

APPENDIX 13
Report on Navigation, James Robertson

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Specializing in Maritime Security, Safety and Training

March 2, 2015

RE: EXPERT REPORT FOR ACOE PERMIT APPLICATION # SAJ-2004-12518 (SP-JMS)

Prepared by

James (Jim) Robertson (U.S. Coast Guard Retired)
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Credentials:

My name is James Robertson, and I served in the United States Coast Guard from January 1983 through February 2010. From 1998 through 2010 I was the Commanding Officer of four large Coast Guard Stations and two Coast Guard Housing facilities in charge of all safety policies and procedures for each command for all assets and 60-90 employees. I also served as Chairman of the unit's safety board. I was awarded the Coast Guard Meritorious Service Medal, five Coast Guard Commendation Medals, and four Coast Guard Achievement Medals. Since leaving the Coast Guard I founded my own maritime consulting service, Expert Maritime Solutions LLC.

For a complete recitation of credentials and experience, please see my full CV, attached hereto as Exhibit A.

Documents Reviewed:

1. The Army Corps of Engineers Notice.
2. The Coral Bay Community Council's comments on moorings vs. docks
3. The Coral Bay Community Council's comments on the project, copied in relevant part below "CBCC Submittal Final":
 - a. Poor and incomplete Marina design
 - i. No geological survey done, so no real design.
 - ii. Layout was drawn in 2012 by Spring line Architects, and then "stamped" for this application by ATM, using their reputation in EAR.
 - iii. Majority of slips broadside to prevailing wind and waves, dangerous and unusable by boats.
 - iv. Purpose of design was to maximize # of slips, given limited shoreline control – for investor attraction, not for actual vessel use.
 - v. Plans to build mega-yacht portion first, construction could stop there, so there might never be local services.
 - vi. Greater safety of moorings (versus boat slip) in a storm/squall to boats.
 - vii. The lack of impact analysis related to placement of fill material as defined by VI Code.
4. Three Comments/Letters regarding weather, and specifically the effects of storms in Coral Bay (Nicholas 1, Nicholas 2 and Hooper) (from: <http://savecoralbay.com/czm-letters-weather/>)
5. NOAA Wind charts, WeatherSpark.com
6. Caricoos.org

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Opinion/Comments and recommendations:

In review of the proposed construction of a new private commercial marina and mooring docks and anchorage, consisting of vessel 145 slips and 87 Anchor buoys.

Approximate Coordinates:

Latitude: 18.343277° N

Longitude: 64.714555° W

I have personally visited hundreds if not thousands of marinas in my 31 years in the United States Coast Guard and 5 years in maritime private sector, and have seen good planning and construction and have seen bad planning and construction. The proposed Coral Bay Marina is in my professional opinion very bad planning and design. The prevailing winds and seas (as per chart below) are 120 deg or East Southeast 53% of the time and the average wind speed is 11.7 knots which blows directly into Coral Bay. Whitecaps on waves begin to form at 7-10kts, after 11kts of wind, and the seas could be anywhere between 1-4 feet (as per chart below).

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

I based the conditions on an average day in St John (Coral Bay). This does not reflect the event of a Hurricane or Tropical storm. In the event of a Hurricane or Tropical Storm, it is my professional opinion that there would be catastrophic damage caused by the debris from the marina and the vessels, and the cleanup could take months. I have personally witnessed major marinas destroyed by hurricanes, mostly category one and two storms, these marinas would not have been damaged as badly if they were designed correctly. Preparations are a must, major hurricanes like Andrew and Katrina will likely destroy almost everything in their path but we did see that the marinas that were prepared had less cleanup than the ones that did nothing.

Another issue I see with this design, it crosses over $\frac{3}{4}$ of the bay. In my professional opinion this would be a big problem for vessels navigating in and out of the bay, as it gives them very little room to maneuver, which will lead to collisions with other vessels and or piers. This is not taking into account any charted or uncharted coral heads or hazards to navigation; if they are present then that would make transit that much more dangerous.

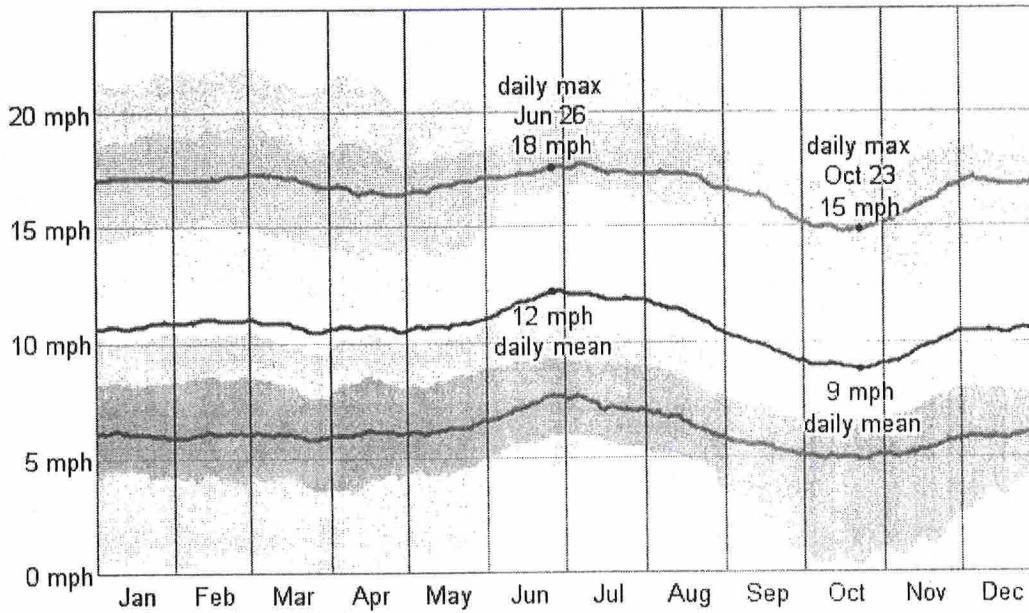
Finally, I have visited Coral Bay numerous times while in the Coast Guard and during leisure time. My personal recommendation would be to consider a place that is better protected under average conditions and will meet the majority of the issues that have been identified.

/s/ James Robertson

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Wind Data



Wind Data from Cyril E. King Airport, St. Thomas, USVI via Weatherspark.com

[View in dashboard](#)

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Wave Data

Month	Average	Minimum	Maximum	Measurements 0-90 Degrees (%)	Measurements 91-179 Degrees (%)	Measurements 180-269 Degrees (%)	Measurements 270-359 Degrees (%)
Apr-11	90.38	68.40	105.40	59%	41%	0%	0%
May-11	109.98	79.40	190.40	2%	97%	1%	0%
Jun-11	110.12	90.40	155.40	1%	99%	0%	0%
Jul-11	100.43	85.40	119.40	4%	96%	0%	0%
Aug-11	104.79	77.40	171.40	9%	91%	0%	0%
Sep-11	101.06	73.40	164.40	26%	74%	0%	0%
Oct-11	106.06	86.40	154.40	4%	96%	0%	0%
Nov-11	101.92	73.40	144.40	18%	82%	0%	0%
Dec-11	91.55	66.40	113.40	50%	50%	0%	0%
Jan-12	97.67	82.40	115.40	12%	88%	0%	0%
Feb-12	102.09	83.40	118.40	1%	99%	0%	0%
Mar-12	98.52	78.40	116.40	16%	84%	0%	0%
Apr-12	107.61	67.40	139.40	8%	92%	0%	0%
May-12	105.52	90.40	121.40	0%	100%	0%	0%
Jun-12	110.24	91.40	131.40	0%	100%	0%	0%
Jul-12	97.08	86.40	117.40	11%	89%	0%	0%
Aug-12	102.61	83.40	162.40	9%	91%	0%	0%
Sep-12	114.57	81.40	232.40	10%	86%	4%	0%
Oct-12	124.87	90.40	233.40	0%	88%	12%	0%
Nov-12	99.75	36.40	139.40	14%	86%	0%	0%
Dec-12	96.60	75.40	123.40	19%	81%	0%	0%
Jan-13	97.61	80.40	116.40	12%	88%	0%	0%
Feb-13	109.52	82.40	123.40	6%	94%	0%	0%
Mar-13	115.42	12.40	355.40	8%	89%	2%	1%
Apr-13	101.04	86.40	123.40	3%	97%	0%	0%
May-13	109.52	70.40	200.40	0%	99%	1%	0%
Jun-13	101.8153	88.4	119.4	1%	99%	0%	0%
Jul-13	100.8509	86.4	122.4	4%	96%	0%	0%
Aug-13	96.83683	83.4	112.4	12%	88%	0%	0%
Sep-13	107.4958	79.4	188.4	12%	88%	0%	0%
Oct-13	108.6218	91.4	134.4	0%	100%	0%	0%
Nov-13	100.1875	70.4	145.4	15%	85%	0%	0%
Dec-13	99.5129	85.4	128.4	9%	91%	0%	0%
Jan-14	100.2065	89.4	119.4	1%	99%	0%	0%
Feb-14	101.2363	87.4	117.4	2%	98%	0%	0%

Caricoos.org – St. John Buoy, Mooring VI104; 6.5 NM SSW of Coral Harbor

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Ocean in Motion: Waves - Beaufort Wind Scale

Beaufort Wind Force	Wind Speed (Knots)	WMO* Wind Classification	Wave Height (ft)	Sea Conditions
0	Less than 1	Calm		Sea surface is smooth and mirror-like.
1	1-3	Light Air		Scaly ripples without foam crests.
2	4-6	Light Breeze		Small wavelets with glassy appearing crests and no breaking.
3	7-10	Gentle Breeze		Large wavelets, crests begin to break and whitecaps are scattered whitecaps.
4	11-16	Moderate Breeze	1-4	Small waves becoming longer and whitecaps are numerous.
5	17-21	Fresh Breeze	4-8	Moderate waves take longer form and there are many whitecaps and some spray.
6	22-27	Strong Breeze	8-13	Larger waves form and whitecaps are common, along with more spray.
7	28-33	Near Gale	13-20	The sea heaps up and white foam streaks off breakers.
8	34-40	Gale	13-20	Moderately high waves of greater length are formed. The edges of crests begin to break into spindrift and foam blown in streaks.
9	41-47	Strong Gale	20	High waves occur, the sea begins to roll and dense streaks of foam form. Spray may reduce visibility.
10	48-55	Storm	20-30	Very high waves form with overhanging crests. The sea is white with densely blown foam. There is heavy rolling and lowered visibility.
11	56-63	Violent Storm	30-45	Exceptionally high waves form and foam patches cover the sea. Visibility is more reduced.
12	64+	Hurricane	45	Exceptionally high waves. The air is filled with foam and the sea completely white with driving spray. Visibility greatly reduced.

* World Meteorological Organization