore, it is ironic that the applicant even mentions the rezoning hearing because this was exclusively about rezoning the Coral Bay ball field so that a RESORT HOTEL could be built on the property. Based on the applicant's assertion that the marina is totally independent of the resort, how is this even relevant ?*

These are the quality voices the Corps should consider above the quantity of format letters received, which were predominately solicited over the internet by a few 'NIMBYs' opposing any development in their back yard whose solicitations painted a largely inaccurate picture to gain support for their self-serving agenda.

*This characterizations of the extraordinary public opposition to the plans of T-Rex is disingenuous and offensive. The public was apprised of the plans published by the applicant using the applicant's own drawings, reports and commentary. The marina renderings were done to photorealistic scale using data supplied by the applicant in their submissions to the Corps. To claim that the letters were "solicited over the internet by a few 'NIMBYs'" is simply a falsehood. There was NO solicitation of letters. All letters submitted by opponents to the marina were initiated by the individuals themselves as a consequence of their interest in events affecting Coral Bay.*

The format letters received were mostly sent by off-islanders who visited St. John in the past and have little or no recent connection or knowledge of the present needs of the Coral Bay community or the benefits this development would bring.

*The applicant has absolutely no basis in fact for making this statement. The letters were received from individuals who live in Coral Bay, who own property in Coral Bay, who vacation in Coral Bay, and who regularly visit Coral Bay. I would suggest that these people, who represent the essential core element of the thriving ecotourism economy of Coral Bay, have a far better connection and knowledge of the needs of the community than the marina applicants who do not live in the Virgin Islands, much less in Coral Bay. None of the principals of T-Rex St John, Sirius Development, or T-Rex Capital are residents of the Virgin Islands.*

In reality, the proposed marina will blend well with the local community. It will continue to provide basic marine service now offered by Coral Bay Marine, and will improve the availability of goods and services and provide and overall benefit to the community of

Coral Bay and St. John. And in that most of the facilities and services it will offer are not presently offered in Coral Bay, it will bring new businesses to the community and not depreciate or unfairly compete with the existing ones, thus enhancing not detracting from the local economy.

*When local small business owners were asked whether a marina in Coral Bay would enhance their businesses, not a single owner replied in the affirmative. In fact, virtually every small business owner in Coral Bay believes that the disruption caused by the construction, and the change in the overall atmosphere and ambiance of Coral Bay stemming from the resort and marina, would adversely impact their businesses.*

The marina is located in the lee of a portion of Usher's Cay, and largely protected from wave action; but the owners of the Cay would still enjoy their riparian rights and continued access to the Sea as the nearest dock is 125' from the Cay. Local vendors at the marina will offer sailing lessons, sailboat rentals, fishing charters, SCUBA and snorkeling excursions and other popular services. The type of services to be offered are those found to be most popular with tourists and local residents throughout the islands. The availability of these services will attract more visitors to the community, which will result in increased expenditures in local shops and restaurants and increased occupancy in the available tourist accommodations. These factors will result in greater employment and improved living standards for local residents, who often must commute to St. Thomas or move from their homes in Coral Bay for employment.

In addition to the multiplier effect on employment throughout the community, the marina and related facilities will employ over fifty persons, plus those employed during construction with payrolls in excess of $2,000,000 per year. The marina positions include management and supervisory employment, accounting positions, customer service positions and dock personnel. The service yard will employ engine mechanics and riggers, and each vendor will employ both specialist and highly trained positions, such as charter captains, dive instructors and fishing guides. The marina management strongly supports and will assist in establishing training and internship programs to educate young and older Virgin Islanders and help provide them with the experience that will raise their employment status throughout their lives. And, those who have such experience will be prime candidates for employment in the marina development. The Sirius Marina will work closely with the Moravian Church, the Virgin Islands Department of Education and community leaders to promote the establishment of these technical education classes.

*We seriously question the applicant's estimates of job creation and payroll. In our experience the marina industry in the Virgin Islands is highly seasonal, running from November through April (approximately six months). During the remainder of the year marinas in the USVI are typically empty and the marina and related facilities are shut during the off season. Seasonal employment is not attractive to family wage earners who require year-round employment. For that reason most jobs in the tourism services sector are taken by temporary residents from the continental United States. We do not believe the applicants claim that the proposed marina will help Virgin Islanders to "raise their employment status throughout their lives."*

Despite the inaccurate comments that the marina will force KATS program to relocate, the marina management has met with KATS' leaders and consistently supported this fine program and will always provide this program and the community with access to the sea. The present concrete dinghy dock will remain and the marina will also construct a new dinghy dock and a new boat ramp which will be offered for use by the public.

*The applicant states that the present concrete dinghy dock will remain. However one drawing includes the notation that the historic dock will be demolished and removed. The illustration below shows the location of the historic town dock with an overlay of the proposed marina. It should be apparent that the marina effectively makes the historic dock inaccessible and virtually useless. Any dinghies wishing to utilize the historic dock would need to circumnavigate virtually the entire marina to access the dock, located in a narrow space between the shoreline, the bulkhead, and the northernmost access dock.*

The development will also construct a new ball field and basketball court for the community on the adjoining parcel to the marina.

*Once again the applicant is mixing elements of the Resort proposal with the Marina proposal. The "new ball field and basketball court" are proposed to replace those public facilities which would be lost when the Resort complex is constructed on the existing ball field. If the new ball field is a component of the Marina project then it needs to be described in the permit application and supporting commentary. We have strong reasons to believe that the proposed location for the new ball field is infeasible. It is in a low-lying flood plain and may include jurisdictional wetlands. It is in a rich archeological location just downhill from a documented slave village. It has insufficient acreage to meet the zoning requirements for a ball field. Why is this topic even being discussed if it is not part of the Marina plan, and if it is part of the Marina plan, then why has no detail whatsoever been supplied ?*

***6. Infrastructure - Numerous commenters to our PN expressed concerns with the potential adverse effects of the proposed marina on the infrastructure at Coral Bay, particularly with respect to traffic, energy, potable water, solid wastes and wastewater. The EAR submitted with your permit application provided evidence of traffic estimates, potable water demand calculations, wastewater collection and disposal plans, energy demand calculations, and solid waste management plans. However, the EAR indicates that detailed studies to determine fresh water yield and viability of wells for potable water production have not been completed. Therefore, it is not clear how the project would satisfy its potable water demands, and how it would avoid adverse impacts to the fresh water aquifer in the area. Please provide supplemental information to document how these issues would be addressed. Furthermore, no documentation was provided to evidence that the pertinent agencies (i.e., Virgin Islands Water and Power Authority, Virgin Islands Waste Management Authority, and Virgin Islands Department of Public Works) have evaluated, approved or commented with regards to the infrastructure needs or potential impacts of the project, including any related studies, calculations or plans. In order to adequately evaluate the potential effects of the proposed project on the existing infrastructure of Coral Bay, please submit evidence of the evaluation by those agencies regarding the proposed marina.***

Parcel 10C is located at the bottom a large watershed and preliminary research has indicated that well-designed and located wells will have a daily yield of brackish/fresh water of over 30,000 g/d which is substantially higher than the 4,000 g/d required by the Marina. Once all permits are received, a detailed Groundwater Development Program would be prepared and undertaken. The program would include hydrogeological evaluation, site visits by a geologist and test wells. Based on this information, location, type and depth of the well(s) would be determined. The wells would be designed to prevent saltwater intrusion and negative impacts on any existing nearby wells.

*The applicant's claim that 30,000 GPD of brackish water can be pumped from Parcel 10C is not in the least bit consistent with the experience of other well owners in that vicinity. Wells in Coral Bay typically yield 1,000 to 5,000 GPD of high salinity water. Extracting 30,000 GPD from a 3.5 acre parcel would run a severe risk of sea water infiltration by depleting the aquifer at higher rate than the replenishment rate. In any case, the applicant's statement that they will prepare and undertake a "detailed Groundwater Development Program" only* ***after*** *all permits are received is clearly not an acceptable solution to the potable water problem. The developments proposed by the applicant cannot be permitted* ***until*** *the applicant has demonstrated a practicable and environmentally sound means to provide potable water for all reasonably related projects involved in the current application. This must include the marina requirements, the resort requirements, the retail and service requirements, and the athletic field requirements.*

*A plan based solely on "preliminary research" is not sufficient evidence of feasibility, particularly when that research contradicts the real world experience of individuals living in the area.*

The Virgin Islands Water and Power Authority, Virgin Islands Waste Management Authority, and Virgin Islands Department of Public Works will be evaluating the Project during the current CZM Permit Process and their evaluations will be forwarded to the Corp upon receipt.

*The Corps has asked for responses to public concerns regarding "traffic, energy, potable water, solid wastes and wastewater" and the applicant has not responded to this request, but has merely said that the relevant territorial agencies will review these requirements during the CZM permit review process. We have examined the only information provided by the applicant, in the Environmental Assessment Report (EAR) and the following observations are based on statements in that document.*

*Regarding traffic, the excerpt from the EAR dealing with this infrastructure demand is shown below:*

**7.03.4 Traffic**

Access into the Marina will be off of Route 10 and is estimated to be less than 100 vehicles per day. Route 10 has a design capacity of 100+ vehicles per hour.

*These figures neglect the fact that traffic is not spread evenly over a 24 hour period. It can be anticipated that at least 80% of the total marina traffic load will occur during the peak morning and peak evening hours, e.g. from 8:00 – 10:00 am and from 4:00 – 6:00 pm, a four hour period. This would then mean that 80 vehicles are anticipated over a four hour period, or 20 vehicles per hour. If the peak design capacity of Route 10 is 100 vehicles per hour, this demand is 20% of the entire capacity of the roadway. We are also concerned that this estimate does not apparently include the demands of the closely related 89-room Resort and Hotel. No estimate of traffic loading has been provided for that component of the project.*

*Regarding waste water, the EAR makes the following statements:*

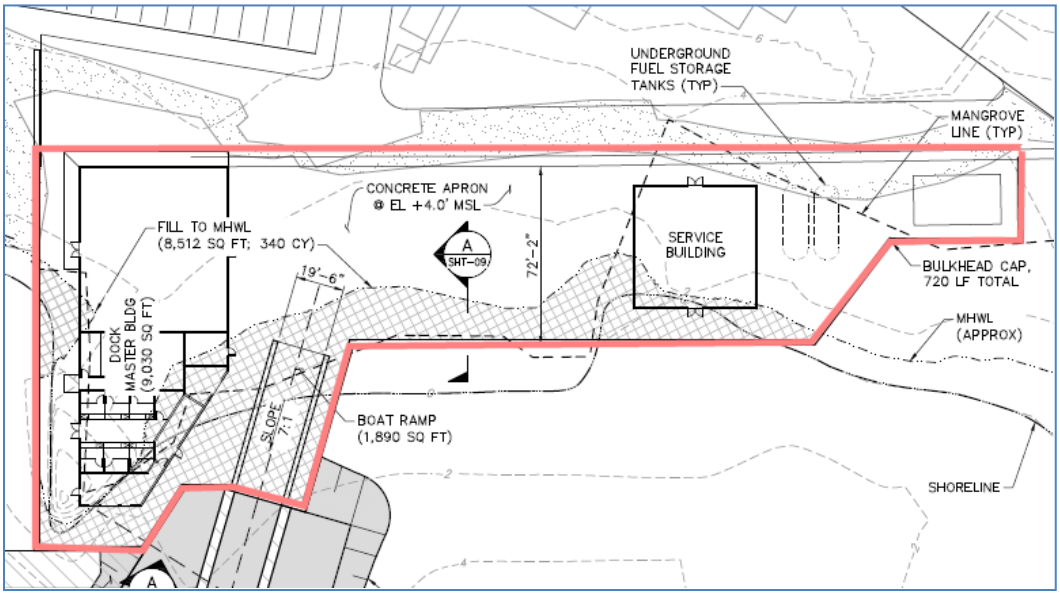
**7.03.2 Sewage Treatment & Disposal**

The sewage from the boats pump-out and the land-side facilities will be will be approximately 75% of the potable water demand and will be treated in a tertiary 2,500 gal/day Wastewater Treatment Plant and the effluent will be used for landscape irrigation. Boat pumpout will be available at the Fuel Dock. There will be a potable pumpout cart at the dock for boats at the slips.

Based on an average rate of 2,500 g/d with an irrigation rate of 1" per week, the irrigation area needed for the WWTP effluent will be 27,500 sf.

.

*The applicant suggests that WWTP effluent can be used for irrigation provided 27,500 sf of vegetated area is available and it has a capacity to consume 1" per week. However the revised drawings submitted by the applicant do not indicate the presence of **any** vegetated area on the entire marina site. The illustration below is the upland portion of the Sirius marina project, and the area outlined in red is labeled "concrete apron" in the drawing:*




*Virtually the entire upland project (not including the Resort and Hotel, which the applicant insists is not part of the project), is impervious concrete paving. There is no vegetated area to absorb the 2,500 GPD of processed waste water effluent. However no provision has been made for discharge of this waste water into the bay, and no description of how it would be discharged elsewhere has been provided.*

*Regarding solid waste, the applicant's EAR contains the following statements:*

**7.03.3 Solid Waste**

Solid waste generation will be approximately:

| | | | |
|---|---|---|---|
| • Provisioning | 3#/100 sq.ft | 2,000 sq.ft. | 60 lbs/day |
| • Retail | 2.5#/1,000 sq.ft. | 1,000 sq.ft. | 2.5 lbs/day |
| • Employees | 1.25#/day | 15 | 18 lbs/day |
| • Boats Slips | 2.5#/day | 92 | 230 lbs/day |
| | | | **310 lbs/day** |

*Although we seriously question the accuracy of this estimate, particularly the 2.5 lbs per boat per day, even if the estimate is accepted as presented by the applicant, it creates a burden on existing solid waste management which has not been addressed by the responses of the applicant. Solid waste management is a huge problem in the remote location of Coral Bay. The "dumpsters" used for solid waste collection are frequently overflowing and solid wastes are dispersed into the adjacent wetlands. Feral animals further spread these waste products. Adding over 300 lbs per day to an already overburdened system is not advisable. The illustration below is a typical view of the Coral Bay dumpsters – filled to overflowing, adjacent to mangrove wetlands:*

*We believe the applicant needs to respond with a concrete plan for solid waste management that addresses not only the increased demand from the marina, but also the considerable solid waste demand which will be generated by the associated Resort and Hotel.*

*Finally, regarding potable water, the relevant excerpt from the applicant's EAR is reproduced below:*

**7.03.1 Potable Water**

Parcel 10C is at the bottom of a major watershed and it is proposed that wells be drilled and the water used for processing thru an R/O system to produce the potable water needs for the Marina operation. A total of 4,000 gal/day is required for the Marina operation. In addition to the normal restroom requirements for employees and customers, there will be a restroom with lockers and toilets for boat owners and crew.

| | | Units | Gals/unit/day | Gals/day |
|---|---|---|---|---|
| **Marina** | | | | |
| Slips | boats | 92 | 20 | 1,840 |
| Dry Stack | boats | 30 | 5 | 150 |
| Retail | per toilet room | 2 | 400 | 800 |
| Employees | number | 15 | 15 | 225 |
| | | | | **3,015** |

The water from the wells will be processed thru a brackish R/O and stored on Parcel 10A in a cistern and trucked to the Marina as needed. There will be a 18,000 gal cistern at the Marina. Potable water will be available at all slips.

*We have commented elsewhere about the feasibility of the proposed supply utilizing brackish wells and reverse osmosis. This analysis of potable water, however, brings other unanswered questions to the surface. First, the applicant states that there will be a "18,000 gal cistern at the Marina." We cannot find any mention of this in the revised drawings. Will it be above or below ground ? If below ground at what depth will it be located? How will the cistern be connected to the reverse osmosis plant, and where will the pipes be located? If the reverse osmosis plant is on Parcel 10C then the pipes will need to traverse a public roadway and a drainage ghut to reach the marina. None of these critical details have been provided by the applicant.*

*Furthermore, the table above indicates that there will be 15 employees utilizing potable water at the marina. Elsewhere (as shown below) the applicant indicates 44 employees, and in the description of economic benefits the applicant indicates 50 employees. Which figure is correct? If we accept the 50 employees then the potable water requirements increases by almost 20%.*

*All of these observations regarding infrastructural needs of the project need to be addressed by the applicant. The Corps has asked for responses and the sole response has been that the territorial agencies will be reviewing these topics. We find this response thoroughly inadequate.*

## *C. Size and Design of Proposed Docking Structure*

***The Corps is concerned with the size and layout of the proposed marina, and its potential impacts to the existing resources, conditions and uses within Coral Bay. As discussed below in more detail, we request that you evaluate possible project modifications and measures, including reductions and/or modifications in the size or layout of the proposed project and structures, to prevent potential adverse effects on the aquatic resources, and the existing conditions and uses within Coral Bay. In addition, please submit a discussion of which measures would be implemented to mitigate (i.e., avoid, minimize and compensate) those potential impacts. Particular considerations that should be addressed as part of this evaluation include:***

***1. Loss of waters of the U.S. - The Corps is very concerned with the proposed project impacts to open waters and mangrove wetlands. According to the information provided in the permit application, the construction of the proposed marina would require the discharge of 582 cubic yards of dredged fill material over 0.34 acres on open waters of Coral Harbor for the construction of the marina bulkhead, concrete apron and boat ramp. The permit application further states that the construction of the bulkhead and boat ramp would also result in the loss of 0.1465 acres of mangroves. However, the Corps understands that the impacts of the proposed project to wetlands may have been underestimated.***

In reassessing the construction of the marina facility, we have employed as much avoidance and minimization as practicable and still be able to construct the necessary facilities for the proposed marina facility. We have revisited the avoidance and minimization process and has revised the location and geometry of the marina service yard and boat launch facility to avoid and/or minimize impacts to the waters of the US. The boat launch facility was repositioned to the west side of the small embayment to minimize impacts to mangroves and reduce the amount of dredging. The dredged area has been reduced by 48 % (17,500 sq. ft) and the volume of dredged material reduced by 35% to 1,200 cubic yards. The bulkhead supporting the marina service yard has been repositioned landward, reducing its overall length, the amount of fill that will be placed behind the bulkhead, and impacts to mangroves. The bulkhead is required to the boat service facility; an existing operation in Coral Bay. Due to constraints with existing businesses and designated road right-of-ways, the amount of available upland areas is not sufficient to maneuver boats in the service yard, including launching operations at the boat ramp.


Accordingly, the footprint of the impact has been significantly reduced (please note revised permit drawings submitted by M&N). Specifically, the area of loss of fringe mangrove wetlands has been reduced from 0.1465 acres to 0.138 acres. A reduction of more than 6 %.

*The applicant has failed to address the extent of the filled open waters in the new proposal. Based on the drawings provided (SHT-06 Boatyard Plan) the current proposal is to fill 10,402 square feet of open water, or 0.24 acres. This compares with the prior plan to fill 0.34 acres.*

*The claimed loss of mangrove wetlands has been reduced from 0.15 acres to 0.14 acres, a trivial reduction. We continue to believe that the impacts to wetlands have been significantly underestimated due to the following factors: (1) new mangrove growth in areas that were not shown on the prior aerial photographs, and (2) cutting off the salt pond mangrove channel by construction of the bulkhead, isolating that body of water.*

*However perhaps the most troubling aspect of the statements made above by the applicant is the justification offered for the filling of open waters. The applicant states: "The bulkhead is required to [sic] the boat service facility; an existing operation in Coral Bay. Due to constraints with existing businesses and designated road right-of-ways, the amount of available upland areas is not sufficient to maneuver boats in the service yard, including launching operations at the boat ramp."*

*It is unclear what is meant by the bulkhead being "required to the boat service facility; an existing operation in Coral Bay." If the applicant is referring to Coral Bay Marine, the existing operation, then it is functioning and has been functioning for decades without a bulkhead. Furthermore, if the sole reason for construction of the bulkhead and filling of open waters is due to "constraints with existing businesses and designated road right-of-ways" resulting in limited upland area being available, then this is the present actual condition of the site and something which must be considered in the alternatives discussion. Basically the applicant is saying there is insufficient land available to construct the desired marina facilities, so they are proposing creation of new land by installation of a bulkhead in open waters and backfilling with dredge spoil.*

*This statement alone should be sufficient to deny the permit based on the fact that it clearly is not the LEDPA – the site selected by the applicant has insufficient space for the upland marina project. The applicant must propose use of the lands to the west of the proposed location, land which they wish to reserve for the Resort and Hotel. Use of that land (a preferred on-site alternative) would completely eliminate the need for bulkheading and filling of open waters.*

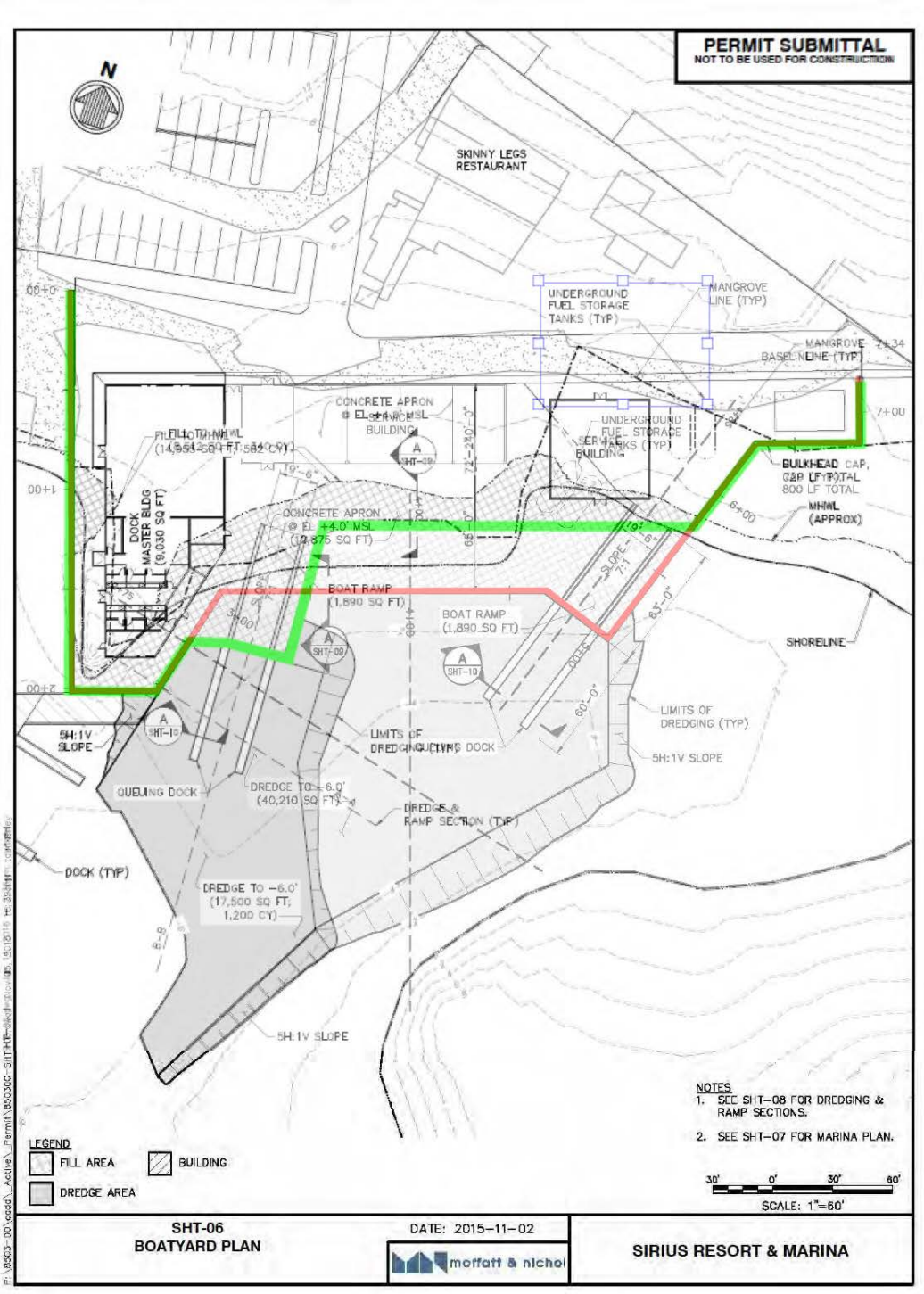
*Furthermore, we question whether some of the proposed upland facilities are "water dependent uses" as that term is used in the Clean Water Act. The retail provisioning shops could be several hundred yards away from the water and still provide full utility. The marina management offices do not need to be located in filled wetlands. Even the boat garage could be located on existing fast land. Under the "double rebuttable presumption" the applicant is required to demonstrate that there are no alternatives to the proposed plan which do not involve impacts to wetlands and other special aquatic sites. The applicant has not done this.*

***A review of the plans, illustrations and aerial photographs submitted with the permit application indicate that fringing mangroves wetlands, which were not included in the impact estimates could be present at additional locations along the proposed bulkhead and within the proposed dredging footprint, particularly along the shoreline of Usher Cay. In addition, the construction of the proposed bulkhead could sever the surface hydrological connection between Coral Bay and a salt pond located to the east of the proposed marina. Information provided by SCB indicates that a tidal mangrove channel presently provides surface hydrological connection between the bay and the salt pond. The potential loss of waters of the U.S. which could result from severing this connection and isolating the pond were not included in the impact estimates described in the permit application. Likewise, a site visit conducted by the Corps on October 8, 2015, revealed that the proposed dredged material disposal site may contain wetlands. The information provided with the permit application did not include an evaluation of the potential presence of wetlands within the proposed dredge disposal site, nor an estimate of potential wetland impacts therein. In order to more precisely assess the extent of impacts to waters of the U.S., including open waters and mangroves, we request that you please complete a more detailed***

***evaluation of the presence of waters of the U.S. within all project areas and prepare a plan illustrating the boundaries of those waters overlaid with all components of the proposed project.***

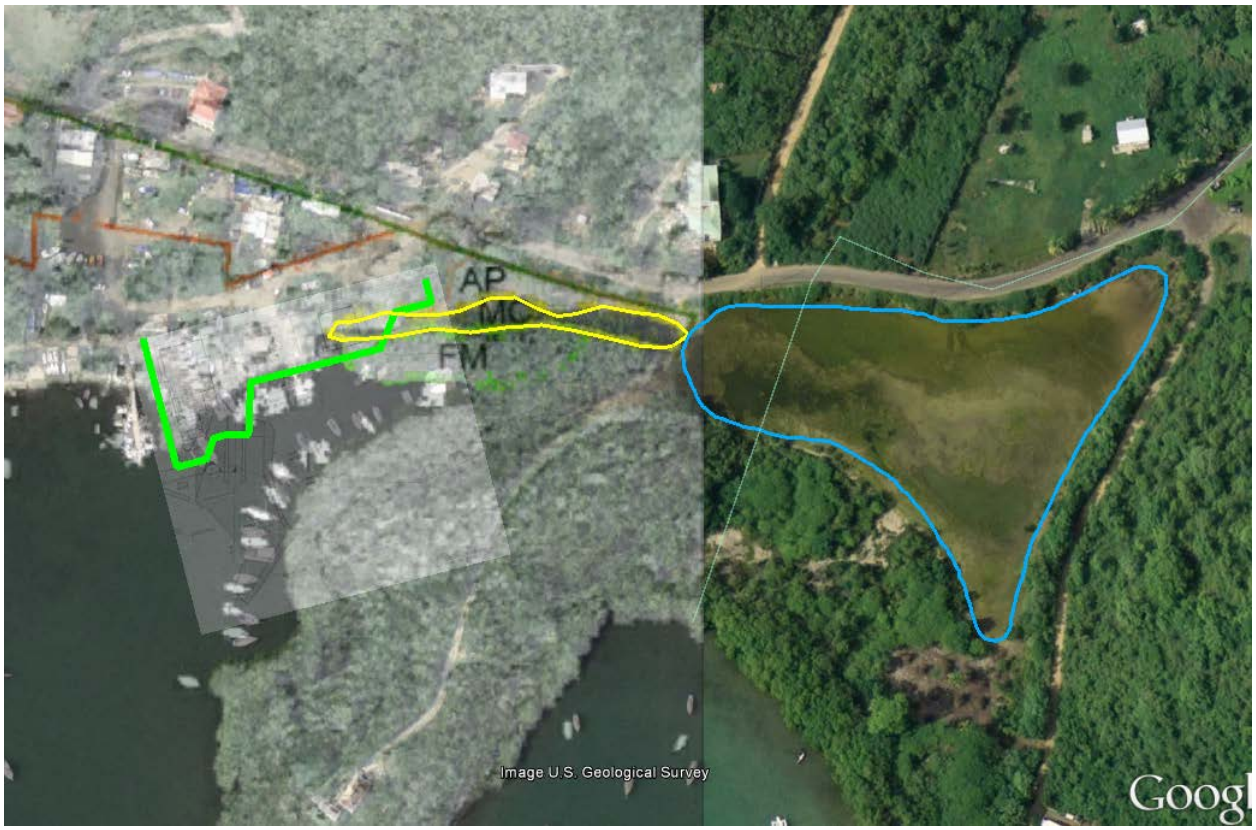
The new Marina Layout and dredging plan will totally avoid Usher Cay and and impacts on the Mangroves lining Usher Cay. Usher Cay is 125' from the proposed Dock. There will be no impact to mangrove wetlands along Usher Cay. Based upon our evaluation of the new bulkhead location, the tidal impoundment in the northeastern most corner of Coral Bay which is tidally connected to the salt pond will not be severed.

> *We have compared the "new bulkhead location" with the bulkhead depicted in the original Army Corps permit drawings. The two bulkheads are overlaid in the composite image below (the bright green line is the "new bulkhead" and the light red line is the original bulkhead – where they overlap it appears as a darker green):*



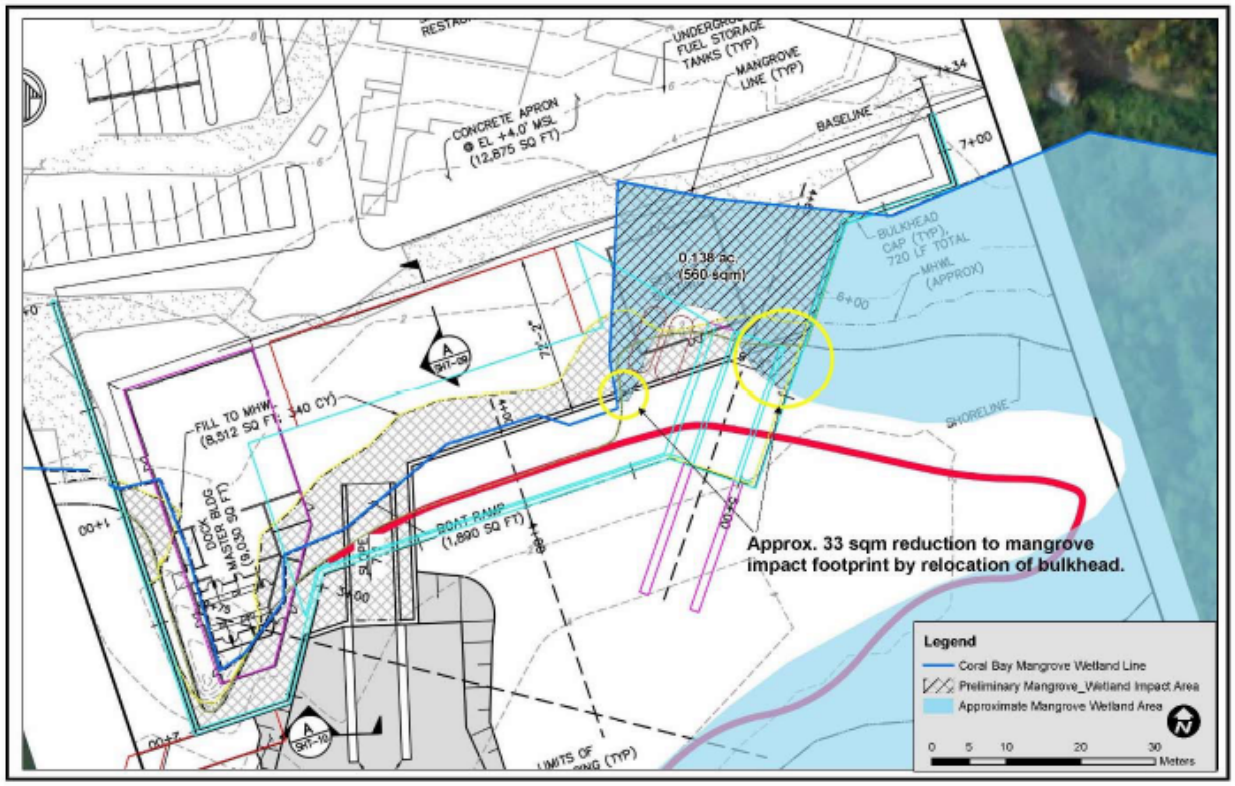

*It should be immediately apparent from this overlay that the applicant has not changed the location of the bulkhead in those portions that are landward of the current shoreline and in particular the bulkhead at the extreme eastern part of the project is identical to the previous location. The illustration below overlays the "new bulkhead location" on the applicant's own drawing of the location of the mangrove channel that provides a tidal connection to the salt pond and it is clear that the new bulkhead (which is in the identical location as the original*

*bulkhead) severs the connection with the salt pond and isolates those waters. In this composite drawing the salt pond is outlined in Blue, the tidal mangrove channel is labeled "MC" and outlined in Yellow, and the "New Bulkhead" is the bright Green line. The bulkhead completely severs the tidal connection between the salt pond and the harbor, isolating this body of water.*




A Wetland Delineations Survey was done on Parcel 10C by EcoScience (Site 1) in 2007 and no wetlands were observed. In 2015, personnel from Dial-Cordy inspected the low areas of the parcel. Based upon their desktop and field evaluation of wetlands, they did not find any wetlands, either isolated or connected, in the vicinity of the proposed dredge material disposal site. We will gladly meet with field biologists of the USACE to determine if any jurisdictional wetlands are present.

The mangrove/wetland map below depicts all jurisdictional wetlands within the revised project footprint. This map is based on field data collected in December 2014.

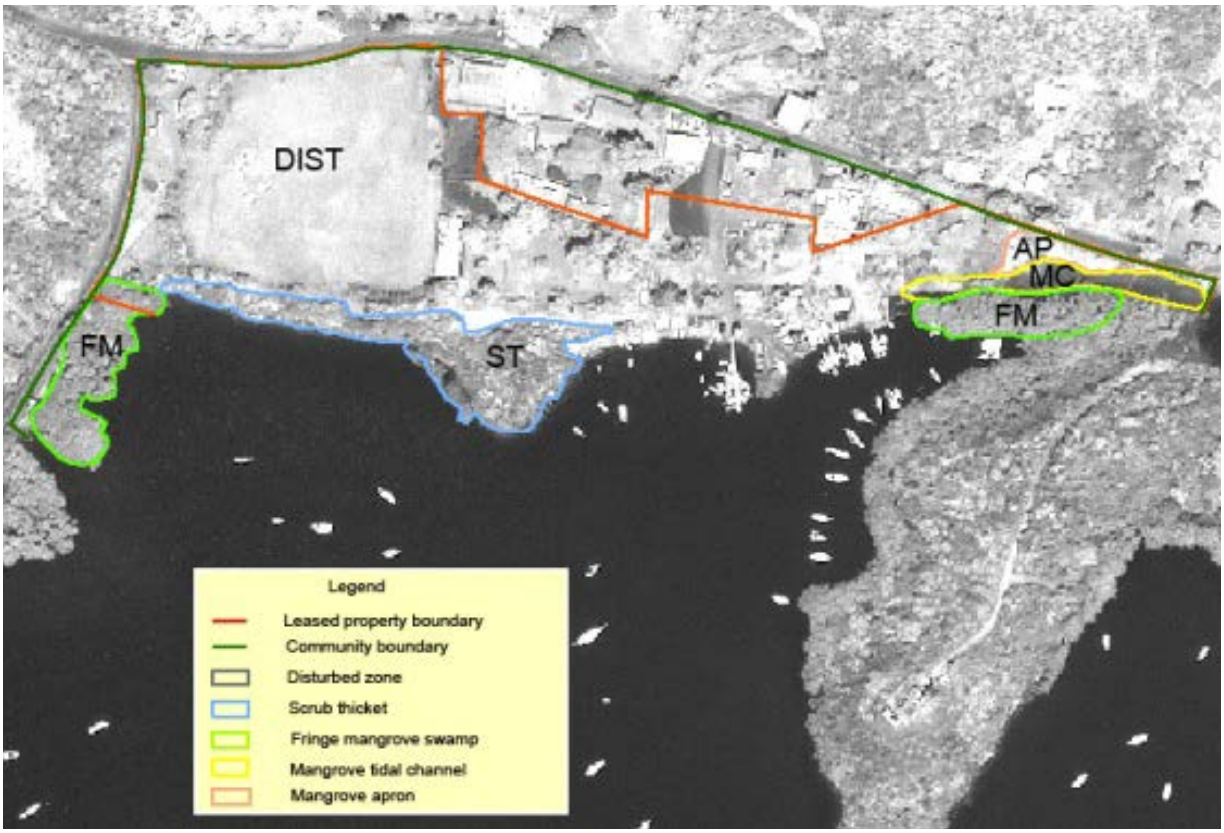



*The map above is inconsistent with other reports provided by the applicant. In particular it does not depict the mangrove tidal channel ("MC" in the illustration below) which supports the adjacent salt pond. Nor does it depict the mangrove apron ("AP" in the illustration below) to the north of the tidal channel. These features are shown below (the illustration is taken from the applicant's terrestrial resources survey). We have confirmed the presence of the mangrove tidal channel by field observation and would be pleased to point this feature out to Army Corps and applicant staff if requested.*

*The mangrove tidal channel connecting to the salt pond is well known to the owners of Usher Cay. In historic times there was a stone culvert or bridge traversing the channel on the road leading to the house on Usher Cay. Remnants of these stone works are still visible. The road is frequently flooded during high tides, providing replenishment to the waters of the salt pond.*

*The proposed location of the bulkhead and concrete apron would totally cut off the channel from the waters of Coral Bay, thereby isolating the salt pond.*

*The illustration above does not include the extensive mangrove propagules which are seen on virtually the entire northern shore of the creek. We have provided photographic evidence of this mangrove growth previously. As a consequence of the issues discussed above we believe the applicant has significantly underestimated the impact to mangroves.*




***Moreover, the information submitted with the permit application did not include a discussion of the efforts completed to avoid and minimize impacts to waters of the U.S. As stated above, we request that you please provide evidence of your evaluation of practicable modifications, including relocation, modification or reduction of project components and its footprint to avoid and minimize to the maximum extent, proposed impacts to waters of the U.S. In this regard, please discuss why the proposed bulkhead is necessary to accomplish the project purpose; whether a bulkhead with a smaller footprint within waters of the U.S. could be practicable; and whether the existing boat ramp could be incorporated as part of the project instead of building a new one as proposed. Please be reminded that according to 40 CFR Part 230.10(a) the Corps may only authorize the least environmentally damaging practicable project alternative (LEDPA).***

This has been addressed in Item C. 1 above

*We do not believe that the applicant has provided any evidence that the bulkhead and associated filling of WOTUS is necessary to accomplish the project purpose. The Basic Purpose, as stated by the Army Corps, is "Offshore Marina." The Overall Purpose, as stated by the Corps, is "Construct a private commercial offshore marina with ancillary facilities in adjacent uplands in St. John, USVI."*

*The applicant's sole statement justifying the construction of the bulkhead and filling waters of the US is "The bulkhead is required to [sic] the boat service facility; an existing operation in Coral Bay. Due to constraints with existing businesses and designated road right-of-ways, the amount of available upland areas is not sufficient to maneuver boats in the service yard, including launching operations at the boat ramp."*

*In essence, the applicant is stating that there is insufficient land in this location to construct the facilities they wish to include in their plan. However the applicant has a long term lease on the large parcel of land just west of the proposed fill area (the land behind the school, and the ball field). It would certainly be possible to move the entire marina structure slightly west and construct all of the proposed amenities on the existing dry land. This alternative would entirely eliminate the need for dredging, construction of bulkheads, and filling open waters of the US. We have illustrated a potential rearrangement of these components below to demonstrate the feasibility of this concept.*

*Under this rearrangement the main access pier to the marina would depart the shore just west of the existing historic town dock. This would ensure that the town dock could continue to be used in an unobstructed fashion as it has been for over 100 years. This arrangement would entirely avoid impacts to the mangroves and wetlands in the "creek", and would not impact the exchange of water with the salt pond. By using (and possibly improving) the existing boat ramp which has functioned for decades without a dredged basin, the plan could totally eliminate dredging. And most importantly, this configuration would eliminate bulkheads and filling of open waters of the US.*

*The applicant is required under the Clean Water Act Section 404 Guidelines to explore all practicable alternatives, including on-site alternatives. We believe there are practicable on-site alternatives, in line with our suggestions above, which would entail significantly less environmental impacts than the applicant's preferred alternative.*

*As the Corps stated in the Public Notice, the overall purpose of the project is "Construct a private commercial offshore marina with* ***ancillary facilities in adjacent uplands*** *in St. John, USVI." The applicant has apparently determined that they would prefer not to use the adjacent uplands for the marina ancillary facilities, and have therefore proposed filling open water to create new land. This is not responsive to the overall purpose established by the Corps.*

***In addition, please note that via letter dated January 8, 2016 (copy provided in attached disk), NMFS - Habitat Conservation Division (NMFS-HCD) provided Essential Fish Habitat Conservation Recommendations for your proposed project, particularly to avoid and minimize impacts to mangrove wetlands. Please review NMFS-HCD communication and provide adequate responses to their concerns and requests. This information will be necessary to complete our required interagency consultation pursuant to the MSA.***

This has been done, see response above.

***2. Impacts to seagrass and benthic habitats - The Corps understands that the assessment of potential impacts to seagrasses and benthic habitats provided in your permit application should be revised to provide a more detailed analysis and discussion of the rationale and considerations used to estimate those potential impacts, particularly with respect to potential impacts during construction and operation of the proposed marina.***

Outside of the direct impacts to seagrass communities during construction of the docks the contractor will use BMP's developed for coastal construction projects by the Florida Department of Environmental Protection.

https://www.dep.state.fl.us/coastal/programs/coral/reports/MICCI/MICCI_06_Workshop_Proceedings.pdf

These BMP's are the present-day standard for avoiding unnecessary impacts to adjacent submerged biological resources. Accordingly, significant buffers should be maintained around all reefs (natural or artificial), hardbottoms, submerged aquatic vegetation (SAV) and other high value habitats, including areas designated as Essential Fish Habitat (EFH) or Habitat Areas of Particular Concern (HAPC). Buffers should be delineated prior to construction so that the design and construction planning can incorporate avoidance measures in advance.

*We have not seen any benthic survey from the applicant which includes SAV other than sea grasses.*

***The revised assessment should clearly illustrate, using benthic and bathymetric maps overlaid with the footprint of the project components, and the location, extent and source of all potential impacts by habitat type. All project related components potentially affecting seagrasses should be considered in this analysis, including the proposed fill and dredge areas, navigation channel, docking structures, and associated basin and navigation areas. In this regard, please note that the transects established for the benthic assessment, which was included in the project's EAR and permit application, did not extend into the proposed dredge and fill areas.***

The areas in the proposed dredge and fill areas were completely devoid of seagrass.

*Our own examination of the fill area showed considerable SAV in the shallow waters, predominately forms of macro algae. How can the applicant claim that an area is devoid of sea grass and SAV if they did not conduct any transects of that area? The photograph below is in an area the applicant proposes to fill:*

The area between Ushers Cay to the east and the first appearance of seagrass (denoted in red) to the west was an area of muddy – barren bottom.

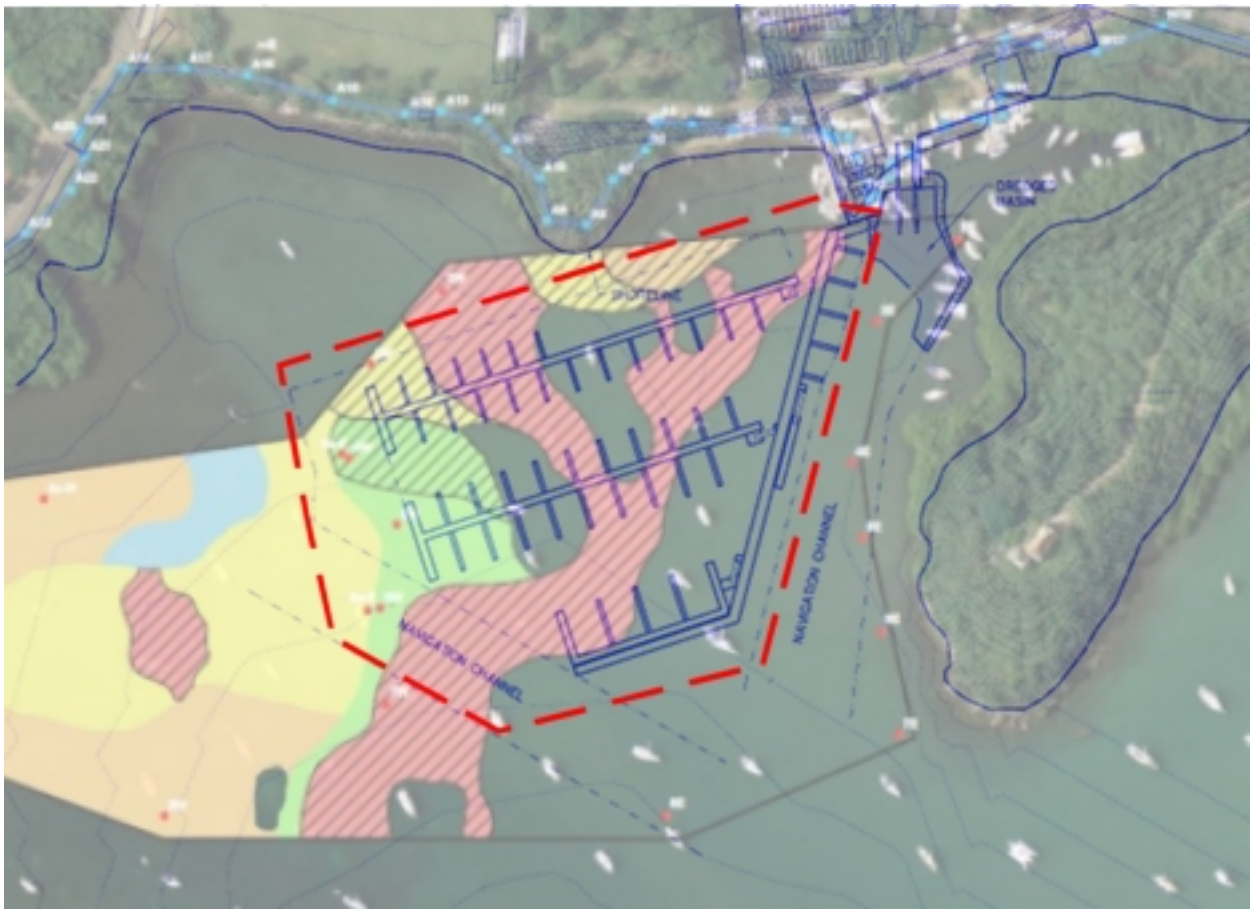
Figure 1 indicates the SAV impacts by the Docks (Primary) and by the slip areas where the boats tie-up (Secondary). The area of impact to just native seagrasses is zero. Within the project area, there is only areas of just Halophila stipulaces (Exotic) and mixed areas of native and exotic seagrasses. The total areas of mixed seagrasses are: Primary Impacts = 0.145 acres; and Secondary Impacts = 0.439 acres. The marine benthic survey noted that the exotic seagrass, H. stipulaces is starting to move into the native seagrass beds and displacing them.

*The Corps has requested an assessment of project impacts on sea grasses located in the "navigation channel, docking structures, and associated basin and navigation areas." The applicant has only illustrated the sea grass types found directly beneath the docking structures, and not the channels and navigation areas. Given the very shallow depths and the size of boats proposed, it is likely that the grasses throughout the entire marina footprint will be impacted by the marina construction and operation.*

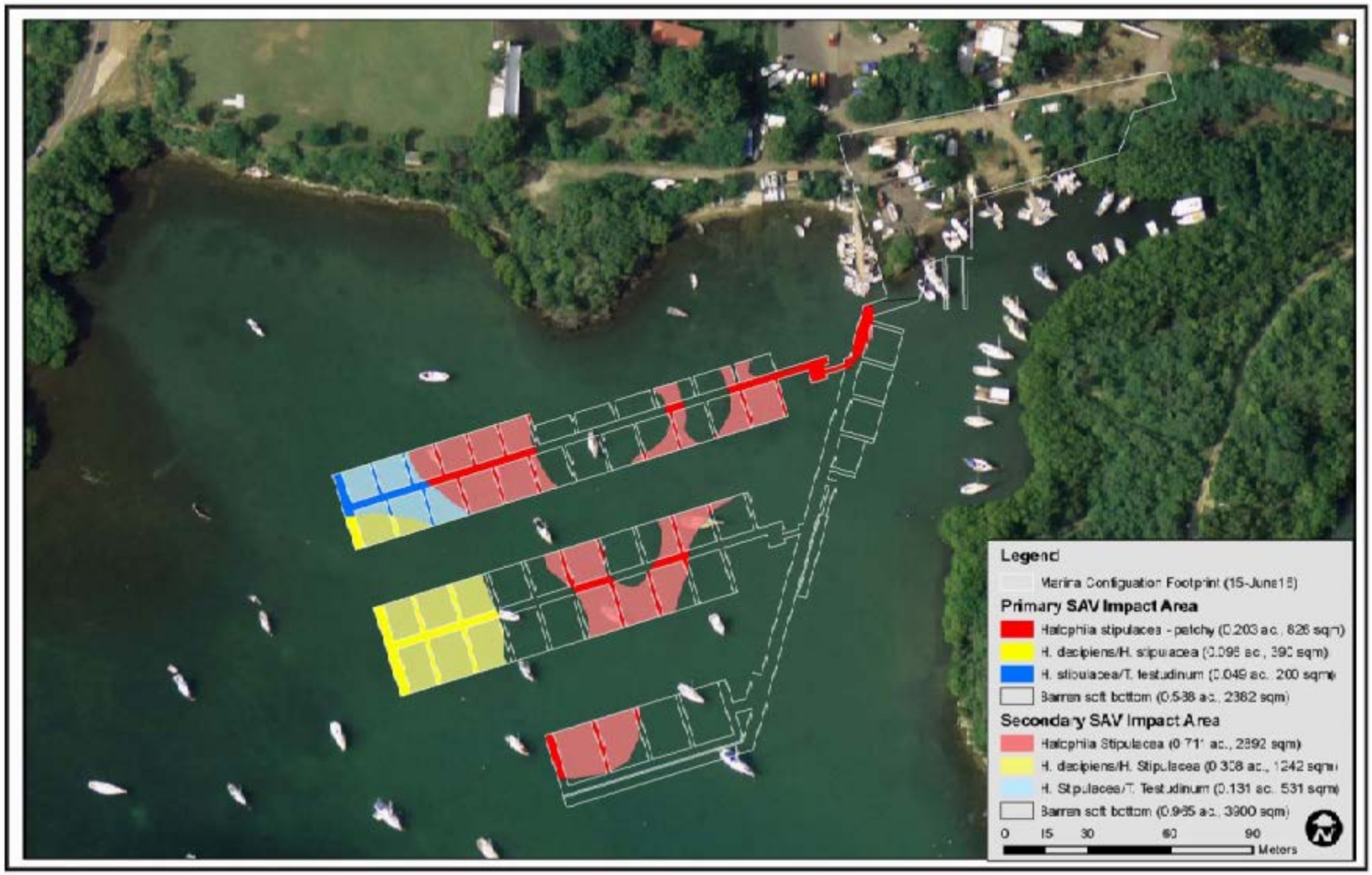
*Recent research has shown that the endangered Green Sea Turtle will graze on Halophila stipulacea and although it is less desirable than native turtle grass, it nonetheless provides habitat for these turtles.*

*In their comment letter USFWS stated "It is our experience that once sea grasses in an area start to die back due to shading, suspended sediments may increase and water transparency may decrease, this effect can extend beyond the construction footprint of the marina into surrounding marine habitats causing additional indirect damage to benthic habitats (Schafer 2008)." The letter also stated "We believe that project impacts should be based on the project footprint rather than individual piles and docks." We strongly concur with these comments.*

*The illustration provided by the applicant restricted consideration of benthic impacts to the areas directly beneath the fixed dock structures and slips. The illustration below includes the entire in-water project footprint and the applicant's sea grass map for that area:*




*Based on this comparison of the sea grass map with the project footprint, we conservatively estimate the impact on sea grasses within the entire project footprint at roughly 5 acres or approximately ten times the area estimated by the applicant.*


Legend
Marina Configuration Footprint (15-June18)
Primary SAV Impact Area
Halophila stipulacea - patchy (0.203 ac., 826 sqm)
H. decipiens/H. stipulacea (0.098 ac., 390 sqm)
H. stipulacea/T. testudinum (0.049 ac., 200 sqm)
Barren soft bottom (0.538 ac., 2382 sqm)
Secondary SAV Impact Area
Halophila Stipulacea (0.71 ac., 2892 sqm)
H. decipiens/H. Stipulacea (0.308 ac., 1242 sqm)
H. Stipulacea/T. Testudinum (0.131 ac., 531 sqm)
Barren soft bottom (0.985 ac., 3900 sqm)
0 15 30 60 90
Meters

***Although the EAR described those areas as barren soft-bottom habitat, information provided by SCB evidence that seagrass and other SAV are located within the proposed dredge and fill areas. The analysis of potential impacts to seagrass and benthic habitats should also consider the draft, movement and anchoring of construction vessels and barges. In addition, the analysis should consider the potential effects of the operation of the marina, including draft considerations for propeller wash and turbidity generated by the vessels using the facility, as well as service barges such as the fuel barge.***

We respectfully disagree. Scientific divers carefully surveyed these areas with belt transects and with presence/absence surveys. NO living seagrasses were found in areas denoted as barren-bottom within the project area.

> *The information and photographs provided by SCB did not claim to have identified sea grasses in the dredge and fill area. The photographs provided showed presence of healthy areas of SAV, predominantly various forms of macroalgae. Furthermore, the illustration of transect lines provided by the applicant clearly does not include the dredge area.*

Only shallow draft vessels and barges will use the Marina to avoid impact with seagrasses. At present, based on BMP's, we do not anticipate any secondary, construction related impacts or injuries to seagrasses or benthic habitats (with the exception of those already noted in the EAR) within the project vicinity

Water depth is sufficient in these areas to avoid these impacts.

> *The marina is designed for vessels up to 65 feet in length. We estimate the draft of these vessels to be as much as five feet, including propellers. The water depth in the marina ranges from 4 feet up to 10 feet, with the majority of the marina in depths of 6 to 8 feet. We believe these shallow depths will result in considerable damage to the benthic habitat throughout the marina due to propeller wash and occasional groundings. The applicant has also, in this set of comments, indicated intent to accommodate "a few vessels" of up to 150 feet in length. Vessels of this size cannot be considered "shallow draft vessels."*

***Furthermore, the analysis should consider the proposed location for the reverse osmosis and waste water treatment plants intake or outfall pipelines and their potential effects on seagrass beds. Similarly, the analysis should include the proposed site to relocate the existing dinghy dock and the existing mooring buoys and boats, as well as of any related impacts to benthic habitats.***

There will be no R/O or WWTP effluent into the Bay. The existing dinghy will remain.

*Based on the applicant's own drawings and descriptions of construction procedures, we fail to see how the existing dinghy dock can remain in safe operation during the construction period. The construction barges, the turbidity barriers, and other in-water activities will almost certainly render the existing dinghy dock unusable. The applicant has previously stated that an alternative location and facility will be provided during construction. We do not understand why this is no longer the case.*

The Department of Planning & Natural Resources has stated that if the marina is approved, each of the moored/anchored boats will have to come to DPNR to request a new location. It is not theirs or Sirius Marina's obligation to provide an alternate site. The final determination rests with boat owners and DPNR as it is important to realize is the submerged lands belong to the People of the Virgin Islands, administered by the VI Government. Everyone is given a lease.

***As part of this revised analysis we ask that you please evaluate and discuss the practicability of potential design modifications or reductions in the size of the proposed project footprint (including the proposed structures and dredge area, as well as construction and operation footprints), which could avoid and minimize the potential adverse effects to seagrasses and benthic habitats.***

The Project footprint has been reduced. The service building is smaller, the bulkhead moved back and the Boat ramp moved to the west. The amount of dredging has been reduced from 34,125 sf to 17,500 sf or a reduction of 48%.

*We do not believe that the applicant has done a thorough job of evaluating and discussing the practicability of potential design modifications in order to avoid and minimize the habitat impacts. We have suggested that a marina based on moorings and an access dock with pumpout could fulfill the basic purpose of the project with substantially less impact on aquatic resources. We have never seen an analysis of this alternative. Furthermore, the current response is larger in scope than the prior application in at least two respects: the number of wet slips has increased (based on the Nov 2015 drawings versus the current drawings), and the intent to accommodate 150' vessels has been raised in this submission. These are increases in size and scope, not decreases.*

***In addition, please note that via letter dated January 8, 2016 (copy provided in attached disk), NMFS - Habitat Conservation Division (NMFS-HCD) provided Essential Fish Habitat Conservation Recommendations for your proposed project, particularly to avoid and minimize impacts to seagrass. Please review NMFS-HCD communication and provide adequate responses to their concerns and requests. This information will be necessary to complete our required interagency consultation pursuant to the Magnuson-Stevens Act.***

We are presently in the throes of completing the Essential Fish Habitat study for NOAA-NMFS-HCD. Accordingly, we will provide of final responses to their concerns and requests when completed.

The Essential Fish Habitat (EFH) Assessment for potential impacts to nearshore and hardbottom habitat associated with proposed construction of an approximate 92-wet-slip marina at Coral Bay, St. John, U.S. Virgin Islands.

Avoidance and minimization of effects associated with the project have been achieved through revised design by Moffatt & Nichol. The number of wet slips is 92, and the slip structure has been pulled back toward the north shore in order to avoid unnecessary impacts to seagrass beds. The proposed facility will incorporate the following See marina Layout below.:

- 92 wet slips for vessels from 35 to 70 feet in length
- Boat Service Yard
- Septic pump-out facilities
- Fuel facilities
- Use of wave-attenuation panels
- Flexibility to accommodate a few vessels up to 150 feet
- Accommodations for transient boaters and dinghies
- Retains marine service capability
- Public boat ramp and navigational channel to the bay
- Dock master building
- Parking

*The fact that the docks have been moved closer to the north shore of Coral Bay is troubling. This move places the entire structure in shallower water and further constricts the water between the marina and the shoreline. We have commented on this change elsewhere in these notes.*

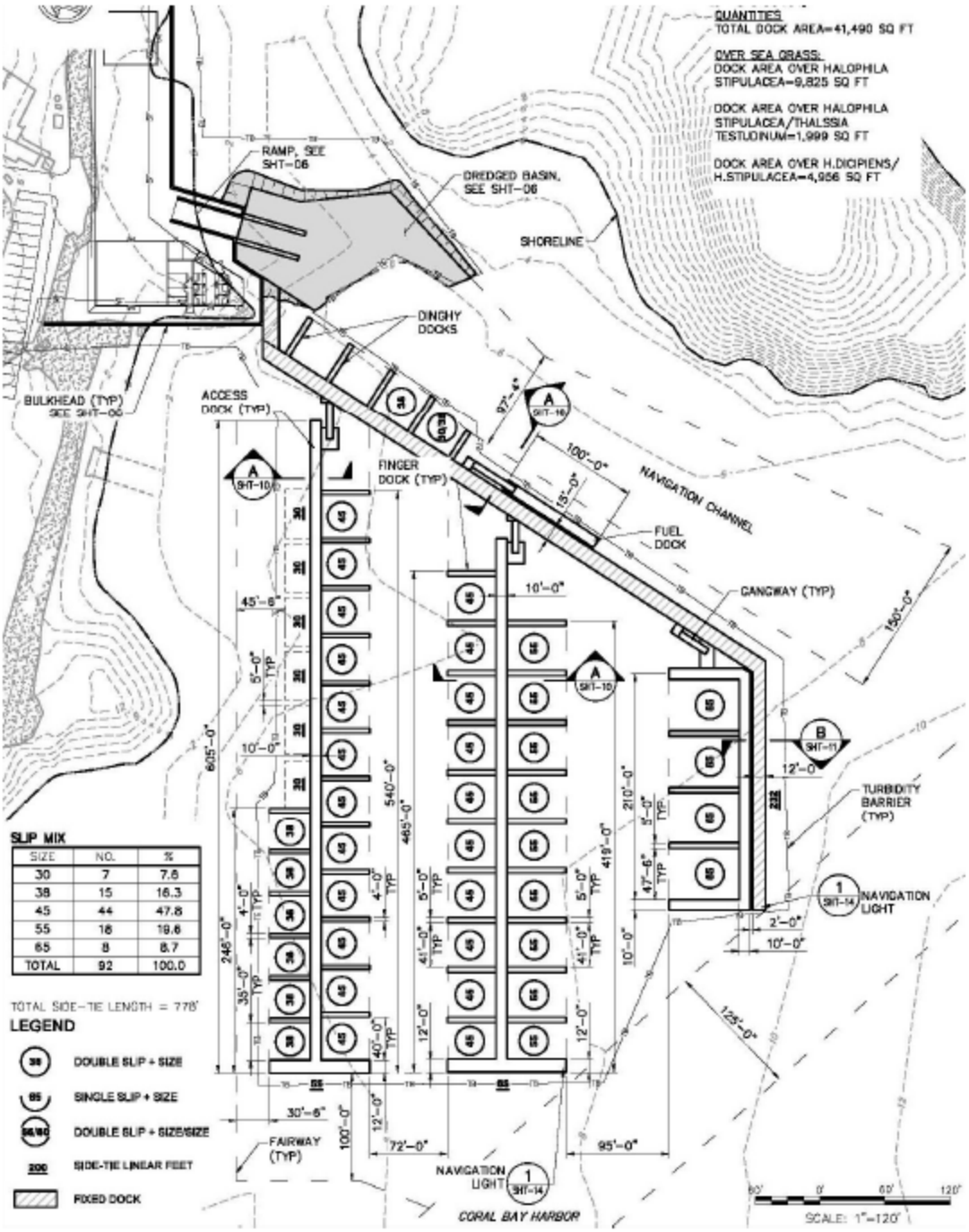
*The list of project features, above, includes items that are not shown in sufficient detail for comment, or not shown at all, in the revised drawings submitted with the applicant's response. For example, the "Parking" is not described in terms of size, construction, storm water management, and in fact it isn't clear if it is even in the current plans (e.g. it doesn't fully appear in the "Marina Layout" drawing below, only as a partial set of lines).*

*The accommodation for "a few vessels up to 150 feet" is a major concern, inasmuch as the very shallow waters in this portion of Coral Bay could almost certainly not support the draft of vessels of this size. If the applicant intends to allow 150 foot vessels to utilize the marina then an analysis of their draft requirements, maneuvering requirements, and other aspects of their operation needs to be provided for public comment.* ***Furthermore, we do not believe that the applicant has previously stated their intent to accommodate 150 foot vessels, and this is therefore a significant expansion in the scope and impact of the project, and a further reason that a public hearing should be required on the changed plans.***

Most of the land-side facilities would be constructed on previously developed terrain, but filling a small area of wetlands would also be unavoidable in order to site the facilities in an area with the least impact while maximizing the efficiency and use of the facility and available real estate. Along the shoreline, a mangrove fringe is present,

which must be filled to provide access between the various sections of the facility (buildings, docks, etc.). Other impacts to EFH include direct removal of both seagrasses and unvegetated soft-bottom habitat, and indirect effects on seagrasses due to shading due to docks and vessels. Indirect effects to the water column may include temporary increases in turbidity due to dredging the small navigational channel extending from the boat ramp to the bay

> *The applicant has not mentioned direct and indirect effects on submerged aquatic vegetation (SAV) other than seagrasses. We have documented the presence of SAV, including macroalgae, in portions of the dredge zone.*




Marina Layout

Most of the land-side facilities would be constructed on previously developed terrain, but filling a small area of wetlands would also be unavoidable in order to site the facilities in an area with the least impact while maximizing the efficiency and use of the facility and available real estate. Along the shoreline, a mangrove fringe is present, which must be filled to provide access between the various sections of the facility (buildings, docks, etc.). Other impacts to EFH include direct removal of both seagrasses

and unvegetated soft-bottom habitat, and indirect effects on seagrasses due to shading due to docks and vessels. Indirect effects to the water column may include temporary increases in turbidity due to dredging the small navigational channel extending from the boat ramp to the bay.

As noted above, we have already used significant avoidance and minimization measures to keep the footprint of the proposed marina over areas of “barren-bottom” or invasive/exotic seagrasses.

*The portion of Coral Bay Harbor in which the proposed marina is located is an area rich in number and variety of marine species. The applicant has not provided any quantitative or other scientific assessment of the impacts on these species and their habitats stemming from the construction and ongoing operation of the marina. The impacts which must be assessed include:*

- *destruction of habitat from dredging,*
- *destruction of habitat from filling of open waters and wetlands,*
- *destruction of habitat from isolation of adjoining wetlands,*
- *impacts from fuel spills and ongoing release of hydrocarbons (oil and gasoline) from the fuel dock, from the motor vessels (bilge and exhaust),*
- *impacts from hydrocarbon contamination in stormwater runoff from the parking area,*
- *turbidity from construction and ongoing turbidity from propeller wash in the shallow waters,*
- *solid waste intentionally and inadvertently thrown overboard,*
- *runoff from the "concrete pad" constructed directly on the edge of the water,*
- *impact on nesting areas in the mangroves from night illumination*
- *impact on habitat and species from noise pollution*
- *impact on habitat and species from toxic marine effluents (e.g. ablative bottom paints)*

*There is little doubt that marinas, particularly in tropical regions, create widespread and permanent impacts to marine environments. Numerous scientific studies have documented these effects (e.g. in Benner Bay, St Thomas). This is why best practices dictate that marinas be constructed on barren sandy bottoms, not vegetated bottoms or hard bottoms colonized by corals.*

*The applicant has not provided a compelling argument for the need to dredge and fill, and in fact has not provided any argument that would be sufficient to justify these operations under the requirements of the Clean Water Act Section 404(b). The Corps cannot permit discharge of dredge or fill materials in WOTUS unless the applicant has demonstrated that there is not a Less Environmentally Damaging Practicable Alternative (LEDPA). The alternatives analysis and identification of the LEDPA must be performed in the context of the "Basic Purpose" and the "Overall Purpose" as defined by the Corps in the Public Notice. For this project the Corps defined the "Basic Purpose" as "Offshore Marina" which we have stated previously is, in our opinion, too limiting. We believe the correct statement of Basic Purpose should be "Recreational Boating Water Access" which allows for alternatives that do not necessarily involve fixed slip marina construction. The Corps has defined the "Overall Purpose" as "Construct a private commercial*

*offshore marina with ancillary facilities in adjacent uplands in St. John, USVI". We believe the correct statement of Overall Purpose should not include "ancillary facilities" unless they are essential to achieving the Basic Purpose of the project.*

*Nevertheless, based upon the Corps' statement of Basic Purpose and Overall Purpose, there is nothing in the Basic Purpose that requires construction of a Boat Service Yard, or retail provisioning services, or a boat ramp, or a 30-slip dry stack garage. None of these facilities are required in order to fulfill the basic purpose of "Offshore Marina". None of these ancillary facilities are required for the successful operation of an offshore marina.*

*The applicant justifies the dredging in order to construct a channel to a boat ramp. However there has been a fully operational boat ramp in existence at the precise location proposed by the applicant for over a decade without ever having dredged that area. The dredging, presumably, is being proposed to allow larger boats to use the ramp. This is not a requirement of the basic or overall purpose of the project.*

*The installation of the bulkhead and filling of wetlands and open waters is even more concerning under the requirements of the Clean Water Act. The applicant justifies these activities not on the basis that they are required to fulfill the basic purpose, but solely on the basis of the applicants stated need for more dry land for optional amenities. The applicant states: "Most of the land-side facilities would be constructed on previously developed terrain, but* ***filling a small area of wetlands would also be unavoidable in order to site the facilities in an area with the least impact while maximizing the efficiency and use of the facility and available real estate****." This statement is categorically untrue: filling open water and wetlands cannot ever be considered a least impact approach, and in fact the Clean Water Act mandates the double rebuttable presumption whenever filling of wetlands (Special Aquatic Sites) are involved in a non water dependent project proposal. The retail shops, the dock master building, the boat garage, could all be situated slightly to the west of the proposed location, on existing high and dry land, without requiring any filling of wetlands and open waters. These lands are available to the applicant however they do not want to use them because they are intended for the future hotel and resort complex.*

*The Corps is required to reject this application under the Clean Water Act due to the unnecessary dredging and filling of open waters and wetlands which is unrelated to either the Basic Purpose or Overall Purpose of the project and is required solely for the convenience of the developer.*

***3. Existing mooring buoys and moored boats - part of your permit application acknowledges that a mooring field with more than 100 moored vessels, primarily private sailboats is located within Coral Harbor. Many of those boats and moorings are located within the footprint of the proposed marina and would have to be relocated prior to project construction. The Corps has not received any information describing the proposed plan and process for relocating the existing moorings and boats, including details about the coordination that***

***would be required with boat owners and the USVI- Department of Planning and Natural Resources (USVI-DPNR). Likewise, we have not received a description of the proposed sites for relocating the moorings and boats, or an evaluation of the potential benthic habitat impacts of relocating the existing moorings and boats. Therefore, please provide this information in your response to this letter. In addition, please discuss the measures that would be implemented to avoid and minimize adverse effects to the present uses of the bay as a mooring area.***

Of the 100+ boats moored in Coral Bay only 23 have VI DPNR mooring permits. The Department of Planning & Natural Resources has stated that if the marina is approved, each of the affected moored/anchored boats will have to come to DPNR to request a new location. It is not DPNR's or Sirius Marina's obligation to provide an alternate site. The boat owners will have to provide a benthic survey of the area that they propose to set a mooring. The final determination rests with boat owners and DPNR.

Sirius Marina will provide DPNR approved boat mooring anchoring designs to all the permitted boat owners. Sirius Marine is prepared to work DPNR in their development of an overall mooring field.

*The applicant's statement that "of the 100+ boats moored in Coral Bay only 23 have VI DPNR mooring permits" is incorrect according to information available to us. I have spoken with the Commodore of the Coral Bay Yacht Club and she has stated her belief that around 80% of the 115 boats in Coral Bay Harbor have VI DPNR mooring permits.*

*However, regardless of the number, these boats will need to move to other locations outside of the multi-acre marina footprint. The Corps has requested an assessment of the potential benthic habitat impacts of the relocation of these vessels and the applicant has failed to respond to that request. This is clearly an indirect impact of the proposed marina and it is a requirement for the applicant to quantify and mitigate this impact, if any.*

***4. Navigation and recreation – Numerous communications received in response to our PN for your permit application expressed concerns regarding the potential impacts of the proposed marina to the existing navigation and recreation practices within Coral Harbor. Numerous commenters expressed that the proposed marina is too large for the needs of the existing boating community and that its large slips were designed to exclude the existing boaters with their small boats. Several commenters also indicated that the Kids and the Sea (KATS) boating education program for children would be forced to relocate and most likely not be able to continue operating within Coral Bay, because its current location would be occupied by the proposed marina. In addition, numerous commenters indicated that the removal of the existing dinghy dock and ramp, if not relocated or replaced, would create severe hardship to local boaters, as they would have no public access to the water during the construction of the proposed project. Numerous commenters also expressed that no information***

***has been provided regarding the impacts to local boaters and the general public related to additional costs for using the dinghy docks and the ramp that would be constructed as part of the proposed marina after eliminating the existing public ones. Furthermore, commenters expressed that the construction of the proposed marina would limit and obstruct recreational boating and navigation within the bay, and would prevent public access to the shoreline. We request that you please address these concerns and discuss which measures would be implemented to prevent adverse effects on the existing navigation and recreational practices that take place within Coral Bay, as well as on the public's general right of navigation.***

The Sirius Marina design is based on a careful study of the market, and is well-suited for the needs of the local boating public and members of the community. The marina is planned to include 92 boat slips, and about half are expected to be filled by boats already in the market. Other residents of St. John who desire a boat; but, who do not wish to leave it at anchor or to commute to a St. Thomas marina are expected join us. This will leave perhaps 30 slips for transient boaters who frequent the waters, particularly during the busy winter season, and who will contribute significantly to the local economy.

Market studies show that many boats in the local market are below 40 feet, and nearly one third of the marina wet slips target this market segment. Numerous local sail and fishing charter boats, as well as visiting yachts, tend to be in the range of 40 to 55 feet, and about 60% of the Sirius boat slips target this market segment. The remainder of the slips will accommodate larger charter boats that we intend to attract back to the USVI from the BVI.

> *The applicant references "a careful study of the market" as explanation and justification for the sizing parameters of the proposed project. We respectfully request an opportunity to review and comment on this study, since it does not agree with local expert knowledge of the demand.*

The existing boatyard, Coral Bay Marine Service, which has been a tenant of the church performing boat repairs for over 25 years, now occupies the site of the proposed marina, and will relocate their operation to the repair portion of the new facilities.

The Moravian Church is well known for its many educational programs and has a long history of supporting our youth. The church was instrumental in and has made available both storage and launching space for the Kids and the Sea (KATS) program at no cost for many years. Although the exact location on the site has not yet been identified in the preliminary drawings, as mentioned above, we will continue to accommodate this meaningful program.

The existing concrete dinghy dock provided by the church will remain in place for the continued use of boaters without charge. Additional space will be made available for visiting boaters to come ashore for buying provisions and to do other personal business. We do note, however, that some of the dinghies presently tied up to the dock

have not been moved in many months, and we may need to set reasonable time limits to make the dock space available to other boaters needs.

A modern new boat launching ramp is to be installed, replacing the existing concrete and mud ramp the church presently allows the local residents to use. In that use may, at times, be congested, due to space constraints, launching by the public may need to be scheduled by the marina Dock master.

An existing navigation channel presently extends north up the center of the bay to the concrete dinghy dock. This channel will remain essentially unchanged, curving slightly around the new pier.

Active Captain is a web-based charting system where all captains may provide input on local conditions, and is now used by majority of cruising yachts to better understand ports of call prior to arrival. The preferred channels through Coral Bay and areas to avoid, such as Lagoon Point, will be published with information we will assist in providing, and may be placed on electronic charts available on major manufacturer's chartplotters in the near future. Presently, comments on the Active Captain charts for Coral Bay sometimes refer to the lack of information about anchorages, and that going ashore means tying to a line along the dinghy dock and wading ashore. Marina management is presently and will continue working with local agencies, such as DPNR, to identify preferred anchorage locations and help define and implement mooring procedures. This will greatly reduce the present scarring of the bottom and destruction of sea grasses caused by boats anchoring in the Bay. Further, the marina will offer a sanitary pump out station, and, assuming DPNR Environmental Enforcement Division mandates periodic pump outs for all vessels, this will assist in eliminating the sewage presently being dumped into the bay.

Majority of those who are presently anchored in or who frequent Coral Bay will visit the marina and will be educated upon their first arrival. Some of the boaters who utilize the many NPS moorings in Hurricane Hole are expected to also visit the marina at times to utilize its facilities and services. In its literature and signage, the marina will describe the preferred approaches to Coral Bay and the areas to avoid, as well as applicable rules and regulations, including that no personal watercraft, such as jet skis are allowed within the park. Approach headings from the sea to a prominent light mounted on the marina or to other visible landmarks will be given, with cautionary notes to remain in the preferred channel. Of particular importance will be to avoid Lagoon Point. We will endeavor to have this information published in United States Coast Pilot, in the Seventh Coast Guard District *Local Notice to Mariners*, and to have it published on the Active Captain charts. **https://activecaptain.com/**

> *Although the applicant acknowledges that jet skis are not allowed within the park, the applicant's Environmental Assessment Report (EAR) specifically states that the marina will include a jet ski rental concession. The excerpt below from the EAR describes the anticipated marina concessions:*

| Services / Tenant Employees | |
|---|---|
| Service Yard | 4 |
| Yacht Maintenance | 2 |
| Dive Shop | 4 |
| Sail Charter | 6 |
| Boat Rental | 3 |
| Jet Ski Rental | 3 |
| Fishing Charter | 6 |
| Island Tours | 4 |
| Provisioning | 12 |
| **Total** | **44** |

*Not only do we note that the applicant is proposing rental of jet skis at the marina, but we also note that the total number of employees (44) is greater than the number that was used to estimate potable water and waste water needs (15).*

*The applicant may not be aware, but the lagoon inside the fringing reef at Lagoon Point is a known, documented habitat for live bearing lemon sharks and other vulnerable shark species. Over the past few years there have been at least two boat groundings on the fringing reef at Lagoon Point. Fortunately neither of them resulted in fuel spills. The presence of large numbers of high speed power boats exiting and returning to Coral Bay greatly increases the risks of a serious accident on this dangerous reef, with resulting fuel spills and environmental damage. This risk is not, in our opinion, offset by literature and signage.*

If the marina development meets the approval of the Army Corps of Engineers and Virgin Island Government approvals, it is our intention and goal to enhance the ecotourism, environment, boating safety, economy, employment possibilities and the overall welfare of Coral Bay and St. John, USVI.

*We find it very surprising that this applicant makes the claim that their "intention and goal (is) to enhance the ecotourism, (and) environment ... of Coral Bay." The most authoritative sources on ecotourism in Coral Bay are the National Park Service, and the hundreds of vacation villa owners and small businesses who have been responsible for creating and growing the ecotourism market over the past several decades. Not a single one of these authorities has made any statement about any positive effects on ecotourism from this project. In fact, they have all said that it would be highly detrimental to the ecotourism product and visitor experience.*

*It is also surprising that the applicant claims that the goal is to enhance the environment, when every federal agency responsible for environmental protection (NMFS, NOAA, USFWS, EPA) have expressed significant concerns about the damage to the environment that the construction and operation of the marina would entail. Permitting cannot be based on good "intentions" and "goals" but must be based on science and analysis.*

We believe our project is properly located, well suited in size, facilities, services offered and appropriate for Coral Bay and respectfully submit our application and responses for your consideration.

***5. Water quality, flow and circulation - Please note that the Monitoring Plan for Water Quality submitted with your permit application is too conceptual. More precise information is needed regarding proposed location of monitoring stations, as well as thresholds and contingencies for environmental monitoring of benthic organisms and sediment loading. In addition, numerous commenters to the PN expressed concerns with the potential effects that the proposed marina could have on the water flow, circulation patterns and water quality within Coral Harbor, particularly considering that the proposed marina would be constructed in an area of limited natural water circulation. Changes in water circulation could lead to deterioration of the water quality and marine habitats within the Coral Bay. We request that you please provide an assessment of these potential adverse effects of the proposed project. Furthermore, please discuss the measures that would be implemented to adequately mitigate these adverse effects. In this regard, we ask that you please evaluate potential design modifications of the proposed docking structures, which could contribute to avoid and minimize these potential adverse effects. Furthermore, please keep our office informed of the status of your application for a U.S. Virgin Islands Territorial Pollutant Discharge Elimination System (TPDES) Permit from the USVI-DPNR for the proposed marina.***

In order to ensure that water quality is maintained throughout construction a water quality monitoring program will be implemented. This plan is designed to assess turbidity and address the efficacy of sedimentation control during dredging activities. The purpose of this monitoring plan is to document any degradation in water quality or in the health of the benthic community and detail a course of action that can be immediately implemented to abate that degradation if significant changes are observed. This plan will also monitor the benthic community adjacent to and within the potential impact area of the proposed project.

A marina flushing study was conducted and is discussed in the attached coastal engineering report. Marina flushing is defined as the length of time required to exchange a volume of water equivalent to the marina basin volume with the ambient body of water. A well flushed marina typically signifies good water quality. The U.S. Army Corps of Engineers Coastal Engineering Manual (USACE-CEM) provides marina flushing guidelines and examples which suggest that a flushing time of 2-4 days is acceptable, 4- 10 days is marginal, and greater than 10 days is unacceptable. The flushing time of the proposed marina facility was analyzed using the hydrodynamic module (HD) of MIKE21 suite of computer models. The tidal currents represent the primary hydrodynamic forces. Wind and wave induced currents, which may enhance mixing and improve flushing, were excluded from the model setup to present a more conservative flushing estimate. The model results indicate that the average residual constituent concentration is less than 37% after 24 hours, and falls below 10% level

after 96 hours. The proposed marina site meets the flushing criteria established by USACE.

*The applicant has applied a marina flushing guideline of residual concentration below 10% after 96 hours, and less than 37% after 24 hours. However these levels are not the levels recommended for regions where the tidal range is less than 1 meter, such as the Caribbean. The EPA publication "Management Measures for Marinas and Recreational Boating" includes the following statement regarding marina flushing: "In areas where tidal ranges do not exceed 1 meter, as in the southeastern United States, a flushing reduction (the amount of a conservative substance that is flushed from the basin) of 90 percent over a 24-hour period has been recommended."*

*The EPA recommendation is incorporated into the US Virgin Islands Department of Planning and Natural Resources (DPNR) marina guidelines. The DPNR publication "Supplemental EAR Guidelines for Marina Development" includes the following statement regarding flushing rates: "In areas where tidal ranges do not exceed 1 meter, such as the Caribbean, a flushing reduction (the amount of a conservative substance that is flushed from the basin) of 90 percent over a 24-hour period is recommended." Clearly the VIDPNR has adopted, verbatim, the EPA guidelines for marina flushing.*

*The results of the model used by the applicant's consultant, Moffat and Nichols, indicates that the chosen location for the Sirius Marina has a flushing reduction of 90 percent after 96 hours, which is four times as long as the EPA and DPNR recommendation.*

*The applicant references a U.S. Army Corps of Engineers Coastal Engineering Manual (USACE-CEM) and states that it provides guidelines "which suggest that a flushing time of 2-4 days is acceptable, 4- 10 days is marginal, and greater than 10 days is unacceptable." We have examined that document and cannot find any guidelines contained within it for marina flushing applicable to the low tidal range conditions of the Caribbean. It appears as though the applicant is "cherry-picking" parameters which suit their purposes, rather than using the clear parameters provided by the local regulatory agency, VI DPNR.*

*Furthermore, local knowledge confirms that the chosen site for the Sirius Marina experiences some of the lowest flushing rates in all of Coral Bay Harbor. This was evidenced during the sargassum seaweed invasion of 2015. The dissolved oxygen level at the northern end of the harbor, in the vicinity of the existing dinghy dock, became so low that there was a fish die-off event. This was seen in isolated locations elsewhere in Coral Bay but was most pronounced precisely where the flushing rates were the lowest. The article below covered this event:*

# Fish Kill in Coral Bay

BY LYNDA LOHR — OCTOBER 2, 2015

*Fish and eel in the water by the Coral Bay dinghy dock (Robert Charleston photo).*

Fish started dying Thursday in Coral Bay, and it's raising a lot of questions. So far, no one has any answers.

"Is it tied to the sargassum?" Alan Mohler, who owns Coral Bay Marine, questioned Friday as he pointed out dead fish lying on the harbor floor, in the mangroves and in the sargassum weed along the shore.

At 1:30 p.m. Friday, the tide had cleared away many of the fish that Mohler said were piled up in the morning, but there were still plenty to see.

Water Quality Monitoring

Prior to the start of construction, a baseline of water quality conditions will be established. A total of no less than six (6) sampling locations will be established within the project area and an additional six (6) control sampling sites. The monitoring samples will be placed in the areas most likely to be impacted by the final approved permitted project. The control sites will be placed in areas which should be exposed to essentially the same ambient conditions, but should not be directly impacted (within the footprint of) by the marina project.

At each site the turbidity expressed as NTU's will be sampled. Samples will be taken on a weekly basis for 2 months prior to the start of construction. Baseline data will be used to compare with data collected during the construction project to help assess whether readings are a result of the construction project or are due to natural variability related to local conditions. A final sample shall be taken at six months after construction has been completed. All monitoring will be established based upon requirements and water quality monitoring standards as set forth by the USVI -DPNR.

Physical oceanographic parameters within Coral Bay will not be adversely impacted by the small dock facility tucked in the northeast corner of the Bay.

*Regarding deterioration of the water quality and marine habitats, the Corps specifically requested the applicant to "discuss the measures that would be implemented to adequately mitigate these adverse effects ... please evaluate potential design modifications of the proposed*

*docking structures, which could contribute to avoid and minimize these potential adverse effects."*

*The applicant's response does not discuss any measures to mitigate adverse effects on water quality. They do discuss a monitoring program, but monitoring alone does not provide mitigation.*

*Furthermore, the applicant has not provided any response to the Corps' request to evaluate design modifications to the proposed docking structures to address the potential adverse effects. We believe that use of moorings, as opposed to fixed dock structures attached to pilings, is a design modification which must be analyzed as it has been concluded elsewhere in the USVI (e.g. within the National Park) that moorings are far less damaging to the aquatic environment than fixed docks.*

This area of the bay is currently one of the most polluted water bodies in all of the USVI. As such, this project, through implementation of pump-outs, will greatly enhance NOT diminish water quality within Coral Bay – especially in the immediate vicinity of the project footprint. As previously noted in the EAR while" there are dense seagrass beds in the shallow, well flushed areas on the westernmost margins of the bay; these seagrasses diminish as ones moves east due to a decrease in water clarity (turbidity) caused by suspended sediments, high nutrients levels and high levels of Chlorophyll A. This poor water clarity is exacerbated by poor circulation in the northern and northeastern most portions of the bay."

*The applicant's claim that "this area of the bay is currently one of the most polluted water bodies in all of the USVI" is incorrect and not supported by any data or analysis. It is a self-serving conclusory statement.*

*The applicant's statement in the final sentence above – "poor water quality is exacerbated by poor circulation in the northern and northeastern most portions of the bay" – is in direct contradiction to the earlier assertion that there is adequate flushing in this location.*

The Project is undergoing CZM evaluation by the Department of Planning & Natural Resources. Upon their approval of the Project, A Water Quality Certification and a TPDES Permit will be filed for and obtained. Copies will be submitted to the ACE upon receipt.

*Under VI law, a Water Quality Certificate is required in order to obtain CZM approval, so the applicant's statement that the WQC will be "filed for and obtained" subsequent to approval of the project, is an incorrect statement of the local regulatory process.*

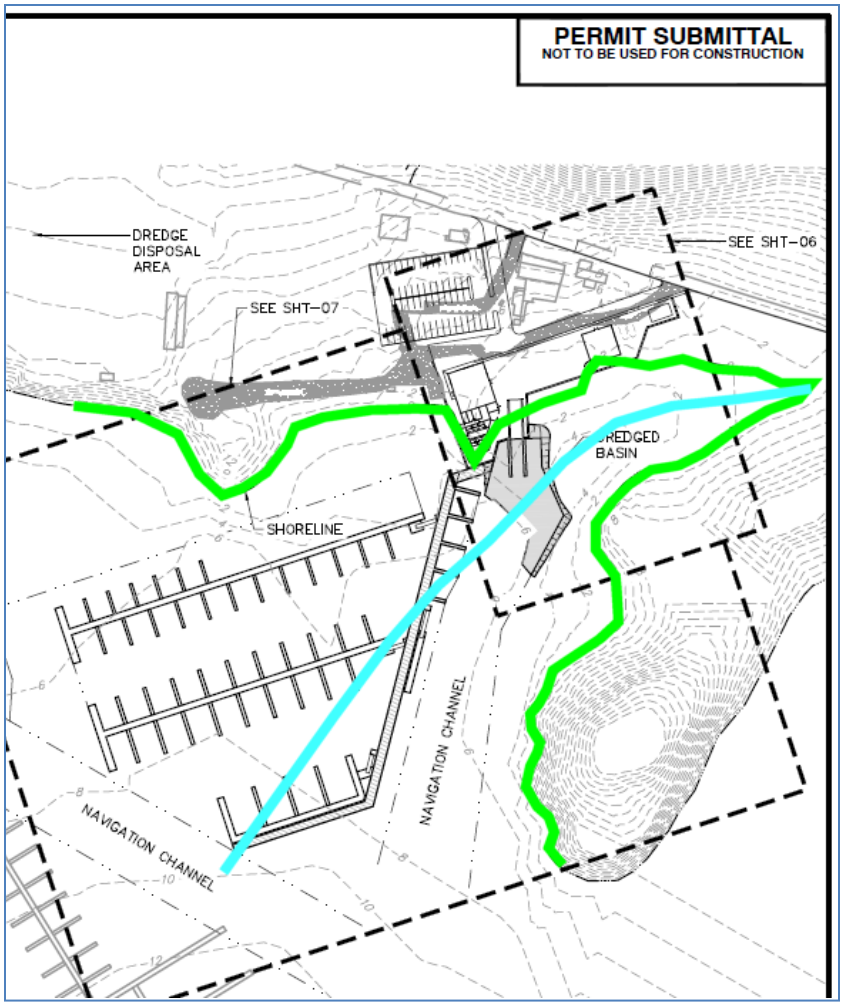
***6. Property ownership and riparian rights – Several commenters to our PN expressed that the size and layout of the proposed marina would interfere with the ability of adjacent riparian property owners to access the navigable waters of***

***Coral Bay. Please see the comments provided in this regard by SCB in their submittal dated January 24, 2016, and by Camille and Allegra Kean via e-mail dated January 25, 2016. We request that you please provide a response to these concerns, including an evaluation of the potential effects of the proposed marina on the riparian rights of adjacent property owners. The evaluation should consider potential design modifications or reductions in the size of the proposed docking structures, which could contribute to avoid and minimize these potential adverse effects.***

The littoral rights of neighboring coastal land owners are not impacted by the proposed development of the land owned by the Moravian Church. Usher Cay, which is the adjacent property, has a 125' navigation channel between Ushers Cay and the closest dock. Usher Cay has full access to the sea with two-third beyond Marina and has unfettered access.

When dealing with a cove or bay, subject to local law, the accepted method of respecting the coastal land owners' respective littoral rights of access to the shore, the right to construct a pier out to navigable water, and equitable access to the line of deep water is to proceed from the point at which the property boundary meets the shore toward the line of navigable water. The direction of the upland property boundary lines before they reach the shore are disregarded for this purpose. In this case, proceeding from the eastern and western boundary points on the shore toward the line of deep water creates a sizeable area, in which the entire proposed development is situated. Neither the littoral property owner to the east, nor the littoral property owner to the west suffer any encroachment into their area of littoral rights based upon the proposed development. Moreover, the proposed development is of a modest size such that it does not encroach upon or threaten the littoral rights of property owners on the opposite side of the bay.

> *The applicant has offered an explanation of littoral rights of shoreline property owners which is not applicable to the irregular shoreline at this part of the harbor. Where an inlet exists, for example the "creek" at the northeast corner of the harbor, the equitable distribution of littoral rights requires that the water body be divided according to the "thread of the body of water", i.e. the central line of the inlet. The illustration below shows the existing shoreline in green, and the central line of the inlet in turquoise. The equitable distribution of the inlet between the owners on the northern shore and the owners on Usher Cay is based on the central line. You will note that significant elements of the marina structures cross over this line and infringe upon the rights of the Usher Cay land owners.*




*We are particularly concerned about the dredging zone, which extends at least 60 feet into the littoral zone of the Usher Cay property. The shoreline in this area is a dense mangrove and a well documented roosting area for resident and migratory birds. The applicant should provide an explanation why they believe their littoral rights include dredging across the mid-line of the creek and construction of the main pier within the littoral rights area of the Usher Cay owners. The explanation involving direction of upland property lines does not address this situation, and even if it were applied, then it needs to be applied to all of the shoreline property owners, not solely the Moravian Conference. The upland property lines of the Usher Cay parcel extend deep into the area being "claimed" by Sirius for their marina.*

***7. Ambient and underwater noise - Numerous commenters to our PN expressed concerns with the potential noise impacts of the proposed project, particularly in relation to pile driving during the construction of the docking structures. The EAR submitted with the permit application indicates that one of the proposed measures to minimize noise impacts during project construction is to use vibratory hammers to drive piles wherever technically feasible. However, no evaluation of the technical feasibility of using vibratory hammers, such as***

***geotechnical data, was provided. Therefore, the Corps cannot determine the extent in which this technique would be utilized and its actual effects on minimizing noise related impacts. In order to fully evaluate the potential effects of the proposed project regarding ambient and underwater noise levels, a more detailed description of the actual construction techniques that would be utilized must be provided, including appropriate technical data supporting its proposed use, their expected effects in terms of generation of ambient and underwater noise, and the specific proposed measures to minimize those potential adverse effects. Please include this information in your response to this letter. Please note that via e-mail dated January 5, 2016 (copy provided in attached disk) NFMS - Protected Resources Division (NMFS-PRD) requested submittal of additional information necessary to evaluate the proposed project potential acoustic impacts to Federally protected species, in particular to sea turtles. Please provide the information requested by NMFS-PRD in your response to this letter. This information will be necessary to complete the required interagency consultation procedures pursuant to Section 7 of the ESA.***

## Acoustic Minimization and Mitigation Plan

Sound in water moves four times faster than in air, and attenuation and dissipation of that sound is lower in water than air. When an in-water sound is generated, a pulse is created that radiates out from the source. Geotechnical conditions (e.g. substrate density) and ocean conditions (e.g. surface condition, current strength, depth of water, salinity, suspended solids in water column) affect the propagation and the attenuation of in-water sound. Attenuation depends on both the frequency and distance travelled, in that as both increase, attenuation increases (Richardson et al. 1995). Sound typically dissipates more rapidly in shallow, turbid waters over soft substrates (the conditions presently encountered in Coral Bay).

Underwater sound in the marine environment is generated by a broad range of sources, both natural and human (anthropogenic). Open ocean ambient sound has been recorded between 74 and 100 dB off the coast of central California (Heathershaw et al. 2001). Ambient noise levels for other water bodies based on surveys generally follows in this range. Based on deep-water studies in the Northeastern Pacific, low-frequency background sound has doubled each decade for the past forty years as a result of increased commercial shipping (Andrew et al. 2002, McDonald et al. 2006) resulting in a 15 to 20 dB increase in ambient conditions compared to preindustrial levels. Table 1 identifies ambient underwater sound levels at various open water and coastal water locations.

## Table 1 - Ambient Noise Levels (RMS refers to rate-mean-square)

> *The table (Table 1) appears to be missing. RMS refers to "root mean square" not "rate-mean-square".*

Based on the above it can be predicted that Coral Harbor in Coral Bay would have a dBPEAK of somewhere below 80-87 dBpeak range based on the light commercial and recreational boat traffic observed in the project vicinity.

*Even though the data to support this conclusion is apparently missing (Table 1) we believe that it would not be appropriate to utilize data from the Northeastern Pacific and Central California coasts to estimate ambient noise levels in Coral Bay Harbor. As the applicant indicates, the noise levels used in the analysis stem from increased commercial shipping, which obviously is not a factor in Coral Bay. However without the table we cannot fully evaluate the applicant's conclusions. We do note, however, that there is presently no "light commercial" motorboat traffic in Coral Bay (unless the occasional motorboat charter is considered in this category).*

## Potential Impacts

Pile driving has been studied for its impact on noise in the marine environment and its residents (Fish, marine mammals, etc.). Underwater noise from impact pile driving is impulsive in nature and the sounds are created by the pile and the substrate it strikes. Research has shown how to reduce noise from pile driving. Creating a physical barrier is an effective method to reduce the noise between 15-23dB (Peak). (Spence et al, 2007). One such method is the use of bubble curtains. To be effective a bubble curtain has to completely surround the pile (or area in which the noise is being created) through the entire water column.

US Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration's (NOAA's) National Marine Fisheries Service (NMFS), have developed threshold values, values that elicit some response from a target species, for making effect determinations for Endangered Species Act (ESA) listed species as follows:

- Detectability threshold (where the noise is detectable, but reactions are not observable).
- Alert and disturbance threshold (alert is where the noise has been identified by the target species, interest is shown; disturbance is where the target species shows avoidance of the noise by hiding, moving, or postponing feeding).
- Harassment/injury threshold (where the target species is actually injured).

NMFS's current thresholds for impulse noises (ex. impact pile driving or in our case rock breaking) and non-impulse noises (ex. vibratory pile driving, dredging, etc.) for marine mammals are listed in the table below.

Table 2. Thresholds for Impulse & Non-Impulse Noises for Marine Mammals

*The table (Table 2) appears to be missing.*

Based on recommendations of the Fisheries Hydroacoustic Work Group (FHWG) in June of 2008, the current sound thresholds from impulse noises (such as pile driving) that cause injury to fish are:

- 206 dBPEAK
- 187 dB cSELfor fish > 2 grams
- 183 dB cSEL for fish < 2 grams

The in-water sound energy from pile driving occurs at lower frequencies between 100 Hz and 1 kHz. Typical sound levels from a single strike on a pile or hammer can range from 208 dBPEAK to 220 dBPEAK (Reyff 2003). The in-water sound is affected by hammer equipment and material (steel), the size of the hammer, the geotechnical conditions (e.g. driving resistances), and the water depth. This level is within the range of NOAA's predicted injury to whales and dolphins and injury to fish. Vibratory hammer activities should be below that range. The threshold for behavioral impacts for all fish is 150 dBRMS (FHWG 2008). The designation cSEL indicates the "sound exposure level in octave C".

> *The applicant appears to be acknowledging that the sound level resulting from pile driving (208 to 220 dBPEAK) is injurious and causes behavioral impacts and/or injury for all fish and marine mammals.*

Proposed Minimization Methods

All three federal rare and endangered sea turtle species are known to occur in the offshore waters of St. John and could be found within the project area. These include: hawksbill (Eretmochelys imbricata), leatherbacks (Dermochelys coriacea) and green turtles (Chelonia mydas). Abundant foraging habitat for both hawksbill and green turtles occurs both within and immediately adjacent to the proposed project area. Accordingly, the following measures will be implemented to minimize noise impacts to protected species of sea turtles and marine mammals. It is not anticipated that the pile driving will result in direct injury to these species but it is probable that this could result in changes to their behavior if they were to come into in the area. It is possible that these species may be stressed by the noise. In order to minimize that impact to sea turtles and all other protected species, mitigation measures will be implemented to minimize the noise that will be created during pile driving activities.

To minimize in-water noise impacts, a vibratory hammer will be used to drive piles wherever feasible. Vibratory hammers are recommended by NOAA as that they have a lower acoustic impact. Based on this information if a vibratory hammer is used the sound created during construction should be no greater than 120 dB. This is below the threshold level at which injury occurs. Numerous methods of additional noise reduction have been reviewed and the most feasible methods will be the use of an in-water noise attenuation system (e.g. bubble curtain or similar performing system), will further reduce the in-water sounds produced by the hammer. These will be deployed in all areas of pile driving work to further attenuate underwater noise levels in the project

area. It is anticipated that this barrier will result in a reduction of noise of between 15 and 23 dB.

*The applicant has not provided any geotechnical data on the subsurface composition in the areas where pilings will be driven. No exploratory core samples have been taken to ascertain the presence of bedrock. Based on local knowledge from boaters who have placed ground tackle in this vicinity there are extensive areas, close to the surface of the seabed, of an extremely hard basaltic mineral locally known as "blue bitch." Not only will vibratory driving be ineffective in this material, but it is doubtful that standard pile driving will work in all areas. However without conducting a geological study of the subsurface strata we cannot know whether vibratory pile driving will be effective in any of the proposed pile locations.*

*Furthermore, the applicant proposes use of an in-water noise attenuation system, without specifying which system will be deployed and without providing any data on its efficacy under the conditions of Coral Bay Harbor. We cannot accept a generic statement that a system will be used in place of a specific description of what system and why it will be effective. It is puzzling that the applicant can predict noise attenuation of between 15 and 23 dB without knowing what they will be using.*

In order to determine the impact of the project and the effectiveness of the bubble curtain, a noise baseline will be established prior to all work using an Acoustic Sensor with a 10-meter underwater capability. Once the project begins sound measurements will be analyzed in and outside of the curtains and at distance from the pile driving activity. The distance at which the sound has sufficiently been attenuated will be determined. If the barriers are found to be effective in limiting the sound below that which results in injury to the species, they will be maintained throughout the project. If the curtains are found to be ineffective additional methods will be devised to abate the noise below the level at which they result in harm to the listed species.

*It is unacceptable that the applicant states they will try a noise attenuation system, and if it doesn't work they will try something else. What happens if nothing is effective given the substrate of Coral Bay harbor? Will the project stop at a partially completed state, or will it proceed with noise levels that are harmful to endangered species? Considerably more research must be done and data provided on the specific substrates of Coral Bay Harbor, the depth to bedrock, and the methods used to abate the acoustic energy to a level that isn't harmful to protected species.*

A baseline of existing noise will be established by taking readings at all water quality monitoring stations for one month prior to start of dredging. Readings will be taken during both periods where vessels are traversing the area as well as when there is limited activity. This data will be used to determine what the ambient noise is within the harbor.

Once the project starts and the distance at which the noise can cause potential injury to the animals is determined a knowledgeable monitor will monitor the potential impact area during all pile driving activity.

In addition, a 500-m safety zone shall be established around the project area for sea turtles and marine mammals. Trained observers will be used to visually monitor the safety zone for at least 30 minutes prior to beginning all noise creating in-water activities.

If at any time a sea turtle or marine mammal is observed in the safety zone or the zone at which noise is known to be injurious the operation will be shut down until the animal has left the safety zone on its own accord.

Observations for protected species will occur at least twice a day to maintain watch for animals in the area, and ensure the curtains are functioning properly. If at any time an animal is observed in the safety zone during the noise creating in-water activity, work shall cease until the animal has left the area of its own volition, or coordination with a DPNR representative has occurred, if the animal is injured.

*We do not believe that the plan described by the applicant for monitoring of endangered sea turtles during construction is feasible. Due to turbidity in the water column, turtles (which are often foraging on the seabed) are extremely difficult to see. They are only readily visible when they surface for air. Monitoring a multi-acre site twice a day will not provide adequate protection for these endangered species.*

Records will be maintained of all sea turtle and marine mammal sightings in the area, including date and time, weather conditions, species identification, approximate distance from the dredging area, direction and heading in relation to the dredging area, and behavioral observations. When animals are observed in the safety zone, additional information and corrective actions taken such as a shutdown of rock breaking/dredging equipment, duration of the shut-down, behavior of the animal, and time spent in the safety zone will be recorded. Reports will be provided to NMFS, USACE, and CZM on a monthly basis.

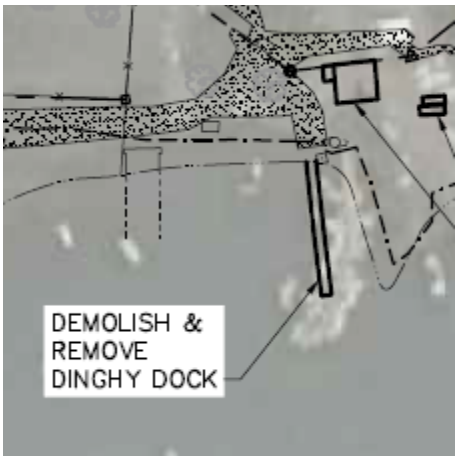
*In addition to the underwater noise impacts, we are concerned about ambient noise impacts which are accentuated due to the topography of the Coral Bay basin. The surrounding hillsides act as a natural amphitheater and amplify and reverberate loud noises. The applicant has made no statements about the anticipated impact of pile driving on the human environment, the terrestrial fauna, the aquatic birds (including nesting behaviors), and on the overall resident and visitor experience during construction.*

***8. Historic and cultural resources – The Phase I archaeological survey submitted with your permit application did not include an evaluation of the potential historical or cultural significance of the Coral Harbor dock, which presently serves as a dinghy dock and would be removed as part of the proposed project. According to information submitted by CBCC in response to our PN, this dock was constructed and has been in use since at least 1896 and probably much earlier. Therefore, we request that you please submit an evaluation of the potential eligibility of this dock for inclusion in the National Register of Historic***

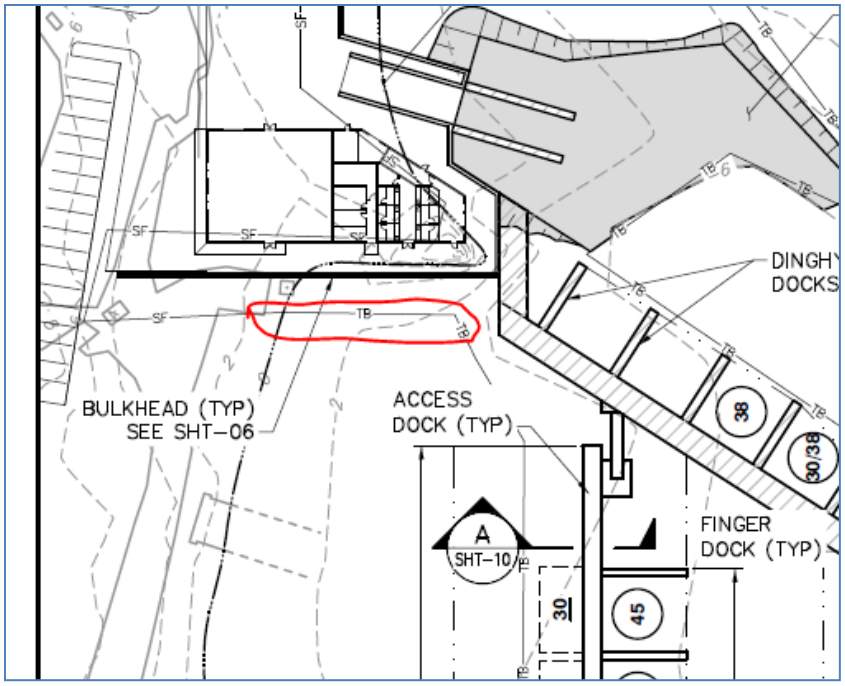
***Places (NRHP). This information will be necessary to complete our consultation with the Virgin Islands State Historic Preservation Officer (VISHPO) and satisfy the requirements of Section 106 of the NHPA. Please note that numerous commenters recommended that the existing dinghy dock should be incorporated as part of the project and not demolished as currently proposed. In addition, the Cultural Resources Remote Sensing Survey completed to assess the potential presence of submerged cultural resources within the project areas indicates that the survey did not cover the entire in-water footprint of the proposed project, in particular the proposed dredging area. Please clarify why this area was not included in the survey, and why a survey of this area should not be required or necessary. In this regard, we also request that you provide us with copies of any communications you may have received from the VISHPO regarding the evaluation of the proposed project, particularly with respect to the archaeological survey reports submitted with the permit application.***

The existing dingy dock will not be removed and no evaluation for its eligibility to be included in th National Register of Historic Places is necessary. The existing upland and underwater Phase 1 Archaeological surveys are being reviewed by the VISHPO as part of the CZM review by DPNR.

*The revised drawings submitted by the applicant do not agree with the statement above. The excerpt below is from Sheet 04 of the revised drawings ("SHT-04 Existing Conditions and Demo Plan"), and it indicates that the dock will be demolished and removed:*




*Furthermore, in the revised drawing identified as "SHT-07 Marina Plan" the historic dinghy dock is absent (the area enclosed in red is the approximate location of the dock):*




*Finally, even if the historic dinghy dock were to remain, based on the proposed design the dock would be virtually unusable. The water access to the historic dock from the existing navigation channel has been blocked by the placement of the main pier.*

*In spite of the request by the Corps for the applicant to submit an evaluation of the potential eligibility of this dock for inclusion in the National Register of Historic Places, the applicant has apparently refused to do so.*

*We believe that the historic Coral Bay dock should remain as it has been for over 100 years, as the main point for access to and from the shore for boats moored in Coral Bay. Demolishing it, or isolating it behind a set of piers and docks is not consistent with the goals of the NHPA.*

*We are also concerned that the applicant has not proposed to monitor the dredge operation, and inspect all dredged materials for the presence of significant historic artifacts. Given the rich history of use of these waters, it is quite probably that artifacts may be found within the dredged sediments.*

***D. Environmental Assessment (EA) vs Environmental Impact Statement (EIS) - Numerous commenters to our PN indicated that a Federal EIS should be required and prepared for your proposed project. As indicated above, the information being requested in the present letter will be necessary for the Corps to comply with the procedural and documentation requirements of NEPA. At this time the Corps has not determined that preparation of an EIS will be necessary to satisfy the NEPA requirements applicable to your permit application. However, we request that you please submit your response and/or rebuttal to the above***

***recommendations that an EIS should be prepared, and discuss why you understand that an EIS should not be required.***

Based on constant communication with both the local regulators (USVI) and the USACE it was determined that an EAR would suffice for this project and an EIS would not be required.

*The applicant's comment is not responsive to the request from the Corps for a "response and/or rebuttal to the recommendations that an EIS should be prepared." In fact, the applicant has not supplied any statements on this subject other than "it was determined that an EAR would suffice."*

*We believe that the close proximity between the proposed marina and the extraordinarily unique land and marine resources of the Virgin Islands National Park and the Virgin Islands Coral Reef National Monument render this project to be one which has the potential to significantly affect the quality of the human environment. The federal resources of the park and monument are visited by tens of thousands of people every year. They are a living laboratory for understanding the impacts of climate change on corals and other marine life. The proposed marina, which will double the number of boats in Coral Bay harbor, as well as dramatically increase the number of fuel consuming power boats, has the potential for major impacts on these resources.*

*Pursuant to NEPA, the threshold requirement for mandating an EIS is that a project be a "major federal action significantly affecting the quality of the human environment" and we believe that the scope of this marina, its location in proximity to federal lands and preserves, and the extent to which it would change the historic character of Coral Bay, all weigh heavily to the requirement for preparation of a complete Environmental Impact Statement. The applicant has offered no explanation why this should not be the case.*

### *E. Additional Federal Agencies Comments and Requirements*

***1. U.S. Environmental Protection Agency (EPA) - Via letter dated January 21, 2016 (copy provided in attached disk), EPA determined that the proposed project would adversely impact aquatic resources of national importance, provided formal objections to the proposed project, and recommended the Corps to deny a permit for this project. Please review EPA's letter and provide adequate responses to the concerns detailed therein. This information will be necessary to complete our required interagency coordination and address the objections presented pursuant to Part IV 3(a) and 3(b) of the Section 404(q) Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army dated August 11, 1992.***

See attached detailed responses to EPA's January 21, 2016 letter.

*Please see our comments following the responses of the applicant in the EPA letter (attached).*

***F. Coastal Zone Management and Water Quality Certifications or Permits - You are reminded that two necessary prerequisites to the issuance of a Department of the Army permit for your project are the issuance of a Water Quality Certification and a Coastal Zone Management Plan Consistency Certification by the U.S. Virgin Islands Department of Planning and Natural Resources (USVI-DPNR). Please keep our office informed of the status of your applications to the USVI-DPNR for the Coastal Zone Management permit and Water Quality Certificate for the proposed marina.***

The Project is being reviewed by DPNR for a CZM permit and when it is approved, a Water Quality Certification will be issued. Upon receipts of the CZM Permit and WQC, they will be forwarded to the ACE.

*Although we have not yet seen the CZM permit application, it is our belief that CZM will require a combined application for the Marina project and the Resort and Hotel project, since they are two components of one related project. The Virgin Islands CZM regulations do not allow segmentation of projects into phases for permitting. If CZM requires a complete permit application covering both land and water components of the project, then this should provide strong rationale for the Corps to similarly consider these components under a single permit review process.*

***G. Cumulative Impacts - The Corps is very concerned with the potential cumulative impacts of the proposed marina on the aquatic environment of Coral Bay, Hurricane Hole, VINP, VICRNM, and Lagoon Point NNL, particularly considering that another marina (i.e., St. John Marina; DA Permit application number SAJ-2004-12518) is being proposed within Coral Bay, and that on October 19, 2015, the Corps issued a permit to the CBCC for the removal of derelict vessels within Coral Bay (DA Permit number SAJ2015-02010). In order for the Corps to adequately consider the potential cumulative environmental impacts of your proposed project and comply with the corresponding requirements of NEPA, we request that you please provide information regarding your evaluation of potential past, present and foreseeable future environmental impacts of the proposed action in relation to the above referenced projects and any other existing or proposed projects, which have affected or could affect the aquatic environment at Coral Bay, Hurricane Hole, VINP, VICRNM, and Lagoon Point NNL.***

The small number of marina slips proposed for this facility when compared to the overall boat traffic in Coral Bay will have only a minimal impact on the overall boater traffic, and visitation on sites outside of Coral Bay. Marina management intends to install prominent signage and print and distribute literature describing our many natural resources, and stressing that boating traffic must stay within preferred designated channels and avoid all coral reefs and other resources of special concern. We will solicit input from the appropriate agencies and community organizations to define the preferred channel and to identify known resources of special concern. These will be prominently marked on a chart given to all tenants and visitors, and instructions will be given to all captains hailing the marina prior to arrival. With the project located in the far

northeastern-most reaches of Coral Bay – the area in the bay furthest from Hurricane Hole and VINP, we believe that these steps will reduce the likelihood of this project would have any adverse or deleterious impact on the resources of VINP. Sirius Marina will offer a boat slip for the DPNR Enforcement to use.

If an additional marina(s) is proposed and approved, it is not possible for Sirius Marina to assess any cumulative impacts. However, if any additional marina is approved, Sirius Marina attends to work with them to mitigate any increased cumulative impacts.

*In the response above the applicant is apparently stating that they are not aware of the potential for cumulative impacts stemming from any "existing or proposed projects, which have affected or could affect the aquatic environment at Coral Bay, Hurricane Hole, VINP, VICRNM, and Lagoon Point NNL." We are astonished by this response.*

*At the very least, the applicant is well aware of their own related proposal to construct an 89 room resort complex directly adjacent to the proposed marina. The applicant is aware that the resort will involve discharge of waste water effluent, of reverse osmosis brine effluent, will involve creation of extensive impermeable surfaces, and propose construction of a building directly on top of an existing drainage ghut. This is a proposed project – it has been proposed to the Virgin Islands DPNR by this applicant and the applicant has requested legislative rezoning for its construction. This project most certainly "could affect the aquatic environment at Coral Bay" and yet the applicant is silent on any potential cumulative impacts.*

*Similarly, the applicant has proposed construction of a new athletic field on parcel 10A, which is a known and documented FEMA flood plain. The applicant proposes to dispose of approximately one thousand cubic yards of dredge spoil in this flood plain (which may also have characteristics of a wetland). There is no discussion of the cumulative impacts of this aspect of their proposal.*

*The applicant is well aware of the permit application by the Summer's End Group for a marina in close proximity to the one proposed by T-Rex. The requirement for analysis of cumulative impacts includes projects that are "proposed" – not only projects that are approved. The statement by the applicant that they will "work with them to mitigate any increased cumulative impacts" is thoroughly contrary to the prescribed manner for analysis of cumulative impacts. You don't wait until something happens, see if there are impacts, and then work to mitigate them. You analyze the potential cumulative impacts ahead of time and propose means to address them before they are realized.*

*Elsewhere in these comments we have noted the cumulative impacts on water quality stemming from the impact of upland development and sediment transport into the northern parts of Coral Bay Harbor. This sediment is at least partially immobilized in the root systems of sea grasses, SAV and mangroves. The destruction of potentially five acres of sea grasses and a half an acre of mangroves will result in release of trapped sediments stemming from prior upland development, a cumulative impact that has not been quantified by the applicant.*

*Based on the above we do not believe the applicant has met the requirement to address all potential cumulative impacts to the aquatic environment of Coral Bay.*

***H. Compensatory Mitigation Plan - Please be advised that the mitigation described in your permit application would not provide sufficient compensation for the potential impacts of the proposed project to the aquatic environment, particularly to waters of the U.S., mangroves and seagrasses. Once you demonstrate that the potential impacts of the proposed project to waters of the US and seagrasses have been avoided and minimized to the maximum extent possible and the extent of those impacts has been accurately documented, a compensatory mitigation plan to adequately offset those impacts must be developed and submitted to the Corps in accordance with the requirements of 33 CFR 332.***

A compensatory mitigation plan will be developed using a Habitat Equivalency Model in conjunction with all regulatory bodies including NOAA-NMFS-HCD.

*We do not believe that the applicant has correctly identified and quantified all of the direct, indirect and cumulative impacts to the aquatic environment and therefore cannot prepare a compensatory mitigation plan until all of those impacts are identified.*

*In particular, we are concerned about indirect impacts to adjacent National Park and National Monument resources, including Hurricane Hole, which the applicant has denied exist. Based on statements by the Virgin Islands National Park Superintendent, as well as our own observations, the presence of up to 100 motorized boats at the Sirius Marina will result in direct and indirect impacts to these resources, including from propeller wash, hydrocarbon releases, illegal anchoring, noise, vessel strikes and motorboat wakes. None of these impacts have been acknowledged by the applicant.*

*We are concerned about what types of marine services the applicant intends to offer on the premises, and their potential impacts to the marine environment. For example, does the applicant intend to have a jet ski concession? Does the applicant intend to have a dry slip boat garage? Will there be a permanent charter fleet ? These decisions will have direct and indirect impacts on the environment and have not been consistently answered by the applicant.*

*We are also concerned about the direct and indirect impacts of the fuel dock in possibly the least flushed portion of Coral Bay harbor. In spite of all efforts to avoid fuel spills experience shows that they inevitably do happen. There is no discussion of how fuel spills will be contained and what will be done to prevent their impacts on the nearby mangroves.*

*The mangroves in close proximity to the marina buildings and main marina pier are a known rookery for many species of migratory and year-round birds. This is one of the locations that is regularly included in the Audubon Christmas bird count. We are concerned that the marina*

*lighting will interfere with the nesting behavior in this location. The applicant has not addressed this impact or suggested mitigation.*

*The entire northern portion of Coral Bay Harbor is a known, documented nursery for young lemon, black tip and nurse sharks. The applicant has not discussed the potential impacts on this shark pupping habitat.*

*We believe that the public should be given an opportunity to address the sufficiency of the applicants statements regarding the types and quantification of all direct, indirect and cumulative impacts before any compensatory mitigation plan is reviewed by the Corps. We also believe that the public should be given an opportunity to review the compensatory mitigation plan when it is provided by the applicant.*

We trust that our responses adequately address the Corps and other Federal Agencies concerns and to a look forward decision regarding our permit.

Sincerely:

William F. McComb, PE

Cc: José A. Cedeño Maldonado, Project Manager
Rory Calhoun

Attachments:
Revised ACE Drawings
Responses to EPA January 21, 2016 Letter
Coastal Engineering Report
EcoScience Terrestrial Report

*In order to provide context for our comments, we have inserted our comments directly following the responses provided by the applicant. The text of EPA letter is in* **Times Roman Font**, *the text of the applicant is in* blue Standard Font *and the comments by Save Coral Bay are in Simple Italics and offset between green solid lines.*

## Response to EPA Letter to USACE

Comment #1

This is in reference to Permit Application No. SAJ-1982-05019 (SP-JCM) by Mr. Rory Calhoun for the proposed construction of a private commercial offshore marina and ancillary facilities at Coral Bay, St. John, U.S. Virgin Islands. The Environmental Protection Agency (EPA) has reviewed the public notice for this project and referenced it to available information regarding environmental resources at Coral Bay, as well as to other commercial marina facilities being proposed for this general area. Based on our review, EPA is very concerned that the proposed project will result in significant impacts to the aquatic resources present at Coral Bay. EPA therefore recommends the denial of a Department of the Army permit for this project. This letter is intended to satisfy the requirements of both Part IV 3(a) and 3(b) of the Section 404(q) MOA between our two agencies.

Sirius Marina believes the EPA would have been able to better evaluate the projects and its potential impacts if they would have accessed the actual Environmental Documents prepared for this Permit application. These documents are readily available and a pdf of the EAR is attached.

*The EPA was not the only agency who found a lack of environmental documentation to be problematical with this permit application. The comment letter from the United States Fish and Wildlife Service (USFWS) stated "A project of this size usually requires additional environmental documentation. However, we have not received any additional information other that what is included in the Corps Public Notice." Many people contacted Save Coral Bay to ask about an Environmental Assessment or other documentation describing the project in greater detail than is found in the Public Notice. The reason for this is that the applicant chose to apply for the Army Corps permit prior to going through the local Coastal Zone Management (CZM) process. During the CZM process all of the environmental documentation is made available to the public and to coordinating agencies, including the EPA. The only way Save Coral Bay obtained the applicants environmental assessment was through a Freedom of Information Act (FOIA) request. It was not distributed by the applicant to the public. It was incumbent on the applicant to ensure that all interested parties had received copies of all relevant documents.*

Using the public notice as a guide for understanding the actual site conditions shows a woeful lack of scholarship and appropriate level of due diligence performed by the EPA in this matter. Furthermore, using information from older, larger failed projects that have been proposed for the greater Coral Bay area – especially those like the Summer's End project that failed to use appropriate measures of ecological analysis or show any avoidance and minimization of project impacts are clearly not useful for comparison with the current project.

*The EPA indicates that they used information in the public notice, and cross referenced it with other information available regarding Coral Bay, and with information generated as a result of review of the Summer's End Group marina project. This shows a high degree of resourcefulness on the part of the EPA, utilizing all information known to be available to them. The applicant's characterization of the Summer's End Group project as an "older, larger, failed project" is baffling. As far as we are aware the T-Rex project is much older than the Summer's End project, it is comparable in size, and it is in the same state (application in abeyance at Army Corps) as the Sirius project.*

Sirius Marina strongly believe that this smaller, carefully designed project strikes a balance between the environment and the various stakeholders and user groups in the region. The current project carefully vetted a number of alternatives and selected the most environmentally friendly project carefully avoiding and minimizing project impacts wherever practicable. They also believe that this project follows in the spirit of protecting the greater Coral Bay ecosystem and when constructed will result in significant environmental benefits to the Bay. Thus, the project will ultimately have a net positive – not negative – impact to the aquatic resources and biotic habitats present at Coral Bay.

*This response flies in the face of reality. The application presented to the Army Corps and reviewed by the EPA included dredging of approximately an acre of Coral Bay, installation of a bulkhead in wetlands, and filling open waters to create room for land based amenities. At the time we reviewed that proposal we indicated that it clearly was not the most environmentally friendly project, for multiple reasons, but particularly because of the dredging and filling.*

*Apparently T-Rex agrees with us. In their revised application they have reduced the scope of the dredging and somewhat reduced the filling of open waters. They now claim that this version is the most environmentally friendly, which clearly means that the prior version was not. We have consistently offered alternatives, including very practicable on-site alternatives, which do not involve dredging, filling or bulkheads.*

*Furthermore, the applicant apparently has not researched the reality of environmental consequences of marinas throughout the Virgin Islands, and indeed throughout the Caribbean. In all cases that we have studied, marinas have led to marked environmental degradation. We are not aware of any marina project which has had a "net positive – not negative – impact to aquatic resources and biotic habitats." Marinas are a known source of toxic effluents and of habitat disruption and invariably have adverse consequences on the environment.*

Comment #2

EPA is very concerned that the described work will result in significant impacts to the aquatic resources present at Coral Bay. Coral Bay is an enclosed harbor surrounded by mangroves. The bay serves as a nursery ground and provides habitat for numerous species. It also contains extensive seagrass beds and submerged aquatic vegetation that provide food and foraging habitat to endangered sea turtles and serve as nursery for commercially valuable fish stocks. Numerous coral species are found in the area, and the bay has been documented as a black tip, lemon and nurse shark nursery area. In addition to the seagrass and mangrove habitats at Coral Bay, numerous coral species are found nearby, including *Acropora palmata*, *Acropora cervicornis*, and *Orbicella annularis*, which are listed as threatened under the Endangered Species Act. Despite these valuable resources in the area, the U.S. Virgin Islands

The above comment is rife with numerous errors that precludes the reader from being able to carefully evaluate the resources present and the potential impacts to those resources.

Firstly, Coral Bay has been mostly denuded of its native mangrove vegetation with more 50% of the current shoreline being devoid of mangrove vegetation.

> *This statement about mangroves is incorrect. Aerial photography from the 1940's and 1950's indicates that the mangrove cover in those decades, during the agricultural era, was substantially less than the mangrove cover that exists today. Essentially today it is exists in all shoreline areas that are naturally capable of sustaining it. In many places there is substantially greater mangrove cover today than 50 years ago. These photos and analysis were shared with USACE and the developer during the public comment period.*

Secondly, while part of the Bay contains seagrass, a majority of the Bay bottom within the footprint of the project is devoid of any seagrasses or submergered aquatic vegetation. This is directly associated with the poor water quality associated with the upper, northeastern most reaches of the Bay which is highly turbid and highly polluted.

> *The applicant is mischaracterizing the benthic habitat within the project footprint. By their own benthic assessment, approximately 50% of the area has sea grass. They have not, apparently, reported on the extent of other submerged aquatic vegetation, such as macroalgae. Nor has the applicant offered any data, evidence, or analysis to support the assertion that the northern reaches of the bay are "highly polluted." In fact, the applicants own reported water quality data indicates just the opposite – that the water is within the limits defined for Class B waters.*

Lastly, the coral species listed are not found in the project area or imediately adjacent to the project. The closest coral resources (which are not ESA listed species) to the project area are located on the far side of the Bay some 0.4 miles away. The closest ESA listed coral species are located slightly more than a half mile to the south-southeast of the project area. No impacts to coral resources are anticipated whatsoever, as a result of this project.

> *The EPA did not say that the coral species of concern are within the project footprint. The EPA said "numerous coral species are found in the area" and the applicant's response, above,*

*confirms that. The applicant has said nothing about the shark nursery which is found throughout the northern parts of Coral Bay Harbor.*

Comment #3

continued intense use of Coral Bay without a formal management plan has resulted in impacts from improper mooring and anchoring of vessels, plus additional impacts associated with improper waste disposal. In addition, developments on the lands surrounding the bay have increased the levels of pollutants and sedimentation that reach the harbor. EPA believes that the construction of the proposed marina has a significant potential to escalate the environmental impairment of Coral Bay.

Sirius Marina believes that it is precisely because this Bay has been developed without a plan, without proper waste disposal – especially human waste via pump-out facilities, illegal mooring by live-aboard boats that have caused irreparable harm to seagrass resources in the Bay, and finally a lack of proper on-land storm water management program – in tandem these factors have all led to the slow but steady degradation to water quality and concomitant degradation to the aquatic resources in the Bay and vicinity. Sirius Marina's marine consultants can attest that while performing the submerged aquatic vegetation studies in the northernmost portion of Coral Bay that this water was among the most polluted, dirty, foul smelling water that they had ever dived and feel lucky to have escaped these surveys without becoming ill.

On the contrary to EPA's belief, this project when implemented will greatly reduce and not escalate impairment of these resources.

*The applicant has offered no evidence whatsoever that their project will "greatly reduce and not escalate impairment" of aquatic resources. Improvements in Coral Bay water quality are an ongoing concern, and are being addressed through upland storm water management, solid waste management, derelict boat removal, and efforts to provide marine pumpout services throughout the mooring area. We seriously question the applicant's claim that "this water [is] among the most polluted, dirty, foul smelling water..." If this statement was made by an expert on water quality, we would like to see the data to support it.*

Comment #4

Coral Bay was selected as a priority site for a U.S. Coral Reef Task Force Local Action Strategy due to its valuable environmental resources and the significant environmental impacts occurring by human activities in the area. Such designation led to significant investments by the National Oceanic and Atmospheric Administration (NOAA) and EPA in an effort to reduce and reverse environmental impacts at Coral Bay. For example, EPA awarded a Community Action for a Renewed Environment grant to the

As locals to the Coral Bay area, Sirius Marina is a strong supporters of all actions to help restore Coral Bay back to a state much less impaired than it is today. Accordingly, though the project and other community service based missions they stand ready to support all agencies in restoring Coral Bay. A healthier Coral Bay is in everybody's best interest.

*We find this comment puzzling, since, to the best of our knowledge, none of the principals of the T-Rex St John and Sirius Development entities are residents of Coral Bay, much less residents of the US Virgin Islands.*

Comment #5

With respect to seagrass, the applicant has estimated that the installation of pilings and other structures may result in impacts of 1.236 acre of seagrass, including shading impacts. But a comprehensive benthic survey of seagrass for the complete project area is needed. The survey should include the transit routes that would be used by vessels entering or exiting the marina, as well as any other areas of the bay that

These surveys have been performed and were included in the environmental documents prepared for the initial Environmental Impact Assessment for the proposed project and in the Responses to the ACE Letter of March 8, 2016

*We have never seen benthic surveys of transit routes (e.g. navigation channels) nor have we seen benthic surveys of the proposed dredge location.*

Comment #6

for refuge, foraging and spawning. While EPA defers to the expertise and statutory responsibilities of the U.S. Fish and Wildlife Service and the National Marine Fisheries Service regarding sea turtles and corals, the available information suggests that these threatened/endangered species, as they occur within the project area, are likely to be negatively affected by the construction and operation of the proposed marina. Seagrasses, which are aquatic resources of national importance, may also be substantially affected by the potential degradation of water quality that may occur from the construction and operation of the proposed facilities, the potential for fuel and wastewater spills, the increases in runoff from the associated upland development, and the overall increase of human activity in the area.

As noted above sea turtle and coral resources will not be impacted whatsoever by the construction or operation of this proposed marina facility.

*The applicant's claim that sea turtles "will not be impacted whatsoever by the construction or operation" of the marina clearly indicates a lack of scientific knowledge regarding sea turtle mortality on the part of the applicant. Vessel strikes, particularly by motor boats, are a major source of human induced mortality of sea turtles. Research on sea turtle vessel strikes is reported in many research publications. The presence of a new population of almost 100 motorboats in Coral Bay is virtually certain to result in impacts, behavioral disturbances, and mortality of resident endangered sea turtle populations.*

Seagrasses have been avoided to the greatest extent practicable with most of the dock and slips of the marina being placed over areas of barren (mud) bottom. The majority of seagrass resources that will be impacted by the proposed project are those of a highly invasive, exotic seagrass species. This is discussed in great detail in our Environmental Impact assessment. The

regulatory agencies with purview of these resources have determined that these exotic species are not to be considered in determining overall project impacts or resulting seagrass mitigation for those impacts that are unavoidable.

> *We have not seen any regulatory advice indicating that the non-native sea grass Halophila stipulacea should not be considered in determining project impacts and mitigation. In fact, contrary to this statement, we have seen reports that the endangered Green Sea Turtle has been reported to be seen foraging on this species of sea grass and it is therefore providing habitat for the species.*

Again, Sirius Marina believes that the short term duration and ephemeral nature of project impacts during construction will be greatly outweighed by the project benefits, especially water quality when the project is completed.

> *The evidence for the adverse impact of marina construction and operation on water quality is well documented. The USFWS stated: "The impact of marinas to benthic habitats in the U.S. Virgin Islands was first documented by Island Resources Foundation (IRF) in the l 970's (Grigg et al. 1971 and Nichols et al. 1977). At that time it was noted that the inner sections of Mangrove Lagoon and Benner Bay where there is a large concentration of marinas, was devoid of marine organisms." The objective evidence and scientific research demonstrates that marina construction and operation has significant adverse effects on water quality.*

Comment #7

To compensate for the unavoidable impacts of the project, the applicant proposes to transplant seagrass from the piling installation areas, to plant red mangroves (*Rhizophora mangle*) and to remove trash and derelict, sunken vessels from the sea floor. While these mitigation concepts may adequately compensate for some of the project's impacts, the information available does not adequately quantify the amount of seagrass to be restored, or how much red mangrove habitat would be created within the bay. In addition, detailed plans for the removal of sunken vessels from the bay, and the measures to protect subaquatic vegetation and water quality during the removal process are needed. Given the available information, it

Sirius Marina stands ready to work with – not against -- the permitting agencies in this matter. Accordingly, once they receive conceptual approval of this project they will work aggressively to move from a conceptual mitigation plan to a detailed final mitigation design plan that will then become part of the special conditions of the project permit and one that will be implemented as a requirement of project construction.

> *The identification of all potential adverse impacts, and a plan for compensatory mitigation of those impacts, must be prepared by the applicant and available for review prior to any permit being approved. The applicant's suggestion that they will prepare mitigation design plans after permit approval is not our understanding of the permitting process.*

Sirius Marina and its support team will coordinate a time to meet with the resource agencies to discuss a final mitigation plan to offset any impacts of the project and they look forward to

these discussions. In fact, if EPA's staff has any questions or concerns with any of the details in this matter, Sirius Marina would be more than willing to address them.

> *The mitigation plans should be prepared by the applicant, in writing, prior to completing evaluation of the permit request. Meetings and discussions may be useful in formulating a plan, but are not a substitute for a written plan available for public scrutiny.*

Comment #8

As EPA has previously stated for other projects proposed in this area, whatever the outcome of this proposed permit, EPA would like to work with the government of the U.S. Virgin Islands, other federal agencies and the interested public, on a strategy to remove all sunken, derelict vessels in Coral Bay and to improve waste management practices in this area. That work should continue, regardless of the outcome of the marina proposals.

Sirius Marina strongly agrees and believes that this project and its proposed mitigation options such as providing pump-out facilities, will help expedite this process.

Comment #9

EPA is also concerned about in-water and shoreline construction measures to control sedimentation and turbidity. The proposed upland components of the project (parking, restaurant, marina offices, and others) would likely involve land clearing, grading and excavation as well as major construction activity within the Coral Bay watershed. These activities may result in contaminated water and sediments reaching Coral Bay, as well as in the development of additional impervious surfaces and increased runoff flows that increase the risk of pollutants entering the water column. According to the information furnished by the applicant, these potential impacts would be minimized and abated through the implementation of a sediment and erosion control and storm water management plans. The project will require a permit under the Territorial Pollutant Discharge Elimination System (TPDES) program administered by VIDPNR for the discharge of storm water runoff from the proposed construction activities. The establishment of sediment controls and the diversion of storm water flows to control water velocity and the transport of sediments will be important factors in reducing the potential impacts from sedimentation in the bay. EPA reiterates the need to prepare a Storm Water Pollution Prevention Plan addressing all storm water and sedimentation issues pursuant to the requirements of the TPDES General Permit. The development and establishment of controls prior to the start of any earth movement activities is highly important, since they are critical to ensure adequate management of storm water erosion and sedimentation.

Sirius Marina is fully aware that it will need to apply for a Storm Water Pollution Prevention Plan (SWPPP) prior to start of any earthwork and we expect this to be a condition of both Permits. A SWPPP will be prepared and submitted after the CZM and ACE Permits are received. The land side of the Marina has a moderate slope with elevations from 14' to sea level. The site slopes south to the bay. Very little storm water enters the site as the Public Road, Route 10, to the north, intercepts all the upland runoff and directs it to the east, by-passing the site. With the Route 10 intercepting upland runoff, storm water runoff will be limited to what falls on the site.

Sirius Marina is aware that the CBCC has developed proposed mitigation measures and preliminary design features to reduce sediment from the Johnny Horn Gut. They have been in contact with the CBCC and will work with them in the final design of the proposed Johnny Horn Gut watershed improvements to reduce sediment runoff. Sirius Marina will work closely with the Moravian Church and adjacent landowners to define and obtain the necessary easements to provide the necessary check dams, sedimentation basins and emergency spillways. It is in our interest to improve the water quality in the Bay.

Comment #10

Given the significant direct and indirect impacts that the proposed project would have on the seagrass beds at Coral Bay, the relative large scale of the project, as well as its potential impacts on water quality and endangered species, EPA believes that the construction of this marina will have a substantial and unacceptable impact on aquatic resources of national importance. This is based on the potential infrastructure needs of the project, its potential for significant water quality degradation, its effects on aquatic resources of national importance (seagrasses and corals), its indirect impacts on endangered/threatened species and the consideration of the values and functions of the special aquatic

Sirius Marina strongly disagree with the conclusions drawn by the EPA in this matter. Failure on their part to understand the actual locations of corals, seagrasses and mangroves relative to the project footprint warrants harsh criticism. This lack of science-based management, and one based on an overall ideology that uses anecdote from previous failed projects does not lend to sound stewardship of the resources that everyone is working so diligently to preserve, protect and enhance for future generations to use and enjoy.

> *To the contrary, the EPA's application of vast experience, and its knowledge of potential impacts and actual impacts from similar projects, have far greater weight than the very self-serving comments and analysis of the project developer. We have provided extensive analysis of the Sirius documentation demonstrating the lack of good scientific analysis, the lack of adequate thorough alternatives review, the lack of practical knowledge of Coral Bay, and other serious defects.*
>
> *There is absolutely no doubt that if the objective is to "diligently preserve, protect and enhance" environmental resources for future generations then you do not dredge sea bottoms, fill open water, drive pilings into living habitat, and pump toxic fuels in an area of rich biodiversity.*

Sirius Marina also believe that our Responses to the ACE March 8, 2016 letter and changes to the overall Marina design further reduces negative impacts to the Marine Environment.

# Attachment 1

Sirius Resort and Marina Conceptual Design

Prepared by T-Rex St John and presented

to the community of Coral Bay

# SIRIUS RESORT & MARINA

*Sirius* - The brightest star in the night sky, sirius has been used for navigation at sea for centuries and is known as the sailor's star.

CORAL BAY . SAINT JOHN . USVI

## PROPERTY ADDRESS:

PARCELS NO. 10A-1 REM.
ESTATE AMMAUS
NO. 2 CORAL BAY QUARTER
ST. JOHN, U.S. VIRGIN ISLANDS

## OWNER:

MORAVIAN CHURCH V.I. CONFERENCE
P.O. BOX 8330
ST. THOMAS, USVI, 00801
TEL: 340-775-1055
FAX: 340-775-1190

## DEVELOPER:

T-REX ST. JOHN, LLC

## PROJECT DESCRIPTION:

THE MORAVIAN CHURCH V.I. CONFERENCE & T-REX ST. JOHN, LLC IS PROPOSING TO DEVELOP A MIXED-USE PROJECT COMPRISING OF 89 UNIT HOTEL/CONDO-MINIUM RESORT, MARINA AND RELATED RETAIL. CONSTRUCTION WILL ALSO INCLUDE PASSIVE RECREATION CONSISTING OF "VILLAGE GREEN", BASEBALL FIELD, TENNIS & BASKETBALL COURTS FOR THE GENERAL PUBLIC.

## PROJECT CONTACTS:

PARCEL REM. 10A, 10A-1 — SAMUEL RYMER
TEL: 340-642-1947

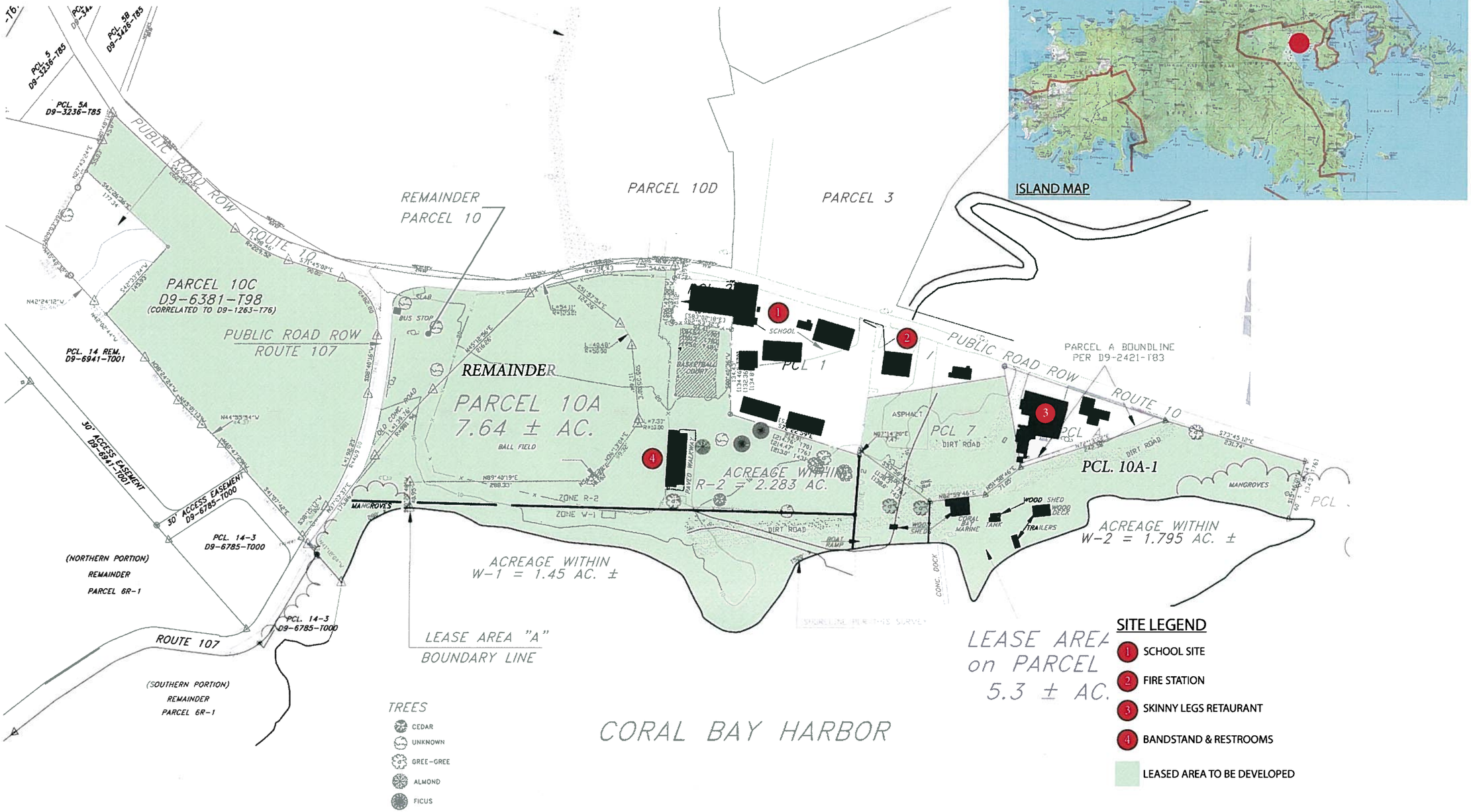
## ZONING INFORMATION:

**CURRENT ZONING:** R-2/RESIDENTIAL LOW DENISTY
W-1/WATERFRONT PLEASURE
W-2/WATERFRONT INDUSTRIAL

**PROPOSED ZONING:** W-1/WATERFRONT PLEASURE
W-2/WATERFRONT INDUSTRIAL

JDG Jaredian Design Group
Architects, Engineers and Planners

AUGUST 27, 2014


ISLAND MAP
PUBLIC ROAD ROW
ROUTE 10
PARCEL 10C
D9-6381-T98
(CORRELATED TO D9-1263-T76)
PUBLIC ROAD ROW
ROUTE 107
PCL. 14 REM.
D9-6941-T001
PCL 5
D9-3236-T85
PCL 5A
D9-3236-T85
PCL 5B
D9-3426-T85
30' ACCESS EASEMENT
D9-6941-T001
30' ACCESS EASEMENT
D9-6785-T000
PCL. 14-3
D9-6785-T000
(NORTHERN PORTION)
REMAINDER
PARCEL 6R-1
ROUTE 107
(SOUTHERN PORTION)
REMAINDER
PARCEL 6R-1
REMAINDER
PARCEL 10
PARCEL 10D
PARCEL 3
REMAINDER
PARCEL 10A
7.64 ± AC.
BALL FIELD
BUS STOP
SLAB
OLD CONC. ROAD
MANGROVES
ZONE R-2
ZONE W-1
ACREAGE WITHIN
R-2 = 2.283 AC.
ACREAGE WITHIN
W-1 = 1.45 AC. ±
LEASE AREA "A"
BOUNDARY LINE
SCHOOL
PCL 1
PARCEL A BOUNDLINE
PER D9-2421-183
PCL 7
DIRT ROAD
ASPHALT
PCL. 10A-1
WOOD SHED
WOOD DECK
TRAILERS
CORAL BAY MARINE
TANK
ACREAGE WITHIN
W-2 = 1.795 AC. ±
CONC. DOCK
LEASE AREA
on PARCEL
5.3 ± AC.
TREES
CEDAR
UNKNOWN
GREE-GREE
ALMOND
FICUS
CORAL BAY HARBOR
SITE LEGEND
1 SCHOOL SITE
2 FIRE STATION
3 SKINNY LEGS RETAURANT
4 BANDSTAND & RESTROOMS
LEASED AREA TO BE DEVELOPED

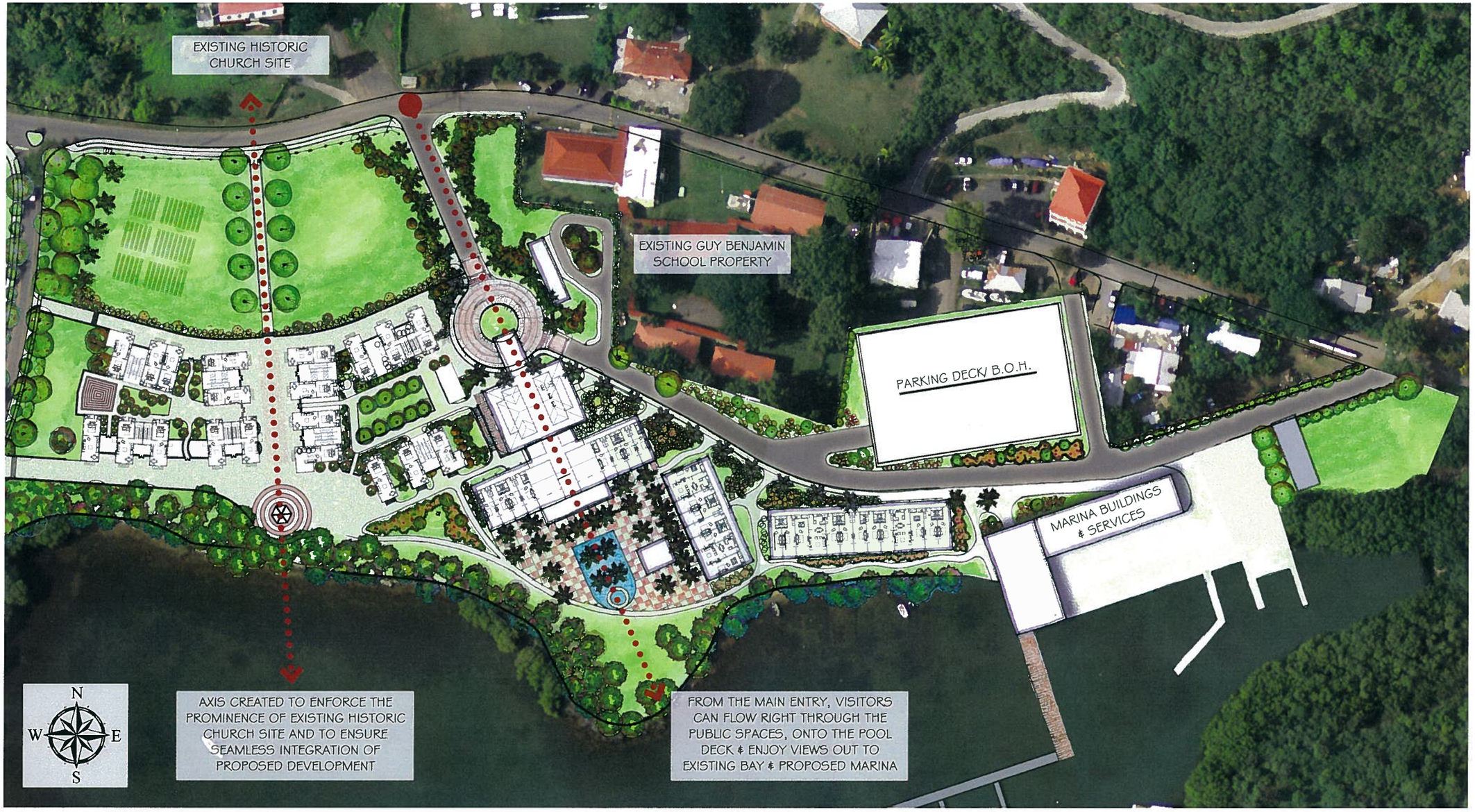
## SITE PLAN LEGEND

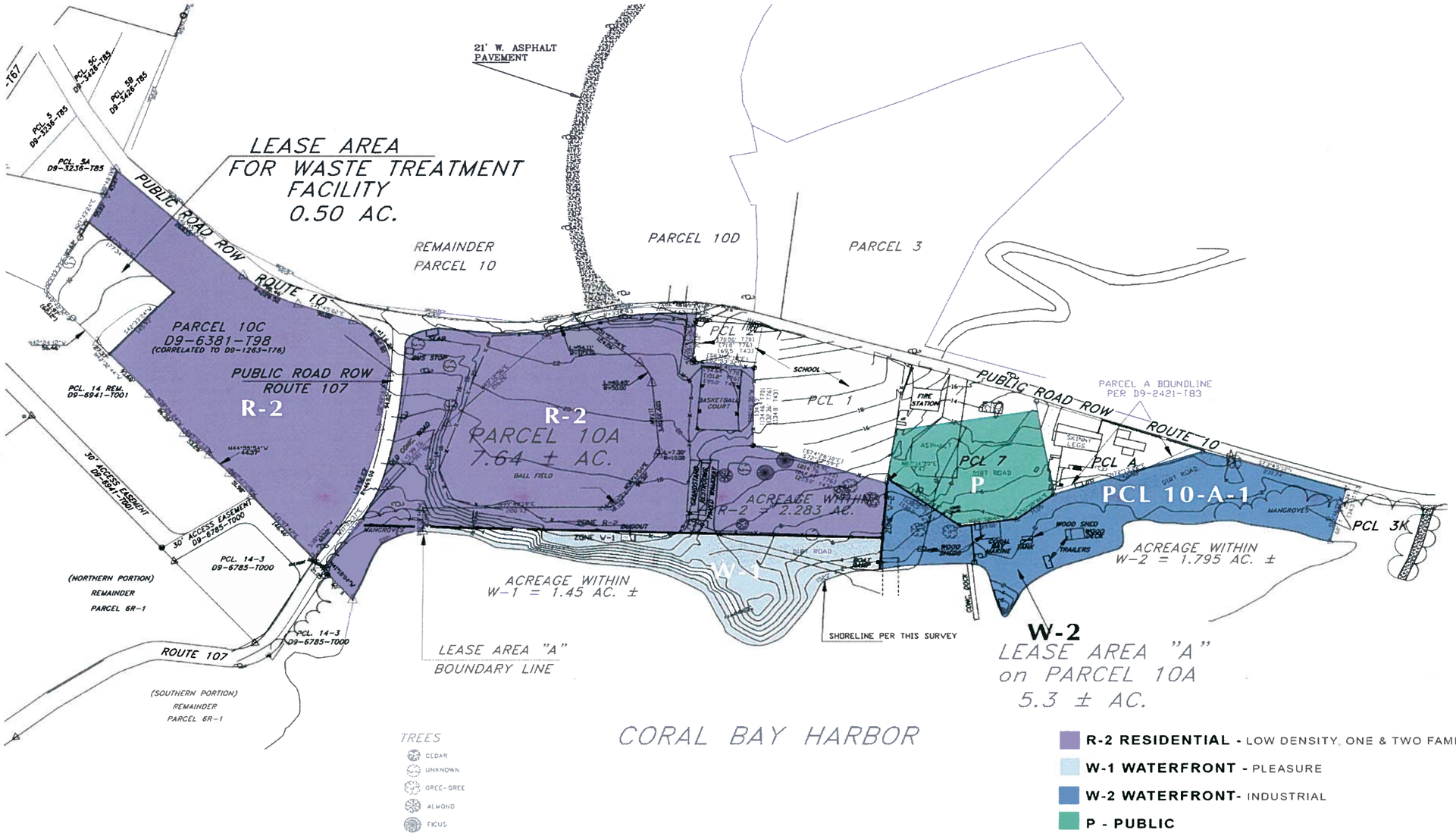
1. MAIN ENTRANCE
2. VILLAGE GREEN (540 SEATING ARRANGEMENT SHOWN)
3. BASEBALL FIELD
4. SURFACE PARKING (SPORTS PARK)
5. BASKETBALL COURT
6. EMPLOYEE & MANAGEMENT BUILDING
7. PORTE COCHERE
8. RECEPTION & MAIN BUILDING
9. PARKING DECK & BACK OF HOUSE
10. MARINA BUILDINGS & SERVICES
11. OUTDOOR POOL & ENTERTAINMENT
12. PLAZA W/ GAZEBO ON AXIS W/ CHURCH
13. HOTEL GIFT SHOP
14. HOTEL VILLAGE UNITS - 28 UNITS
15. HOTEL UNITS - 22 UNITS
16. W/ RESTAURANT @ FIRST FLOOR/POOL DECK HOTEL UNITS - 15 UNITS
17. HOTEL UNITS - 24 UNITS

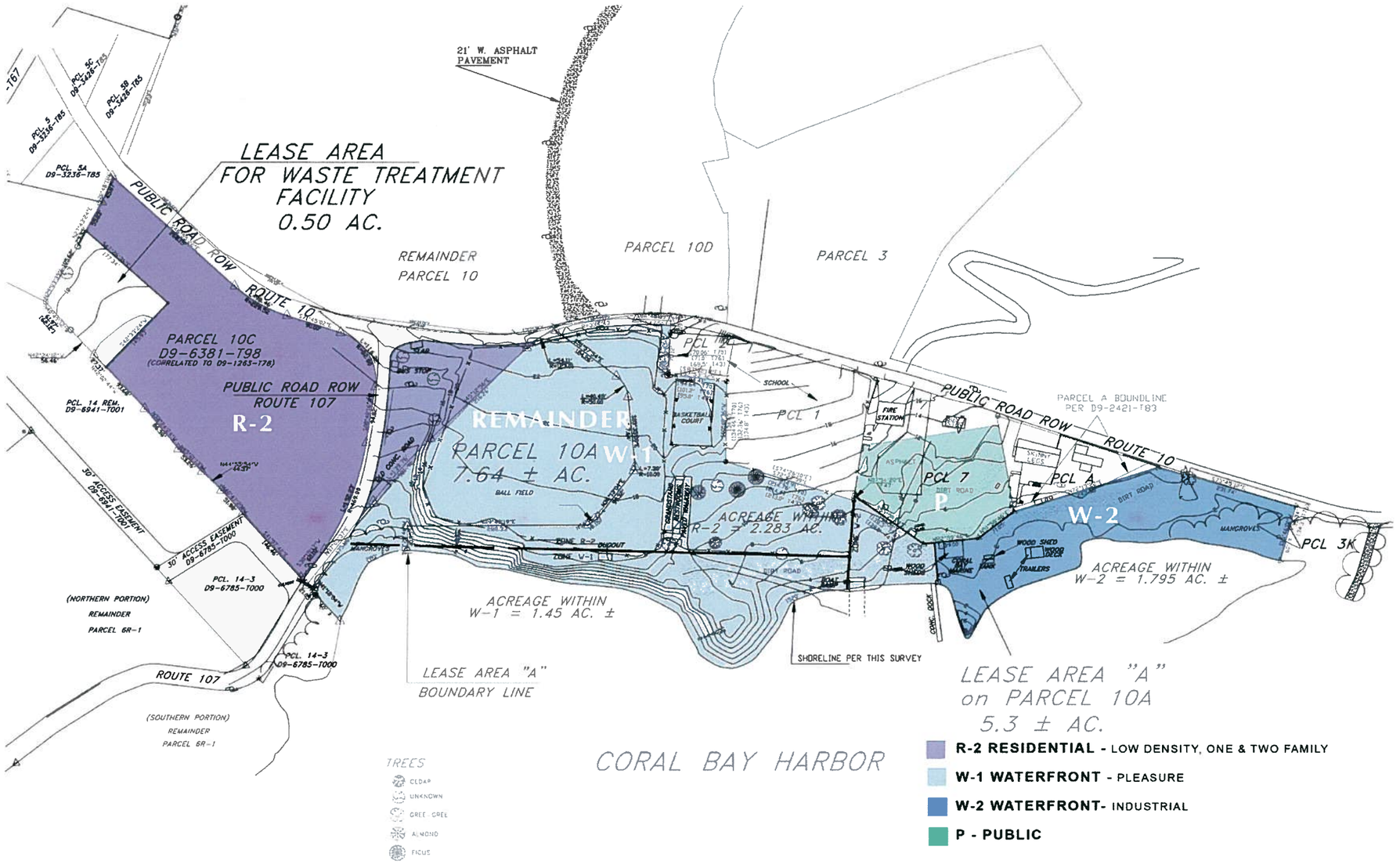
**TOTAL HOTEL UNITS - 84 ROOMS**

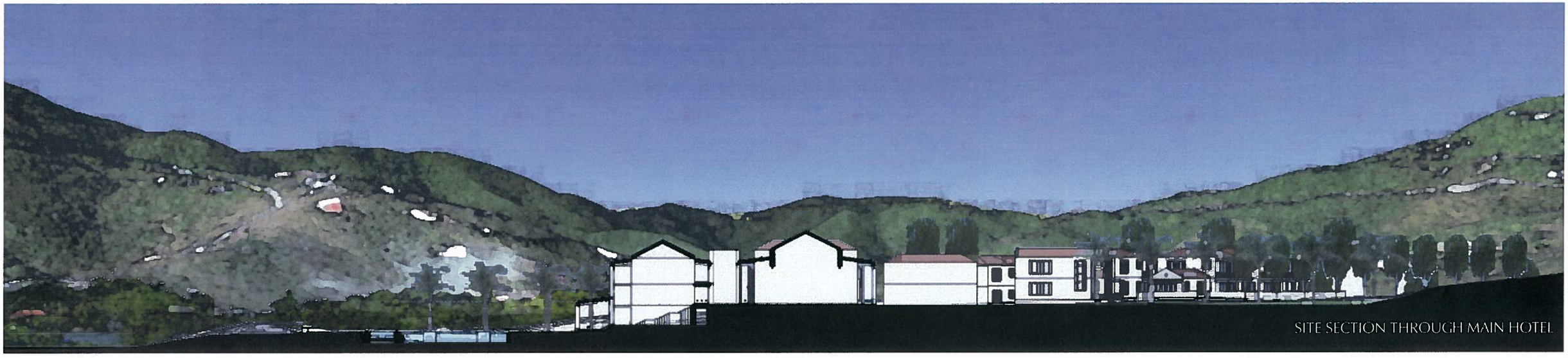



# PROPOSED CONCEPTUAL SITE PLAN


EXISTING HISTORIC CHURCH SITE
EXISTING GUY BENJAMIN SCHOOL PROPERTY
PARKING DECK/ B.O.H.
MARINA BUILDINGS & SERVICES
N
W
E
S
AXIS CREATED TO ENFORCE THE PROMINENCE OF EXISTING HISTORIC CHURCH SITE AND TO ENSURE SEAMLESS INTEGRATION OF PROPOSED DEVELOPMENT
FROM THE MAIN ENTRY, VISITORS CAN FLOW RIGHT THROUGH THE PUBLIC SPACES, ONTO THE POOL DECK & ENJOY VIEWS OUT TO EXISTING BAY & PROPOSED MARINA


LEASE AREA
FOR WASTE TREATMENT
FACILITY
0.50 AC.
21' W. ASPHALT PAVEMENT
REMAINDER
PARCEL 10
PARCEL 10D
PARCEL 3
PUBLIC ROAD ROW
ROUTE 10
PARCEL 10C
D9-6381-T98
(CORRELATED TO D9-1265-T76)
PUBLIC ROAD ROW
ROUTE 107
R-2
PARCEL 10A
7.64 ± AC.
BALL FIELD
BASKETBALL COURT
SCHOOL
FIRE STATION
PCL 1
PCL 7
DIRT ROAD
P
PCL A
PARCEL A BOUNDLINE
PER D9-2421-T83
PCL 10-A-1
PCL 3K
ACREAGE WITHIN
R-2 = 2.283 AC.
ACREAGE WITHIN
W-1 = 1.45 AC. ±
ACREAGE WITHIN
W-2 = 1.795 AC. ±
W-1
W-2
SHORELINE PER THIS SURVEY
LEASE AREA "A"
BOUNDARY LINE
LEASE AREA "A"
on PARCEL 10A
5.3 ± AC.
CORAL BAY HARBOR
PCL. 14 REM.
D9-6941-T001
30' ACCESS EASEMENT
D9-6941-T001
30' ACCESS EASEMENT
D9-6785-T000
PCL. 14-3
D9-6785-T000
(NORTHERN PORTION)
REMAINDER
PARCEL 6R-1
(SOUTHERN PORTION)
REMAINDER
PARCEL 6R-1
PCL 5A
D9-3236-T85
PCL 5
D9-3236-T85
PCL 5C
D9-3426-T85
PCL 5B
D9-3426-T85
TREES
CEDAR
UNKNOWN
GREE-GREE
ALMOND
FICUS
R-2 RESIDENTIAL - LOW DENSITY, ONE & TWO FAMILY
W-1 WATERFRONT - PLEASURE
W-2 WATERFRONT- INDUSTRIAL
P - PUBLIC


21' W. ASPHALT PAVEMENT
LEASE AREA FOR WASTE TREATMENT FACILITY 0.50 AC.
PUBLIC ROAD ROW ROUTE 10
REMAINDER PARCEL 10
PARCEL 10D
PARCEL 3
PARCEL 10C D9-6381-T98
(CORRELATED TO D9-1263-178)
PUBLIC ROAD ROW ROUTE 107
R-2
REMAINDER PARCEL 10A W-1 7.64 ± AC.
BALL FIELD
BASKETBALL COURT
SCHOOL
FIRE STATION
PCL 1
PCL 7
P
PARCEL A BOUNDLINE PER D9-2421-T83
PCL A
W-2
MANGROVES
PCL 3K
ACREAGE WITHIN R-2 = 2.283 AC.
ACREAGE WITHIN W-2 = 1.795 AC. ±
ACREAGE WITHIN W-1 = 1.45 AC. ±
SHORELINE PER THIS SURVEY
LEASE AREA "A" BOUNDARY LINE
LEASE AREA "A" on PARCEL 10A 5.3 ± AC.
30' ACCESS EASEMENT D9-6941-T001
30' ACCESS EASEMENT D9-6785-T000
PCL. 14-3 D9-6785-T000
PCL. 14 REM. D9-6941-T001
(NORTHERN PORTION) REMAINDER PARCEL 6R-1
(SOUTHERN PORTION) REMAINDER PARCEL 6R-1
ROUTE 107
PCL. 5A D9-3236-T85
PCL. 5 D9-3236-T85
PCL. 5B D9-3236-T85
PCL. 5C D9-3236-T85
TREES
CEDAR
UNKNOWN
GREE GREE
ALMOND
FICUS
CORAL BAY HARBOR
R-2 RESIDENTIAL - LOW DENSITY, ONE & TWO FAMILY
W-1 WATERFRONT - PLEASURE
W-2 WATERFRONT- INDUSTRIAL
P - PUBLIC



SITE SECTION THROUGH MAIN HOTEL

SITE SECTION THROUGH HOTEL VILLAGE/CHURCH

# SIRIUS RESORT & MARINA

*Sirius* - The brightest star in the night sky, sirius has been used for navigation at sea for centuries and is known as the sailor's star.

CORAL BAY . SAINT JOHN . USVI

## PROPERTY ADDRESS:

PARCELS NO. 10A-1 REM.
ESTATE AMMAUS
NO. 2 CORAL BAY QUARTER
ST. JOHN, U.S. VIRGIN ISLANDS

## OWNER:

MORAVIAN CHURCH V.I. CONFERENCE
P.O. BOX 8330
ST. THOMAS, USVI, 00801
TEL: 340-775-1055
FAX: 340-775-1190

## DEVELOPER:

T-REX ST. JOHN, LLC

## PROJECT DESCRIPTION:

THE MORAVIAN CHURCH V.I. CONFERENCE & T-REX ST. JOHN, LLC IS PROPOSING TO DEVELOP A MIXED-USE PROJECT COMPRISING OF 89 UNIT HOTEL/CONDO-MINIUM RESORT, MARINA AND RELATED RETAIL. CONSTRUCTION WILL ALSO INCLUDE PASSIVE RECREATION CONSISTING OF "VILLAGE GREEN", BASEBALL FIELD, TENNIS & BASKETBALL COURTS FOR THE GENERAL PUBLIC.

## PROJECT CONTACTS:

PARCEL REM. 10A, 10A-1 — SAMUEL RYMER
TEL: 340-642-1947

## ZONING INFORMATION:

**CURRENT ZONING:** R-2/RESIDENTIAL LOW DENISTY
W-1/WATERFRONT PLEASURE
W-2/WATERFRONT INDUSTRIAL

**PROPOSED ZONING:** W-1/WATERFRONT PLEASURE
W-2/WATERFRONT INDUSTRIAL

JDG Jaredian Design Group
Architects, Engineers and Planners

# Attachment 2

T-Rex and Moravian Conference Rezoning Request

August 2014

Prepared by T-Rex St John for DPNR Rezoning Application

# SIRIUS RESORT AND MARINA – ZONING CHANGE REQUEST

**PARCELS 7, REM. 10A, 10A-1, AND 10C ESTATE EMMAUS, NO. 2 CORAL BAY QUARTER**
**ST. JOHN, U. S. VIRGIN ISLANDS**

## INTRODUCTION

The Moravian Church and T-Rex St. John, LLC (T-Rex), is proposing to construct a Major Project in Coral Bay consisting of: a Wet-slip and Dry storage Marina and related Retail; 89 Hotel/Condominium units; Underground and Above-ground Parking; Pool; Shopping Plaza; Wastewater Treatment Plant; Reverse Osmosis Plant and a new Ball Field with Bleachers. The Proposed Project will be built on Parcels 7, Rem. 10A, 10A-1, and 10C, Estate Emmaus, St. John, United States Virgin Islands.

A portion of Parcel Rem. 10A, Lease Area "A", is zoned W-1/Waterfront Pleasure, and W-2/ Waterfront Industrial, but it is not sufficient for all the proposed components of the Project and the Moravian Church is respectfully requesting a zoning change such that all of Parcel Rem. 10A will be zoned W-1. Parcel 10A-1 has been created to maintain the existing W-2/Waterfront Industrial on the eastern portion of the project site for a marine-services building, boat yard, and dry-dock storage. This lot will also have a boat launch and community dinghy dock.

Parcel 7 is divided into two Portions, one with the existing Fire Station and the remainder below it. The Moravian Church has leased the lower portion from Virgin Islands Port Authority (VIPA). This lot is zoned P (Public). A parking deck will be constructed on this lot. It is properly zoned for this land use.

A new Ball Field with bleachers is proposed for Parcel 10C, which is 3.748 acres. This will replace the existing Ball Field on Parcel 10A. Parcel 10C is zoned R-2 and does allow for a Ball Field. However it is not large enough to meet the zoning requirements of a minimum area of 5 acres and to have the field 50' from the property lines. Therefore, T-Rex and the Moravian Church will be requesting a zoning variance through the V. I. Board of Land Use and Appeals for Parcel 10C to allow for the Ball Field. *(See Figure 2, Proposed Site Plan.)*

The process to arrive at the Proposed Project Design was the result of several factors: Environmental; Historical & Cultural; Marina Impacts; and Financial. In preparation for applying for a CZM Permit for the Project, Moravian Church and T-Rex have undertaken several studies assessing the existing site conditions and to determine a marine design. The studies done were: Coastal Engineering Assessment for the marina design; Archaeological Phase I Study; Marine Benthic Survey; and Terrestrial Surveys. The results of these studies were used to determine a Project Design that would have the least impacts on the environment and cultural resources. Basically the studies indicated that the Project Site had been heavily worked over the past years and the Project would, as proposed, have minimal additional impacts on the existing environment.

To assist the Senate in assessing the Proposed Project, a summary of these Studies is given below.

## COASTAL ENGINEERING ASSESSMENT

A full service marina does not presently exist on St. John. The Moravian Church and T-Rex hired Moffatt & Nichol Engineering to undertake a Coastal Engineering Assessment to determine the Marina Layout and Design. The proposed marina is conceived to capture boat owners who purchase a condominium, transient hotel guests, and boat owners who live on or visit St. John on a frequent basis. The upland area for the marina is already properly zoned as W-1 (Waterfront Pleasure), and W-2 (Waterfront Industrial).

The proposed marina site will lie within a footprint tentatively defined by the property shoreline to the north, the seaward extension of the property line to the west, the shoreline of Usher Cay on the east side, and to the south, a line from the south tip of Usher Cay to the west property boundary. Water depths within the marina footprint range from 2 feet below mean sea level (MSL) on the northeast side to 12 feet on the south side. An updated marina market, benthic, and bathymetric studies are being done to determine the final size of the marina.

A Bathymetric Survey of the site was conducted in May 2007 by Marvin Berning and Associates (See Figure 1, next page),

## FIGURE 1 – AS-BUILT SURVEY

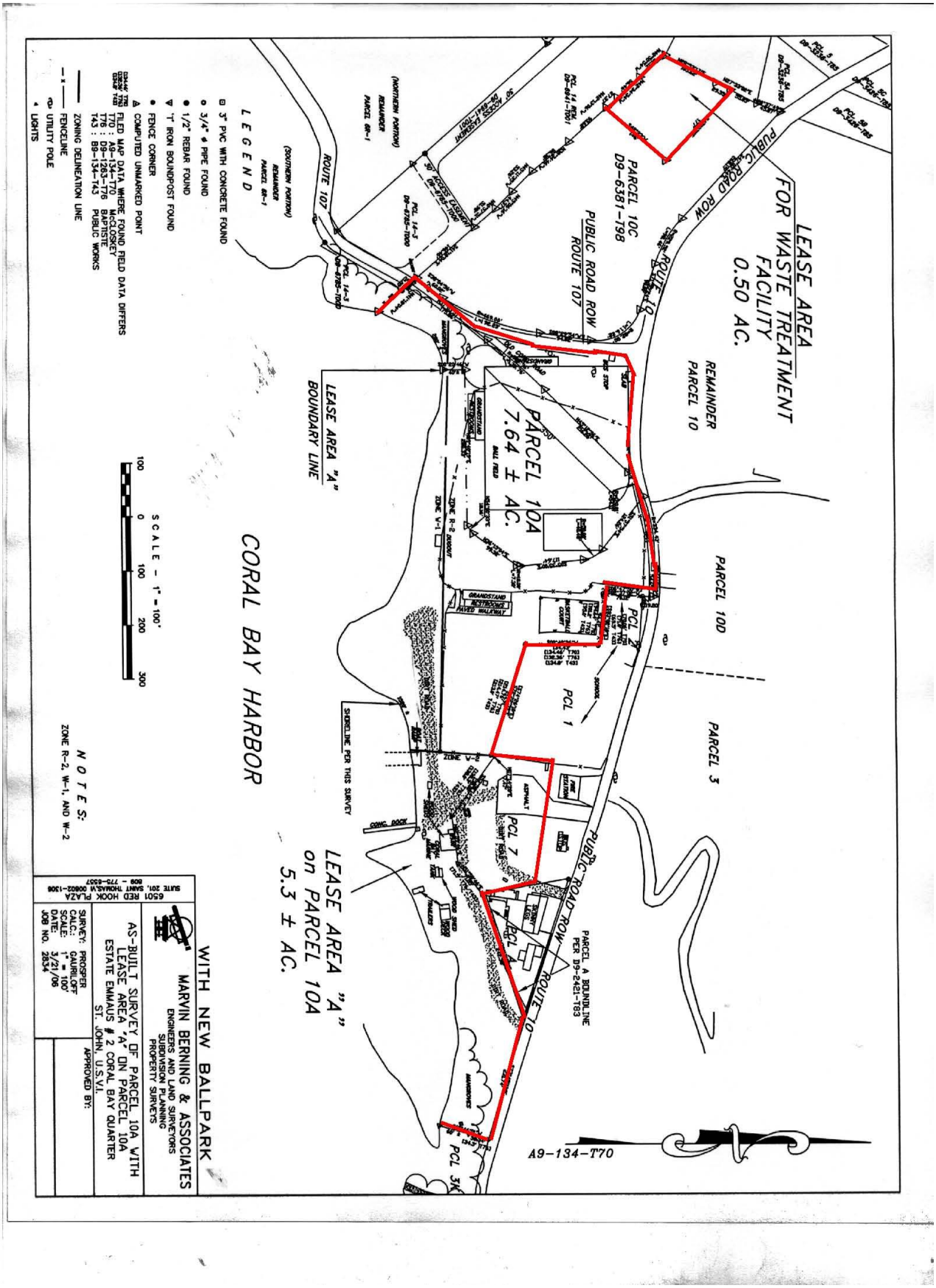


**FIGURE 2 – CONCEPTUAL SITE PLAN**

which encompasses the proposed marina footprint and an 800-foot by 2000-foot area that includes the main entrance channel into Coral Harbor. The survey was supplemented by navigation charts developed by the National Oceanographic and Atmospheric Administration.

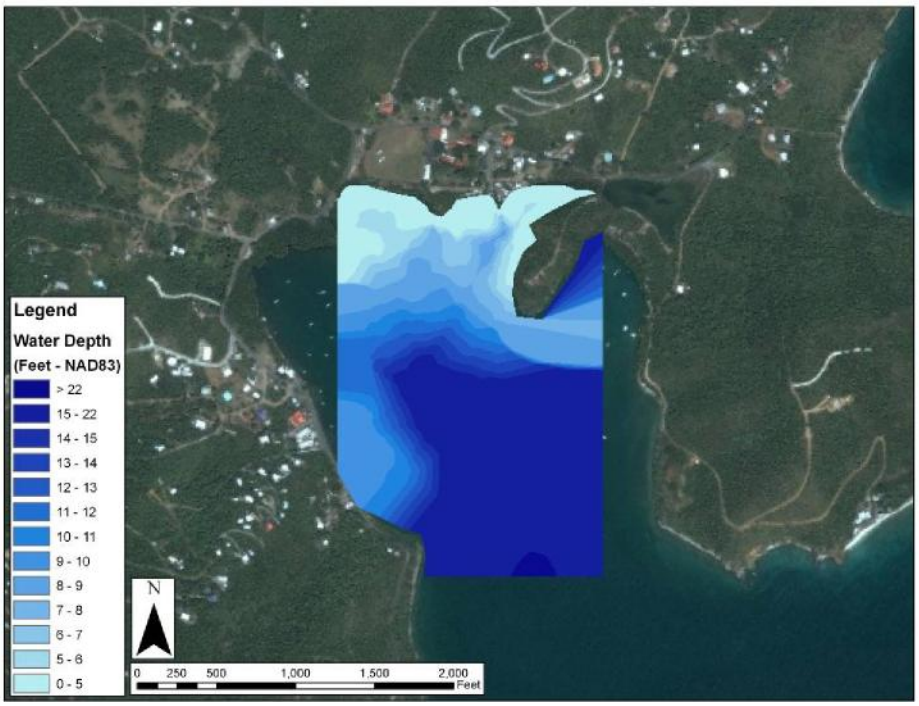
Water depths at the entrance to the Coral Bay vary from 50 to 80 feet. Outside of the bay, a shallow shelf extends approximately 5.5 miles in the southerly direction with water depth fluctuating between 65 to 115 feet. Beyond this shelf, the water depth increases sharply to more than 500 feet. Water depths in Coral Bay are greater than 30 feet into Hurricane Hole. The shallowest water lies within Coral Bay where water depths range from 20 feet at the entrance to less than 2 feet in the cove formed by Ushers Cay as shown in Figure 3.

Wind statistics are prepared and analyzed under two general categories, short term and long term statistics. Short term statistics define so-called "Prevailing Conditions" or day-to-day operational conditions. Long term statistics describe extreme storm events associated with specific return period intervals. Long term statistics are used to assist in the design of marine structures.

Wave statistics were available for the GHM hindcast station #503 2 of the same duration for prevailing and storm events. The CDMP study also provides wave height data for extreme storm events associated with select return periods.

The study area is influenced by the Caribbean trade winds. Localized shifts in wind speed and direction within Coral Bay can occur year round due to the effects of radiant cooling and surrounding topography.

**FIGURE 3 – WATER DEPTHS IN CORAL HARBOR**




Storm surge magnitude is directly dependent upon the track of the storm, storm intensity, and the local bathymetry. Storm surge levels in Coral Bay have not been recorded. The Federal Emergency Management Agency (FEMA) completed an update to the flood insurance study for St. John in April 2007. The restudy was initiated to include storm surge levels recorded during recent hurricane events such as Hurricanes Marilyn and Lenny. The study indicates that the storm surge elevation associated with the 100-year flood event is approximately 8.1 feet MLLW.

| Return Period (years) | FEMA Storm Surge (MLLW, feet) |
|---|---|
| 10 | 3.9 |
| 25 | 5.6 |
| 50 | 6.4 |
| 100 | 8.1 |

The wave environment in Coral Harbor during prevailing and storm conditions is heavily influenced by local wind generated waves (seas). There is approximately a 1.2 mile long unobstructed surface of water (fetch) between the project site and Lagoon Point, corresponding to waves from the southeast direction. The wave height and corresponding wave period at the project site associated with sea conditions were estimated based on empirical hindcast formulas incorporated into the NSW model. Wave heights were computed for several wind speeds. The results are shown in Table 3-1.

**TABLE 3-1 LOCAL SEA CONDITIONS – SOUTHEAST DIRECTION**

| U(mph) | Hs (ft) | Tp (sec) |
|---|---|---|
| 15 | 0.5 | 1.5 |
| 25 | 0.9 | 1.8 |
| 50 | 2.5 | 2.4 |
| 75 | 4.0 | 2.9 |
| 90 | 4.9 | 3.1 |

The flushing time of the proposed marina facility was analyzed using the hydrodynamic module (HD) of MIKE21 suite of computer models. The tidal currents represent the primary hydrodynamic forces. Wind and wave induced currents, which may enhance mixing and improve flushing, were excluded from the model setup to present a more conservative flushing estimate. The output of the hydrodynamic model was used with the coupled MIKE21 Advection/Dispersion module (AD) to evaluate the flushing time for the basin.

The model results indicate that the average residual constituent concentration is less than 37% after 24 hours, and falls below 10% level after 96 hours, as shown in Figure 4-1. The proposed marina site meets the flushing criteria established by USACE and FDEP.

## PHASE I ARCHAEOLOGICAL SURVEY

Soltec International Inc. (Soltec) performed a Phase I Archaeological Survey in Lease Area A, Parcels 7, 10A and 10C.

The proposed development is required to comply with Section 106 of the National Historic Preservation Act of 1996, as amended and Title 29, Chapter 17, Section 959, of the Virgin Islands Code, also known as the Antiquities and Cultural Properties Act of 1998.

To comply with the above requirements, T-Rex Capital contracted a Phase I (A and B) Archaeological Survey. Phase IA was intended to review literature and records for the potential presence of significant cultural resources. Phase IB composed of a systematic Archaeological Survey of the Study Area in order to identify any possible cultural resources that may exist.

This portion of the property is located on the north shore of Coral Bay Harbor. The area of concern is located at the intersection of foot slopes, a narrow strip of low lying and modified land and the ocean (Figures 4 – 10). The Soil Conservation Service classifies the soils for most of Lease Area A into the mapping unit Ustorthents which are soils that have been altered from their natural state by humans, in this case cut activities to level foot slopes and infilling of low lying areas adjacent to the shore. Most of the flora has been cleared for human activity, and the flora that does exist is secondary growth. The eastern most part of the property is regularly affected by tidal influence, while the westernmost part of the property appears to contain areas that are periodically inundated. The central part of the subject property is contained on highly modified toe slopes of the hills to the north; this area contains numerous buildings (Figures 11 - 13) including a school, fire department, restaurant and shops, as well as a ball field.

Soltec was informed by the Virgin Islands State Historic Preservation Office (SHPO) that their

search of the Archaeological Site Files indicated that no archaeological sites of record were located within the proposed development area.

The Phase I Archaeological Survey performed for the Proposed Project Site indicates that no potentially significant archaeological contexts are present within the surveyed areas. The absence of archaeological contexts within Parcel 10A was surprising given that this location was likely an attractive location for a prehistoric settlement. Although extensively disturbed, no evidence was found to indicate that a prehistoric settlement existed at this location. Ordinarily, materials such as shell and ceramics are found even in highly disturbed contexts. Historic and modern artifacts were recovered from the shovel tests and test trenches, but these were few in number and small in size. Four undecorated Whiteware sherds, six clear and four green glass sherds were recovered in Parcel 10A. The exterior ferrous metal sheath of a roller for crushing cane was also found in Parcel 10A. This artifact was re-utilized in more recent times by filling it with concrete and setting rebar in its center.

**Conclusions and Recommendations**

No undisturbed archaeological contexts were encountered during shovel and mechanical subsurface testing. The materials recovered were both historic and modern and within disturbed contexts. The testing performed indicates that numerous cut and fill episodes have been made within the Project area. The stripping and/or deflation of top soil is in part, evidenced by exposed parent rock or its presence at near surface depths. The western part of the subject property is less modified, but even in that location, we encountered a number of push piles. Multiple fill episodes were also documented in the Project Area, as evidenced by the heterogeneity of the soils and unsorted inclusions, such as rock and modern materials.

## MARINE BENTHIC SURVEY

Coral Harbor lies in the northwestern corner of Coral Bay, a large inlet of sea on the southeastern side of St. John USVI. Presently Coral Harbor is used as a mooring field for over 50 vessels, primarily private sailboats. Much of the remainder of Coral Bay, to the east, is part of the St. John National Park. Between February 24 and March 10, 2007 a marine benthic survey was conducted in Coral Harbor by Elizabeth Kadison. This survey was done as part of the planning and design of a marina which is proposed for the northern end of the harbor. An updated benthic survey is presently being done.

**Benthic Cover:**

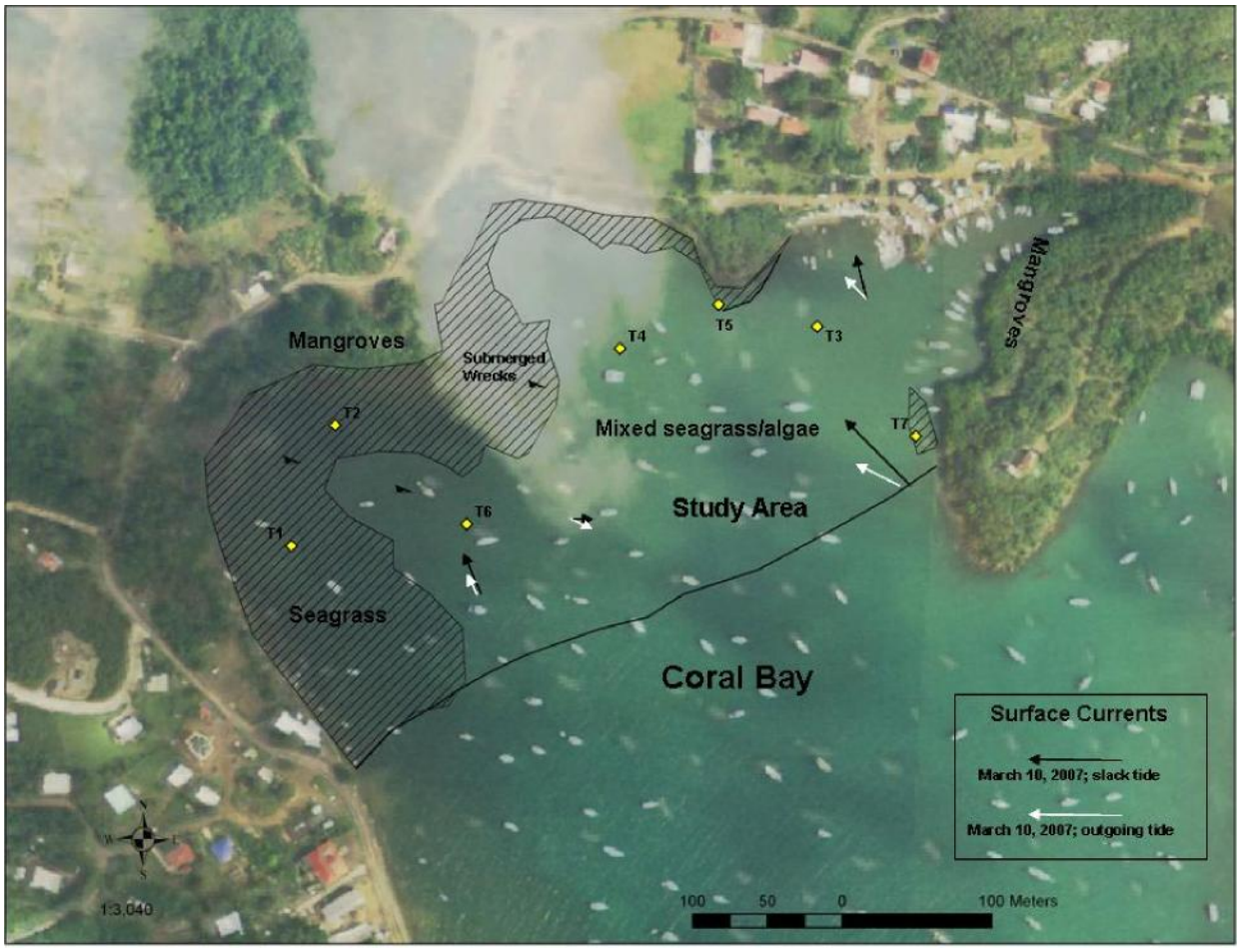
An area of over 11,250 $m_2$ was surveyed in Coral Harbor (Figure 1). Two benthic habitats made up most of the bay. The shallow areas (< 1m) where large boats could not anchor and sunlight penetrated the entire water column at least part of the day were covered in thick turtle grass with little or no other plant species. The substrate beneath was sand and sand/mud. These areas were relatively near shore and were characterized by data from transects 1, 2, and 5. The deeper areas (>1m), had a softer, more muddy substrate and were covered by sparse turtle grass mixed with small patches of manatee grass, paddle grass and several species of algae, all at variable percent cover. Small (<10 cm) *Siderastrea* corals were scattered in the shallow areas. Turtle grass was by far the most common seagrass and was found throughout the harbor but at a much lower percent cover in the central and eastern areas where the water was deeper and the majority of vessels were moored. Algae in these areas was fairly diverse. "Scarred" areas were found

throughout the central portion of the bay, scoured completely of seagrass. These were undoubtedly due to anchor and anchor chain damage and can be seen in the aerial photo below as light patches.

**Fishes:**

The total number of fish observed over 7 belt transects was 108. Juvenile yellowtail snapper were the most common fishes observed in the thick turtle grass areas. The most common fish observed in the mixed seagrass/algae community were the damselfish. Juvenile grunts and small parrotfishes were found commonly in both habitat types and larger were observed around submerged debris. In the turtle grass areas however 67% of the snappers and only 10% of the damselfishes were observed. An additional 12 species of fish were observed on the roving dive (Table 4) to bring the total fish diversity to 25 species in 16 families.

**FIGURE 1. A MAP OF CORAL HARBOR OUTLINING THE STUDY AREA, THE HABITAT TYPES FOUND, AND THE TRANSECT LOCATIONS.**




Invertebrates encountered during the roving dive included juvenile spiny lobster *(Panulirus argus)*, cushion sea stars *(Oreaster reticulates)* and long-spined urchins *(Diadema antillarum)* (Appendix ID). A snowy egret was observed on the site during the survey.

**Currents:**

The movement of water in and out of Coral Harbor is complicated, however some factors were

apparent in the survey. The shallowness of the bay and wave action indicates that thorough mixing of the water column occurs. The water moving across the very shallow areas of the bay and on the surface is wind driven. Coral Harbor is open to a predominantly southeast wind which pushes surface water inshore. The water presumably leaves the bay through the deeper central and eastern channels. Surface currents measured over five min at 4 sites ranged from 0.15 m/sec to 0.02 m/sec during outgoing tide (10:32-11:15 am) and 0.18 m/sec to 0.08 m/sec at slack tide (2:44-3:05 pm). The wind throughout the day was ESE at 12-18 knots. The direction and relative speed of measured currents are diagrammed in Figure 1.

**General Conclusions:**

Although far from the pristine gin clear cove described from childhood memories of middle-aged St. Johnians, Coral Harbor holds a variety of sea life. Despite the bottom damage due to anchors and ship groundings, debris littering the beaches and sea-floor and the dark clouded water, the turtle grass beds in the shallow water on the western edge of the harbor remains very healthy, as do the stands of mangroves on the northwestern and eastern shorelines. The deeper areas, historically also covered in turtle grass, appear to be the most impacted by moored vessels and upland development. Water visibility during the survey was limited to less than 0.5m in the central bay and the bottom substrate was soft mud. Still, a variety of algae and grasses grew.

The existing mangroves, seagrass and algae are integral in maintaining the integrity of the harbor by stabilizing sediment, reducing particle loads and absorbing dissolved nutrients. In addition mangroves filter and trap pollutants and stabilize the coastal land and both mangroves and seagrass provide habitat for mollusks, crustaceans and juvenile fishes. As with all coastal areas in the Virgin Islands, Coral Harbor should be developed and managed in an extremely progressive and responsible manner. Coral Harbor is part of the greater Coral Bay, much of which is in the St. John National Park. Sensitive coral reefs exist outside the harbor proper in Johnson Bay and Round Bay and healthy seagrass beds cover much of the deeper open water of the bay, supporting sea turtles, queen conch, lobster and juvenile fishes. Strict adherence to erosion control, dredging guidelines and waste water treatment must be achieved and maintained. If developed and managed responsibly, a marina could have a long-term positive effect on Coral Harbor by alleviating anchoring and reducing the garbage and untreated sewage entering the bay. Recommended R/O pipe route:

The high saline effluent that will be generated by the reverse-osmosis operation will undoubtedly affect the benthic organisms immediately proximal to the area of discharge and change the community structure and composition significantly.

A diagram of the optimal route for the in-take/out-flow discharge pipe of the proposed reverse osmosis plant is shown in Figure 2. The recommended route would exit the shoreline on the eastern end of the bay and the in-take would be 150m and the out-flow discharge should run out at least 200m. This route transverses primarily mud, algae and sparse seagrass. There is much less seagrass on the eastern side of the bay than along the western shoreline and the water depth is greater. The route traverses what is currently used as a channel for dingy traffic. There would be no anchoring of vessels in this area which would lower the potential for pipe damage.

The outflow pipe should run as far south as possible so that hypersaline water exits near the mouth of the harbor. Wave action in this area is generally strong and would help mix the effluent with surrounding water. The pipe should be perforated for 10m at the distil end, helping to relieve pressure and disperse and dilute the effluent over a larger area. Finally, the discharge effluent should be monitored on a regular basis and strict adherence to set salinity (and pH)

discharge levels should be followed. If the effluent exceeds the set limits the system should be shut down until the problem is corrected and dilution levels are met.

**FIGURE 2**


**Monitoring Program:**

A comprehensive marine monitoring project will be an integral part of any development plan. It is important that baseline data be collected well before land excavation and alteration begins, and also that monitoring of sediments, nutrients and essential habitat be continued beyond all construction phases. Results of all monitoring should be tabulated and should be available to developers, contractors, and engineers in a timely and on-going basis. In addition, results of environmental monitoring should be provided to CZM every 3 months, or when sediment, nutrients or salinity exceeds baseline values by 50% or more. The following components should be part of the monitoring plan:

Two sediment monitoring sites should be established in Coral Bay; one in Coral Harbor and a control site outside of the development area in the Hurricane Hole or Johnson Bay (Figure 3). Sediment traps should be collected monthly for at least two months before construction begins, biweekly and after every rainfall of 1" or more in a 24 hour period during the construction phase, and again monthly for a minimum of 6 months after construction terminates.

Nutrients will be monitored at the sediment monitoring site and the control site established outside of Coral Harbor. A pre-construction range of phosphates and nitrates should be determined and sites should be tested on a monthly basis following EPA approved guidelines after construction begins. Concurrently temperature, pH, turbidity, salinity and dissolved oxygen should be measured. In addition salinity should be measured monthly at the saline effluent discharge site and 10 m intervals up and down current of the discharge pipe, out to 50m.

The seagrass beds in Coral Harbor will be monitored on a quarterly basis after construction begins for up to one year after it is completed. The perimeter of the shallow beds should be mapped during the surveys and compared to baseline maps created pre-development. Five quadrats will be used within the shallow seagrass areas to detect changes in the benthic species composition and the percent cover of turtle grass.

Three one hour roving fish surveys will be conducted by divers on SCUBA once quarterly after construction begins. The surveys should include all species encountered and the abundance of each. Divers should swim around mangroves, seagrasses and algal communities, using a kayak or dingy if necessary to cover the entire area. Surveys should be combined for each quarter and compared to baseline surveys conducted pre-development in the area.

Dredging will result in the re-suspension of sediments in the bay, which even short term may cause dramatic changes in water quality. It is important that silt barriers are stringently used and maintained during the entire dredge operation and that monitoring is continuous and thorough. Turbidity measurements will be made twice daily during the entire dredging operation at determined sites. The number of monitoring sites will depend on the extent of the dredging; however measurements should be taken directly outside of silt curtains and up and down current of the dredging area. Turbidity can be measured using a secchi disk or a turbidity probe.

## TERRESTRIAL SURVEY

### Parcel 10C:

EcoScience Corporation (ESC) was retained to undertake a terrestrial resource survey of a 3.7-acre tract of land at Coral Bay (Parcel 10C), located in the East End of St. John, U.S. Virgin Islands (Figure 1). In July 2007, a team from ESC undertook field surveys.

The study area is located in the Coral Bay quarter, Estate Carolina, at the community of Coral Bay near the Emmaus Moravian Church. Parcel 10A is located at the intersection of Highway 10 and Highway 107, in the southwest quadrant of the intersection. This Site maintains a forested cover.

No Section 404 jurisdictional surface waters or wetlands were located on the Site.

The diversity of flora is moderately rich in the forested Site. Of seven general vegetation community types found on the island, two (Dry Forest and Mixed Dry Shrubland) are located on the Site. In addition to climate, historic impacts by grazing and agriculture use have likely played a role in diminishing Site diversity. A total of 43 plant species in 24 families were recorded. Of these, 32 are trees or shrubs, eight are vines, and three are herbs.

A total of 17 species of birds were observed within and adjacent to the study area. Of the 18 species of mammals recorded for the Virgin Islands, two species were confirmed to occur at the study area. These consisted of feral goats and donkeys. Two species of reptiles and two amphibians were recorded.

Parcel 10C consists of natural vegetation which may generally be characterized as moderate-aged secondary growth and the Site appears to have historically been used as agricultural or pastoral land approximately 10 to 15 years ago. Vegetation consists primarily of large saplings and small trees which maintain a closed canopy over an understory consisting of a moderately dense vine layer, few shrubs except along woodland edges, and a sparse to absent herb layer.

There were no Mangrove Forest on the Site

Wildlife observations were made during field visits on July 9, 11, and 12, 2007. Observations occurred while walking transects through or adjacent to all habitats using the property roads, survey cuts, trails, and coastline as the primary means of access for observations. Gray kingbirds and bananaquits were commonly observed in multiple habitats. Other common species including the Lesser Antillean bullfinch, yellow warbler, and Zenaida dove were also highly visible. Other species such as the yellow-crowned night-heron were quiet, reserved, and more specialized in their habitat preferences. The cattle egret was only seen in the company of a herd of feral goats that frequents the area.

The only raptor observed in the study area was American kestrel. The kestrel was seen perched atop trees, shrubs, and posts while watching for prey (most likely small birds, grasshoppers, and lizards).

The only species of non-native mammals recorded during field surveys were domestic goat, of which a herd of 15-20 animals was often seen frequenting the area, and donkey, a few individuals of which were seen in the forest of the Site.

Two species of reptiles and two amphibians were observed within the study area during this investigation. The most common reptile observed during the field investigation is the crested anole. Another reptile occasionally observed was the green iguana. The dry character of study area habitats likely limits the local frog population diversity. However, two species were identified by call: the Antillean frog (*Eleutherodactylus antillensis*) and the white-lipped frog (*Leptodactylus albilabris*).

None of the federally and locally listed threatened and endangered species for the U.S Virgin Islands were observed in Parcel 10C.

**Parcel Rem. 10A and 10A-1**

Gary Ray, Ph.D., Virgin Forest Restorations was asked to survey the terrestrial ecological communities of a 7.75 acre area of Parcel Rem. 10A and 10A-1 Estate Emmaus.

The survey included a search for plant and animal species protected both under U.S. Federal statute, namely the Endangered Species Act of 1973, and local law: the Indigenous and Endangered Species Act of 1990, Title 12 VI Code, Chapter 2.

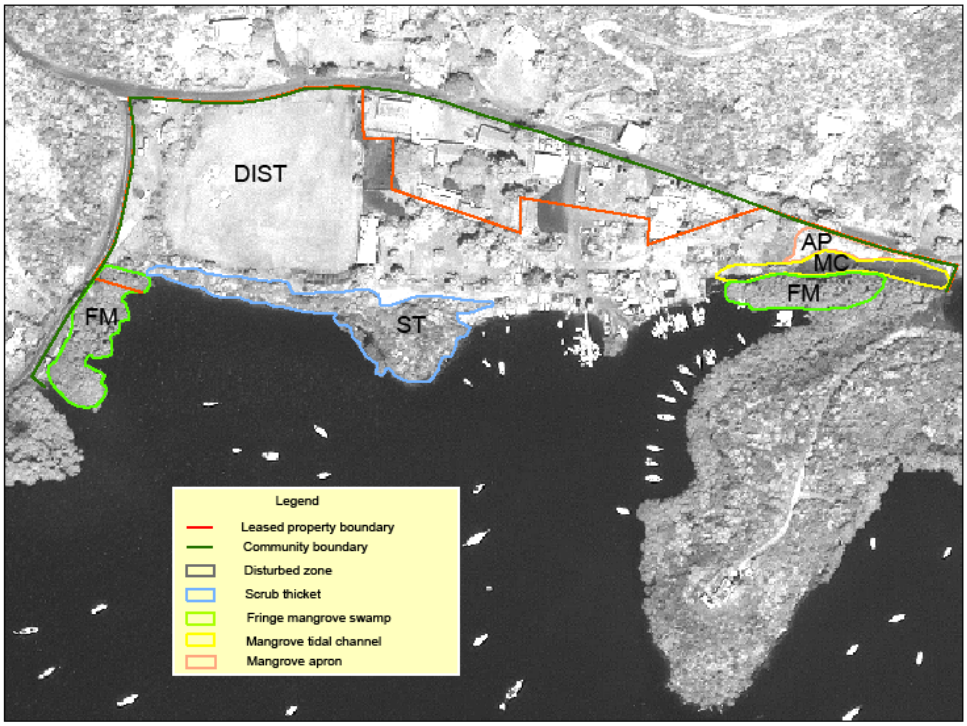
Rem. Parcel 10A and 10A-1 consisted of mostly cleared vegetation or parklands, an open ball field clear of trees except along its perimeter, with several commercial buildings in various locations. Natural communities existed on the coastline, including areas of fringe mangrove lining the shoreline on the western and eastern segments of the property's southern boundary.

Nineteen birds were found in the surveyed areas of which 19 birds are native. Only the chicken, Pearly-eyed thrasher, the Cattle egret, and the White winged dove were introduced. All three native anoline lizards were observed. The ground lizard is also quite common. Cuban tree frogs were heard at night near the restaurant. Bats were not abundant, but two species were observed. Other birds expected, but not seen, included the Great Blue heron, and any of a few species of shorebirds, including plovers and the killdeer.

The ball field commonly included a large herd (more than 30) of sheep. Donkeys are frequently seen on the ball field and along the roadside. Stray cats are also seen here in there in the

shoreline scrub thickets and around the restaurant.

**PLANT COMMUNITY MAP OF PARCEL REM. 10A, AND 10A-1 ESTATE EMMAUS, CORAL BAY, ST. JOHN**




Parcel Rem. 10A and 10A-1 are the least natural. It consists mostly of grazed recreational field, a derelict park, and parking lots surrounding a boatyard, and a restaurant and gift shop complex. The Parcel contained 56 trees consisting of 20 species, 13 of them indigenous and seven exotics. Many of the larger trees were planted. The grandest specimen is a picturesque Rain tree (*Samanea saman*), rooted just east of the basketball court, providing shade for the bleachers at courtside. Also, some large *Ficus* trees grow in an abandoned park seaward of the Guy Benjamin School. Seaward of the park and ball field were the scrub thicket and natural shoreline communities.

Mangroves of this property may be divided into two distinct sub-communities, "fringe mangroves" and "mangrove tidal channel". Fringe mangroves consist entirely of Red mangrove trees, which fringed the shoreline on the west and east sections of Parcel Rem. 10A and 10A-1. The fringe mangrove exhibited occasional inclusions of vines, which were rooted landward, growing seaward. Fringe mangroves commonly front a landward berm, on which many halophytic species thrive. The mangroves on the west section of the property contain abundant White mangrove trees, and the salt-loving shrub, *Bontia daphnoides*. The mangrove tidal channel grows on the perimeter of a tidal channel connecting it with a salt pond to the east of the property. Nothing nut was mixed with Limber caper.

Much of the western and central sections of the property's coastline is rocky. This environment favors halophilic (salt-loving) herbs and shrubs, many growing in rock crevices and around small tide pools. Along this rocky shoreline, we encountered numerous dry coastal herbs, e.g.

Saltgrass, Sea purslane and Nut sedge, shrubs, e.g. Black torch and lianas, e.g. Limber caper. In stony or gravelly areas, Buttonwood and Manchineel were found.

**END OF REQUEST**