

## HOW TO READ STORM SURGE AND FLOOD MAPS

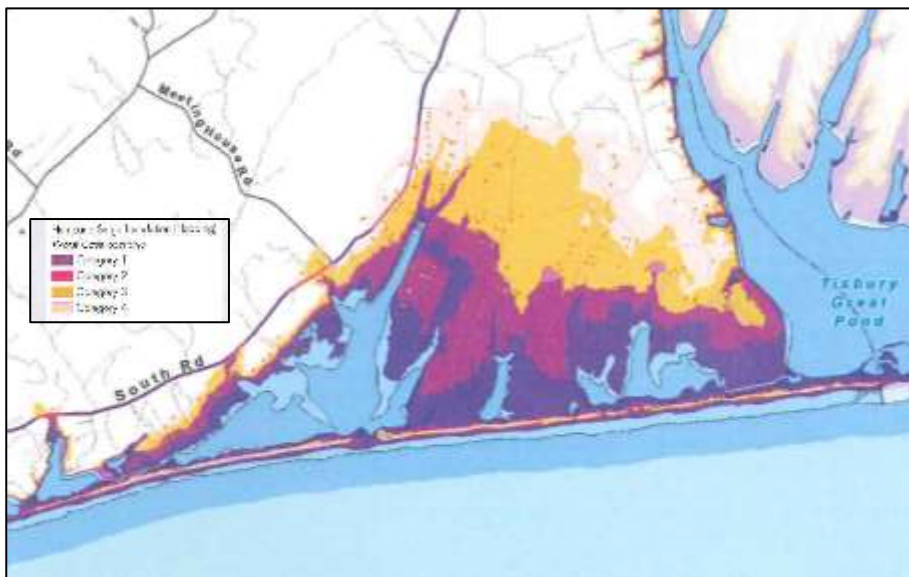
### Hurricanes and Tropical Storms (Tropical Cyclones) – SLOSH maps (Storm surge maps)

- Hurricanes come with winds of 74-200 mph circulating counter-clockwise. Tropical storms bring wind speeds of 39-73 mph.

- In a hurricane, storm surge waters come up very suddenly, with enough force to move structures and with enough surprise to endanger those trapped by the rising waters. In 1900, the entire city of Galveston, Texas was inundated by storm surge, taking 8,000 – 10,000 lives.



- The U.S. Army Corps of Engineers has modeled storm surge in maps known as SLOSH. MVC has used the SLOSH projections to make local surge maps, noting our roads and other facilities. The different colors on the maps represent a different hurricane category (1,2,3,4) making landfall from any direction. In reading the surge maps, the situation looks dire for the whole island. However, the SLOSH maps are made to show vulnerability for a particular road, harbor, etc. as though that were the landfall site. In reality, the storm will only make landfall from one direction, not from all sides.



In the sample at left, the lands just north of Chilmark Ponds are shown to be quite vulnerable to storm surge. Low, flat lands are the most vulnerable, especially if there is also funneling of the surge, as happens in narrow bays and estuaries.

The colors represent Categories 1-4 of hurricane strength.



Questions?  
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### Coastal Storms (Nor'easters) – FIRM maps (Flood maps)

- Nor'easters bring sustained winds up to 40 mph and gusts up to 70 mph. Although nor'easters don't pack the punch of hurricanes, they can bring danger and considerable damage and modification of the coastline. They last longer; typically up to 3 days, compared to 6-12 hours of hurricane winds.
- MVC has mapped the 100-year VE zones and AE zones, and 500-year flood areas from FEMA. The FEMA maps are called FIRM maps (Flood Insurance Rate Maps). FEMA has mapped vulnerability for purposes of setting rates for flood insurance. The maps are used in regulating the towns' Floodplain Districts. Towns are required to participate in the program in order for their homes and businesses to purchase the FEMA-subsidized flood insurance. All MV towns but Chilmark participate.
- The 100-year storm doesn't happen once in 100 years. The still-water flood height has a one percent chance of being exceeded in a year. The 500-year storm has a .5% chance of being exceeded in a year.

The sample map at right illustrates most of the terms used in the FIRM labels (The V zone lies seaward):

- Velocity (V) zones are subject to a 1% chance of inundation characterized by one or more of the following:
  - Wave height 3 feet or more
  - Wave runup depth of 3 feet or more
  - Within the splash zone 30 feet landward of a seawall
  - Entire extent of the primary frontal dunes
- VE zones are V zones with an elevation of water depth (top of wave height)
- A zones are subject to a 1% chance of inundation with waves less than 3 feet in height.
- AE zones are labeled with an elevation of water depth.
- The LiMWA (Limit of Moderate Wave Action) further divides the A zone into wave heights more or less than 1.5 feet (and less than 3 feet).



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