



# TURRELL, HALL & ASSOCIATES, INC.

MARINE & ENVIRONMENTAL CONSULTING

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## MEMORANDUM

**FROM: TODD T. TURRELL, PE**  
**JOSHUA W. MAXWELL, EIT**

**RE: PREVAILING WIND, WAVES, TIDES & HURRICANES**

Please find the information for the prevailing winds, waves, tides and hurricanes for the Mayaguana excavation site below.

1. Prevailing Winds: Prevailing winds local to Mayaguana, are primarily out of the east and southeast with an average speed of 6-8 knots. The site is located on the leeward side of the island and thus will be protected from the prevailing winds most of the year.
2. Prevailing Swell and Waves: According to the closest NOAA buoy (318 miles ENE) the swell and waves are primarily out of the southeast and range between 1-2 meters. Swell and waves are expected to be significantly less, due to the site's location on the leeward side of the island.
3. Tides: NOAA has interpolated tide estimates for Abraham Bay, Mayaguana, showing an average high tide of +2.1ft (MLLW) and low tide of +0.1ft (MLLW). To facilitate more accurate data local to the site, we are currently collecting tide readings at the military pier adjacent to the subject property. This data will be utilized to establish elevations for mean high water, means sea level, and mean low water for the project site.
4. Hurricanes: There is no documented data for hurricane activity for Mayaguana, however we have included the data of storm frequency for the surrounding islands below. Utilizing the data for surrounding islands we approximate a hurricane or tropical storm affecting the island every 2.65 years and a direct hit every 8.62 years with an average wind speed of 108 mph.

Island	Tropical Storm to Hurricane Ratio	Longest Gap Between Storms	Frequency	Average Years Between Direct Hurricane Hits	Average MPH of Hurricane Hit (sustained winds, not gusts)
Acklins	TS=26, 44.83% H=32 55.17%	17 years 1963-1981	brushed or hit every 2.40 years	once every 6.95 years	112mph
Great Inagua	TS=22, 53.66% H=19, 46.34%	17 years 1908-1926	brushed or hit every 3.39 years	once every 11.58 years	103 mph
Turks and Caicos	TS=35, 54.69% H=29, 45.31%	18 years 1963-1981	brushed or hit every 2.17 years	once every 7.32 years	110mph