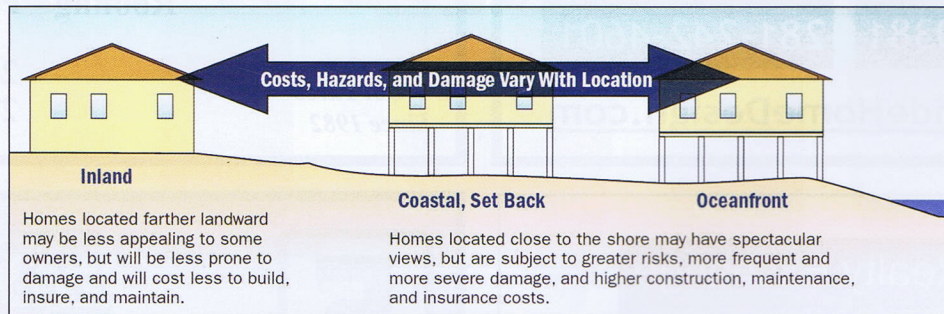


# Design for Flood & Wind...

Even if the Risk of Flood Seems Remote Because there Hasn't Been Rain in Months



FEMA illustration demonstrating risk variables in coastal zones. *Courtesy Photo*

By Carolin Santangelo

Seven years ago this month I began contributing monthly to *The Islander*, except for brief interruption to its publishing history because of Hurricane Ike. The *Islander* is commended for commitment to this space, educating coastal residents about building and construction issues unique to the island. Recently I have visited with prospective homeowners who were unfamiliar with the topic, so worth revisiting is the requirement for flood and windstorm in addition to conventional homeowners' insurance.

Whether buying or building, be aware that Galveston Island falls into FEMA Flood Hazard Zones and is governed by Texas Department of Insurance for windstorm coverage. Texas homeowner policies EXCLUDE flood loss, and federal grants are available only if the community is declared a disaster area by the President.

Our lives here on the coast seem priceless most days of the year. Once or twice a year, when the insurance bill arrives, we wonder whether it is enough, or too much – coverage, not price! The appearance of a tropical storm in the Gulf is another day we question our home's insurance coverage! By then it may be too late to change.

Federal Insurance Rate Maps (FIRM) delineate flood hazard zones for coastal communities. Zones determine insurance rates, and home design. FIRM maps are used by your banker, designer and builder, municipality, insurance agent, land surveyor and engineer, all assisting with definition of a home's position and elevation relative to the shoreline.

Flooding can occur inland, as we've seen in northern states this year. However, flood levels, velocity, and wave action in coastal areas tend to be more damaging than inland flooding. Homes in coastal areas must be designed and constructed to withstand higher wind loads and more extreme conditions, therefore, will cost more to design, build, repair, maintain and insure, due to exposure to this environment.

Changes to flood maps are being previewed by Louisiana and Mississippi, the result of an intensive five-year study after hurricane Rita. It is likely that Texas also will see changes to its maps after completion of studies of Ike's high water and wave action.

Engineering requirements, applicable to coastal flood and wind zones, assist in ensuring that construction and repairs are a success, and that a building resists damage over its lifetime. FEMA construction guidelines identify that flat or low-sloped roofs are subject to increased uplift, which can result in damage to interiors. In Galveston, flat roofed buildings

demonstrated some of Ike's worst affects. Moderately sloping hip roofs are most desirable to combat this effect.

Base Flood Elevation (BFE) defines the expected elevation of floodwater and wave effects during that one percent chance in any given year, of a 100-year flood. Residences must be built above the BFE, and habitable use of enclosed areas below is prohibited, and can lead to additional damage and loss. Your boathouse structure, and below the BFE, your garage and contents, or enclosed foyer, is uninsured.

Flood zones are generally referred to as "V" or "A". Maps of coastal Texas were last updated in 2002. In simplest terms, zones are defined as: "V" zone: closest to the shoreline, and subject to wave action and high-velocity flow and erosion during a 100-year flood.

"A" zone: subject to flooding during a 100-year flood, with conditions less severe than the V zone.

"X" zone: areas not expected to flood during a 100-year flood.

Current A and V zone definitions include the suffix "E" (e.g. AE, or VE), and a numeric value, defining the BFE actual elevation above mean sea level.

Flood insurance requirements are most stringent in V zones. Comparing equivalent houses constructed to current windstorm and flood code: an A zone homeowner may pay \$400 annually, and the homeowner across the street in V zone may pay close to \$4000, for the same coverage. If considering a home or lot, and all other factors are similar, it may pay to spend more for property that possesses A zone over V zone. Evaluate long-term costs associated with higher rates and risk. Over time, owners of the riskiest sites may additionally spend thousands more on maintenance and erosion control. Beachfront views are fabulous; though this location will have you paying a premium for flood insurance and protection.

BFE is the MINIMUM elevation the lowest horizontal member of the structural may be set and be insurable. FEMA 499 recommends "freeboard;" that the lowest horizontal structural member should be elevated above the BFE, and IRC requires one foot above BFE. FEMA has adopted a new term: design flood elevation, or DFE, to describe this higher elevation. Insurance costs can be reduced by exceeding design and construction practices. An elevation certificate, provided by a registered public land surveyor, defining the flood zone and BFE, is required prior to construction, and again prior to receipt of occupancy permit. Ask to see