runs for each Saffir/Simpson category was then combined to create the MEOW for that storm and direction. The TAOS model assumes an average forward speed of 13 mph, a radius of maximum winds of 40 km (25 miles) and the following parameters in **Table 3.6.**

TABLE 3.6 : Hurricane Parameters used in TAOS Sturm Surge Analysis.

Category	Wind Velocity (mph)	Pressure (mb)
1	85	985
2	100	972
3	125	950
4	145	928
5	179	910

The storm surge maps which are presented here are the raw unsmoothed outputs of the TAOS model. The user will note that for a given stretch of coastline there may be range of surge height values, and it may appear to be difficult to determine the 'exact' value of the surge at the point of interest. This uncertainty illustrates the level of resolution which the model is capable of and indicates the general limits of certainty of the modeling process. The uncertainty of the TAOS model has been shown to be in the order of +/- 20% which is the margin of error representative of the 'state of the art' of storm surge modeling.

An examination of the MEOW surge maps indicate that the south coasts of Tortola, Anegada, Jost Van Dyke and the north and southwestern coast of Virgin Gorda are the most susceptible to hurricane storm surge. North tracking hurricanes will produce the highest surge on the south coast of Anegada and Jost Van Dyke. The south coast of Tortola and the north and southwestern coast of Virgin Gorda will have the highest surge as a result of northwest tracking hurricanes.

Based on the range of storm surge heights produced at the coast by the different category hurricanes it was possible to produce storm surge susceptibility maps which show the relative exposure of the islands of the BVI to storm surge hazard.

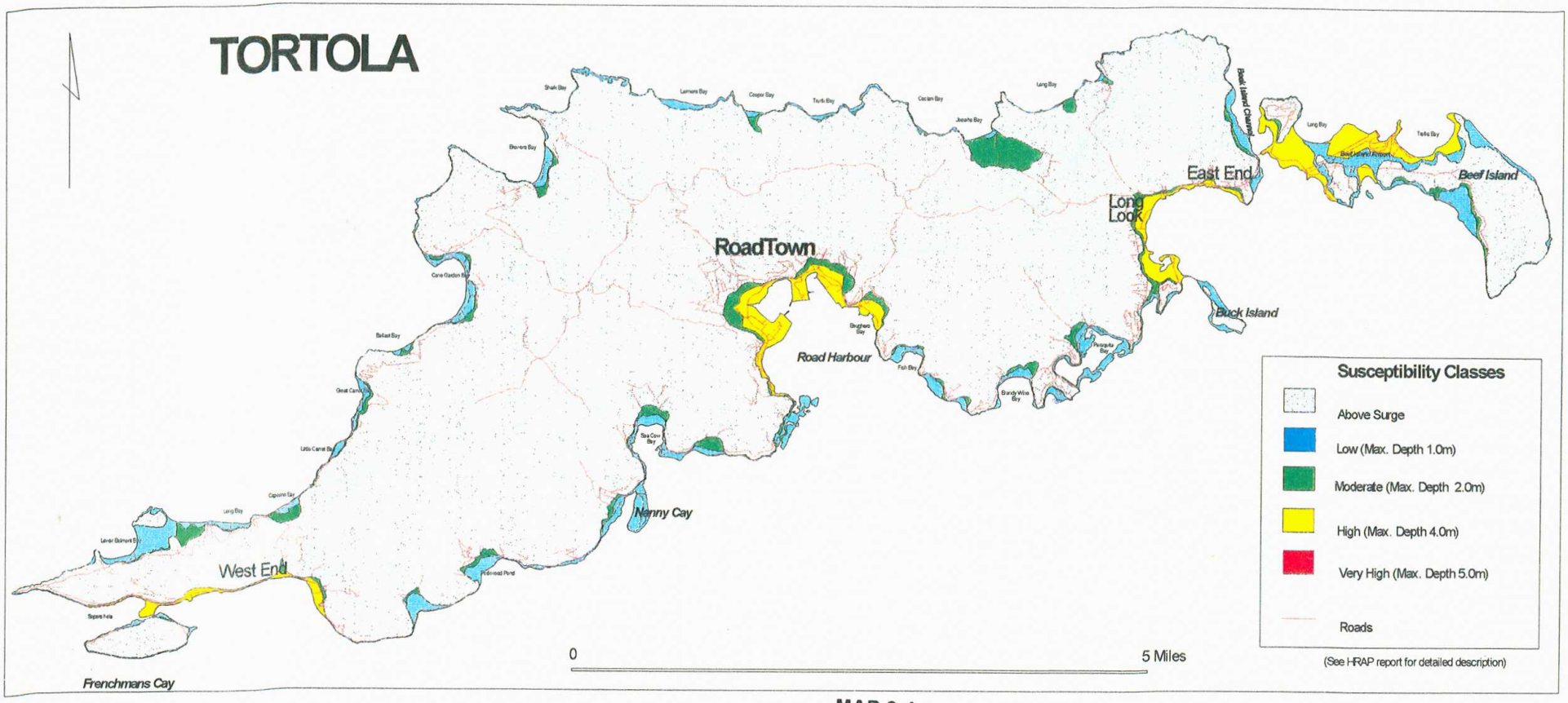
By projecting the derived storm surge height at the coast inland it is possible to establish the areas that will be inundated. A measure of the degree of hazard susceptibility can be obtained from the depth of inundation at the coast. The maximum depth of inundation expected, along the coastlines studied for each of the five hurricane categories, was obtained from the MEOWS. Therefore it was possible to establish the maximum depth of inundation that can be expected to be produced by that hurricane, and represents the worst case scenario for a given hurricane category, called the maximum of MEOWS. This depth can then be used to estimate the extent of maximum possible inundation from that category of hurricane.

The areas of possible inundation was used as the basis for establishing relative storm surge hazard susceptibility classes. It was decided to create four degrees of susceptibility low, moderate, high and very high.

Since the difference in storm surge height at the coast for each hurricane category was small for most of the coastline of the BVI, the susceptibility classes were established by grouping categories 1-3 together and categories 4-5 together. The result was susceptibility classes that represented areas of possible inundation associated with a range of hurricane categories, with the maximum depth expected to occur at the point of lowest elevation within the susceptibility zone The results of this process is shown in Table 3.7 below and Maps 3.4 to 3.7.

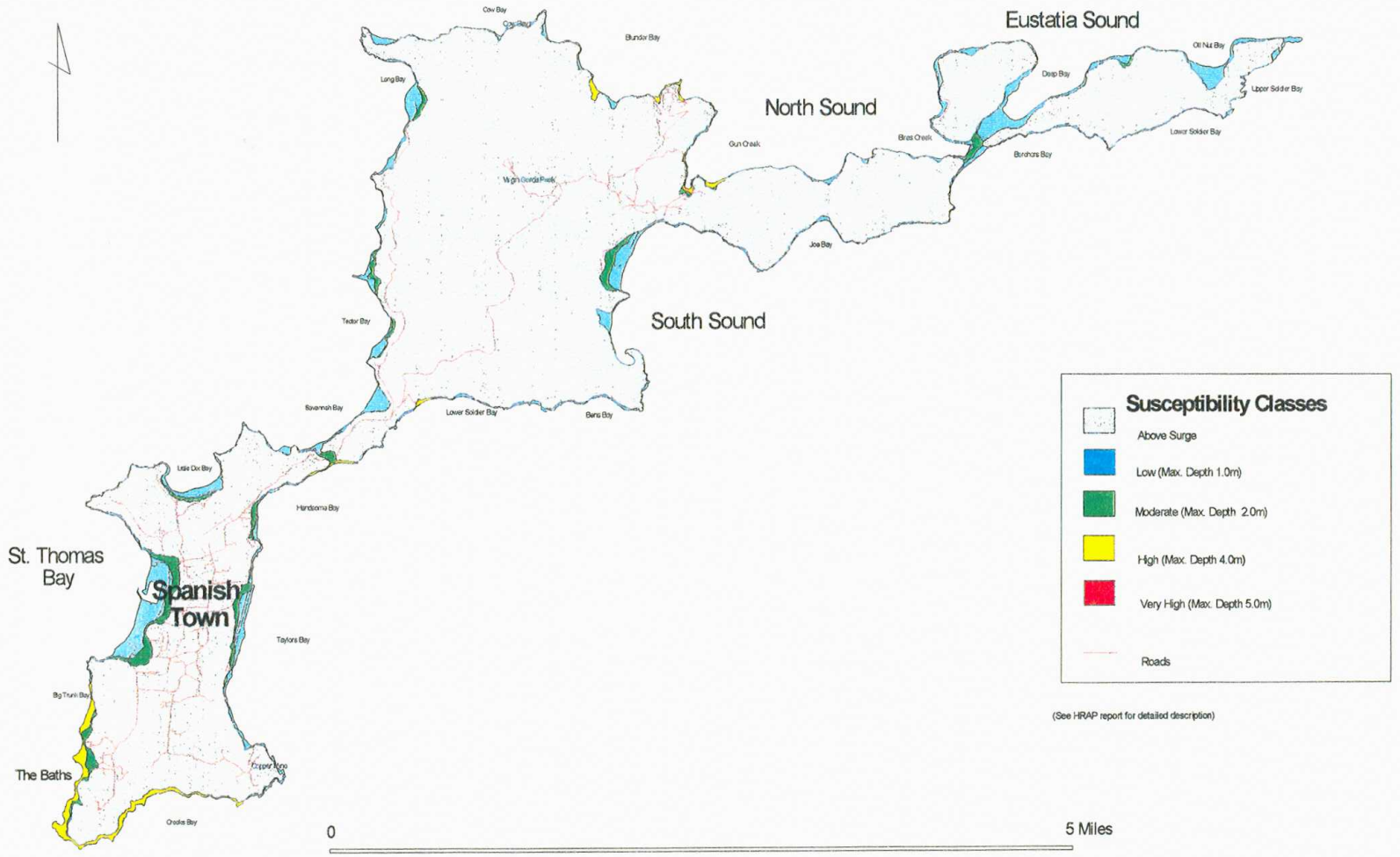
TABLE 3.7: BVI Storm Surge Susceptibility Classes

Susceptibility Class	Hurricane Category	Maximum Inundation Depth (meters)
VERY HIGH	1-3	3 5
	4-5	5.0
HIGH	1-3	2.0
	4-5	4.0
MODERATE	1-3	1.5
	4-5	2 0
LOW	4-5	1.0
NO SIGNIFICANT SURGE	None	-


TORTOLA
RoadTown
Road Harbour
East End
Long Look
Beef Island
Buck Island
Nanny Cay
West End
Frenchmans Cay
Susceptibility Classes
Above Surge
Low (Max. Depth 1.0m)
Moderate (Max. Depth 2.0m)
High (Max. Depth 4.0m)
Very High (Max. Depth 5.0m)
Roads
0
5 Miles
(See HRAP report for detailed description)

MAP 3.4

VIRGIN GORDA



MAP 3.5

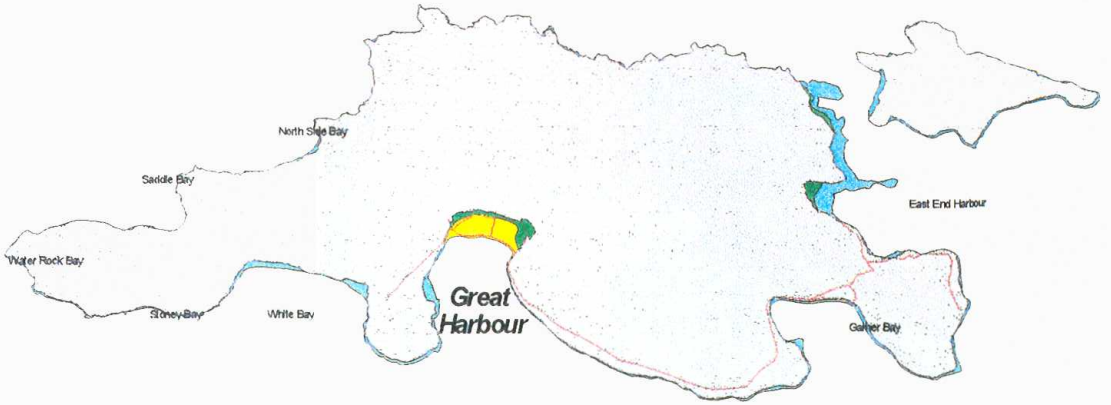
Susceptibility Classes

- Above Surge
- Low (Max. Depth 1.0m)
- Moderate (Max. Depth 2.0m)
- High (Max. Depth 4.0m)
- Very High (Max. Depth 5.0m)
- Roads

(See HRAP report for detailed description)

JOST VAN DYKE

Little Jost Van Dyke



5 Miles

MAP 3.6