CORAL BAY COMMUNITY COUNCIL

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Mitigation of Adverse Impacts to Seagrass

MITIGATION OF ADVERSE IMPACTS TO SEA GRASS BEDS OF CORAL HARBOR

EXECUTIVE SUMMARY

1. The various mitigation actions proposed by applicant to mitigate for the certain damage to the seagrass meadows-- from constructing docks, shading seagrass under boat slips, and increasing boat traffic -- are too small and insignificant in scope to begin to cover a fraction of the lost natural habitat. These proposed actions includes transplanting seagrass and new mooring fields. The benthic mitigation plan does not provide sufficient protection or mitigation by DPNR or Federal standards.

2. The applicant claims that the existing usage patterns in Coral Bay (115 individually moored boats) are causing direct impacts to SAV from improperly installed moorings (1 acre), as well as impacting water quality (bacteria), and indirectly threatening 16 acres of SAV. However, the only evidence supplied by the applicant to support these claims does not support them at all. (Page 4-5) The applicant has demonstrated a maximum of 1/4 acre of direct impacts, no bacterial water quality impact, and no evidence whatsoever to demonstrate current boater/mooring threats to 16 acres of SAV.

3. The applicant has not supplied any of the information necessary to assess the potential impact from construction of a new mooring field. (page 3) We concur with NOAA fully on this point. NOAA requests "details of the proposed mooring plan, type of moorings, and the operation of the mooring field to ensure this will not result in additional impacts to seagrass due to the installation of improper mooring anchors, such as can be seen in areas such as American Yacht Harbor in St. Thomas."

4. US Army Corps of Engineers (USACE) compensatory mitigation standards state "the amount of required compensatory mitigation must be, to the extent practicable, sufficient to replace lost aquatic resource functions" and goes on to state "if ... other suitable metric is not used, a minimum one-to-one acreage ... compensation ratio must be used."

5. Based on an impact of 8 acres (NFWS) and mitigation of 2500 square feet (0.057 acres) the compensation ratio described in the SEG Benthic Mitigation Plan is 0.007-to-1 or less than one hundredth of the required USACE standard.

DISCUSSION OF SEA GRASS IMPACTS AND MITIGATION

During the applicant's response to public testimony, Ms. Amy Dempsey stated that "she found it amusing" that the testifier referred to the 2500 square feet of sea grass transplant as mitigation since it was, she said, not mitigation but rather it was minimization. This note explains the reasons for referring to the 2500 square feet as mitigation, and expands upon prior testimony on inadequate mitigation.

The reason that the sea grass transplantation was referred to as mitigation is that Ms Dempsey called it mitigation within the Major Water EAR, which she prepared. Consider the following statements from the Major Water EAR, Appendix C, Benthic Mitigation Plan:

1. "In order to **mitigate** for the project impacts, seagrasses within the area of impact will be transplanted ..." (Benthic Mitigation Plan, Section II: Objectives)

2. " **MITIGATION WORK PLAN**, **THALASSIA TRANSPLANT**
   Prior to the start of the marina project the piling locations will be marked. Thalassia be collected by divers in large sod units using trowels to cut completely through the root mass, the ideal unit size is approximately 1 sq. ft. and 8"-10" in depth. The sod units will be place (sic) in underwater binds and carried to the transport tray which will be beneath the boat." (Benthic Mitigation Plan, Section VII: Mitigation Work Plan)

3. " MONITORING REQUIREMENTS
   Monitoring the **compensatory mitigation** project site is necessary to determine if the project is meeting its performance standards and to determine if measures are necessary to ensure that **the compensatory mitigation project** is accomplishing its objectives. As per the guidelines set forth in §230.96 the mitigation project will be monitored for a minimum period of 5 years. The monitoring will take place along two schemes: **the monitor of the transplanted seagrasses** ..."
   (Benthic Mitigation Plan, Section X: Monitoring Requirements)

Since (a) Ms Dempsey discussed the sea grass transplant within the Benthic Mitigation Plan, and (b) she explicitly referred to the transplant as mitigation, and (c) she described the "Thalassia Transplant" within the section entitled "Mitigation Work Plan", and further described it as "compensatory mitigation" then it is surprising she found it "amusing" that others believed the Thalassia transplant was, in fact, mitigation.

Perhaps the applicant no longer views the 2500 square feet of sea grass transplant as mitigation. If so, the EAR should be modified and resubmitted to reflect this fact, since it is actually the sole mitigation for the substantial, multi-acre sea grass impact that is attributable to the project described in the application.

IS THE APPLICANT ENTITLED TO CLAIM MITIGATION FROM THE "MOORING FIELD" ?

There are multiple defects in the applicant's discussion of the "mooring field" which lead one to question how the applicant can make the claim that "The most important mitigation measure will establishing (sic) a long-term controlled mooring plan in Coral Bay." The mooring field, although frequently mentioned in the Major Water EAR:

- has been described by the applicant in public testimony as preliminary and subject to change
- is not explicitly within the scope of the project according to the description written by the applicant
- has not been described in any detail within the application and appendices
- has no certainty of being executed based on documents supplied by the applicant

If the "mooring field" is not described in sufficient detail, is not explicitly an element of the proposed development, and the applicant has offered no evidence of legal authority to construct it, then how can the applicant be allowed to claim mitigation from its installation?

The applicant describes the proposed marina development in the following words, taken from Form "L&WD-4 Major Project Summary Data", Section II Summary of Proposed Development, Question 3:

> **3. Describe the proposed development**
> **The St. John Marina is a 145 wet slip marina. Supporting land based businesses including ample off street parking, restaurants, Customs and Border Protection office, a marina office, marina engineering facilities, Marina Security office, crew shower and locker facilities, apartments to support marina management, proper solid, hazardous and liquid waste management, proper stormwater management, and proper fueling that are addressed in a separate Major Land CZM Permit Application.**
> ***Note that the description of proposed upland activities is provided in this form only for reference and area* (sic) *not the subject of this application.***

Nowhere in this description of the proposed development is there any mention of a mooring field. In fact, the applicant chose to include mention of "proposed upland activities" which were not the subject of the Major Water application but declined to make any mention of a "managed mooring field" for 75 boats. Furthermore, the application to the Army Corps of Engineers makes no mention of the mooring field.

The applicant, when asked a question by a CZM commissioner about the Mooring Field, responded, in part, by saying that the drawings of the Mooring Field were subject to change regarding location, spacing, and size and indicated that the plan was highly preliminary, rather than final. However, although there are **no detailed drawings** depicting details of the mooring field, its installation procedures, calculations of the size of boats it will support, the environmental impact of its installation, or anything else required to assess its consistency and impacts under the CZMA, the applicant nonetheless claims **substantial mitigation** from its installation. Page 3-4 of the Major

Water EAR makes the following statement and claims: "**The most important mitigation measure will establishing (sic) a long-term controlled mooring plan in Coral Bay to eliminate illegally moored and anchored boats and substandard moorings that currently are having a significant impact on seagrasses and water quality.**"

Accepting, for the moment, that the CZM deems that the applicant may claim mitigation from installation of the mooring field, there is still the question of the extent of this mitigation. The applicant's statement quoted above is made with utterly no evidence, data, or rationale that support its conclusions. The following points must be made:

- the applicant has not supplied any data on the number and location of "illegally moored and anchored boats" or the number and location of "substandard moorings"
- the applicant has not supplied any evidence (other than a single photograph, undated, unknown location, with no measurement scale) that existing moorings are "having a significant impact on seagrasses and water quality".
- the applicant has provided no drawings or description of the location, design, or environmental impact stemming from construction of a new mooring field, nor the environmental impact (if any) associated with removal of 115 existing, established moorings.

In fact, the applicants own statements regarding water quality in the harbor seem to belie the conclusion that water quality, particularly bacterial contamination, is a significant concern. The applicant has presented data that purport to provide evidence of degradation in water quality due to waste discharge from boats moored in the harbor. The applicant makes the following statement regarding the data:

> "Water Quality measurements have been made in the project area on a regular basis since mid-May 2012. **A total of 20 measurements have been taken thus far. The results are shown in the table 6.05b-2 presented above between 2012 and 2014**. The data shows a highly variable system with fluctuating water quality."

The table referenced in this statement (6.05b-2) is titled "**Table 6.05b-2. Current Velocity Measurements at the Mouth of Coral Harbor**" and is found on page 6-20 of the Major Water EAR. **It has nothing to do with water quality**. In fact, there is no table in the EAR with 20 water quality measurements from 2012-2014 to be found in the EAR. The table reproduced below (6.05d-1) contains what appear to be quarterly water quality samples, presumably collected by DPNR, over a period from 2009-2012 and it has 10 entries, however it contains no data for the period 2013-2014.

Table 6.05d-1. Coral Bay Water Quality Data, Station STJ 53

Date	TSS (mg/L)	Turbidity (NTU)	Fecal Coliform (#/100mL)	Enterococci (#/100ml)	Temp (C)	Salinity (ppt)	D.O. (mg/L)
3/27/09	10.1	1.91	2	8	25.08	37.41	
6/29/09	35	1.63	0	0	29.92	36.23	6.40
10/8/09	2.6	1.99	1	0	29.97	35.72	8.67
6/16/10	4.2	4.17	0	2	29.70	36.15	
3/30/11	3.1	3.58	4	1	28.22	37.10	6.35
7/28/11	4.3	2.24	1	3	29.92	36.25	6.11
6/6/12	11.7	4.64	6	3	30.35	36.57	5.89
7/17/12	20.5	1.23	0	0	30.32	35.44	6.03
8/20/12	23.4	4.23	1	0	30.82	35.49	6.37
12/6/12	18.1	4.64	1	2	28.19	35.49	6.20

We respectfully request that the applicant submit a correction to the EAR by either referencing the correct table, or including the correct table if it was inadvertently admitted. **The public is entitled to review the data supporting any claims of degraded water quality due to waste discharge from moored boats.**

In fact, the data which was submitted do not indicate excessive bacterial contaminants within Coral Bay harbor. The Federal bacterial water quality standard of the EPA for recreational uses is shown below:

CRITERIA ELEMENTS	**Recommendation 1** Estimated Illness Rate 36/1,000		**Recommendation 2** Estimated Illness Rate 32/1,000	
Indicator	GM (cfu/100 mL)	STV (cfu/100 mL)	GM (cfu/100 mL)	STV (cfu/100 mL)
Enterococci (marine & fresh)	35	130	30	110
E. coli (fresh)	126	410	100	320

This standard is taken from "2012 Recreational Water Quality Criteria", U.S. Environmental Protection Agency, December 2012, Publication EPA-820-F-12-061. The "Recommendation 2" threshold level for Enterococci is 32. The samples from Coral Bay were all substantially less than that (ranging from 0 to 8, with a geometric mean of 1.6).

In order to obtain an objective interpretation of the bacterial water quality, based on the data submitted by SEG, we sent the table from the EAR to the contact person identified on the EPA Recreational Water Quality Standards fact sheet:

Sharon Nappier, PhD, MSPH
Microbiologist, Office of Water, Office of Science and Technology
Health and Ecological Criteria Division, Human Health Risk Assessment Branch
US Environmental Protection Agency

Ms. Nappier responded as follows:

> *Dear Mr. Silverman –*
> *If those numbers are actual bacterial counts (cfus), then you would interpret your waterbody to be very clean and meeting our recommended criteria (at least for enterococci).*
> *Thanks,*
> *Sharon Nappier, PhD, MSPH*

Based on the data presented by the applicant, as interpreted by the EPA authority on such matters, one can only conclude that the existing use patterns are not resulting in significant bacterial water quality problems in Coral Bay harbor.

The **sole piece of evidence** offered by the applicant to support a claim that existing moorings are damaging sea grass beds is an undated photograph lacking location data or linear scale. It purports to show a "common foot print" of an individually moored boat. Based on the best estimate of the denuded area in this photograph, using the length of the Thalassia leaves as a scale, the scar appears to be roughly 10' in diameter, equivalent to an area of 75 square feet. If this same scar were found on all 115 moorings the total impact to sea grass from the existing moorings would amount to 8,625 square feet (75 x 115), which is less than a quarter of the amount claimed by the applicant, without any explanation or data to support their claim ("As of last count, there were 115 boats anchored or moored within the bay and these conservatively impact an area of between 34,500 ft2 and 46,000 ft2 based on their anchor drag and rope swing impacts.")

The applicant supplies **no data or evidence whatsoever** to support the claim that the mooring field will "protect ... approximately 16 acres of SAV" (submerged aquatic vegetation). There is no calculation, explanation or rationale offered for the figure of 16 acres of SAV. There is no evidence this SAV is threatened by the existing moored boats, or in need of protection under current use patterns. It is, in fact, highly likely that the re-suspension of fine sediments from the propeller wash of mega yachts could be more damaging to the SAV in Coral Bay harbor than any of the existing uses. The applicant has provided no evidence, data or rationale for the claimed mitigation consisting of the "protection of 16 acres of SAV."

Given the applicant's public statement that the 2500 square feet of *Thalassia* transplant are not mitigation, and given the total lack of evidence that relocating 115 existing moorings will result in a net lessening of adverse impacts to sea grass beds or water quality, it is our considered opinion that the current application offers no mitigation whatsoever for adverse environmental impacts to the benthic habitat, particularly the loss of multiple acres of sea grass beds in Coral Bay harbor.

Alternatively, if the 2500 square feet are accepted as mitigation, then based on NFWS estimate of 8 acres of impact, the mitigation is less than 1% of what is required under USACE rules.