

# Building to Flood Standards



Oak Island 1999 Hurricane Floyd

# Topics to be Discussed

- What is a flood zone
- Flood zones in Oak Island
- Special Flood Hazard Areas (SFHA)
- Flood insurance
- Base Flood Elevations (BFEs)
- Building in flood zones
- Enclosures under structures
- Non-conforming structures
- Substantial damage
- Illegal rooms below BFEs
- Permits
- Elevation Certificates
- Equipment & Fixtures below BFEs

# What is a Flood Zone

**Flood zones** are land areas identified by the Federal Emergency Management Agency (FEMA).

Each **flood zone** describes that land area in terms of its risk of **flooding**.

Everyone lives in a **flood zone**—it's just a question of whether you live in a low, moderate, or high risk area.

# Flood Zones

## **Oak Island is comprised of five flood zones:**

- Zone X – Areas determined to be outside the 500-year flood zone
- Zone X500 (Shaded X) – Areas of 500-year flood: .02% chance of flooding
- Zone A – Areas with 1% annual chance of flooding (No BFE determined)
- Zone AE – Areas with 1% annual chance of flooding (BFE determined)
- Zone VE – Areas with 1% chance of flooding with velocity hazard, wave action greater than 3 feet (BFE determined)

# Special Flood Hazard Areas

Are areas identified on the Flood Insurance Rate Map as flood areas that has a 1% chance of being equaled or exceeded in any given year. The 1% annual chance flood is also referred to as the base flood or 100-year flood.

## **High-Risk Areas**

# Flood Insurance

Homes and buildings in high-risk flood areas with mortgages from federally regulated or insured lenders are required to have flood insurance.

In high-risk areas, there is at least a 1 in 4 chance of flooding during a 30-year mortgage.

A lender can require flood insurance, even if it is not federally required.

# Base Flood Elevation

Base flood elevation (BFEs) is the elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year.

BFEs are measured in feet above sea level.

The BFE is the regulatory requirement for the elevation or floodproofing of structures.

Town of Oak Island's flood ordinance requires structures to be elevated to BFE plus 1 foot.

# Building in VE Flood Zones

When building in a VE zone the structure must be elevated so that the girder (first horizontal structural member) is at BFE + 1 foot (Oak Island required freeboard).

For example: If a structure is in a VE16 flood zone the bottom of the girder has to be at  $16' + 1' = 17'$  above sea level.

This does not mean the structure will be 17' in the air.

You must take in consideration the grade height above sea level. Meaning, if the grade is at 10' above sea level the bottom of the girder will only need to be 7' above grade.

# Building in AE Flood Zones

When building in an AE flood zone the structure must be elevated so that the finished floor is at BFE + 1 foot.

# Enclosures Under Structures

VE Zones: Oak Island's flood ordinance permits enclosures underneath these structures, but the walls must be designed to break away. However, you may want to check with your insurance company before doing so. \$\$\$\$

AE Zones: Oak Island's flood ordinance permits enclosures underneath these structures, the walls do not have to be break away, but flood vents must be installed (1sq. in. per 1sq. ft.; minimum of 2 of flood vents).

These areas can only be used for building access, parking, and storage.

# Non-Conversion Agreement

A non-conversion agreement is required for enclosures under homes located below the base flood elevation.

**These agreements must be recorded.**

Town of Oak Island

**OWNER Non-Conversion Agreement:** for Areas below the Design Flood Elevations Flood Zones: AE, and VE Flood Zones

**Building Permit Number** \_\_\_\_\_

**Property Owner** \_\_\_\_\_

**Property Address** \_\_\_\_\_

**PID#** \_\_\_\_\_ **Lot** \_\_\_\_\_ **Block** \_\_\_\_\_ **Section** \_\_\_\_\_

**Base Flood Elevation** \_\_\_\_\_ **feet (NAVD) Map Panel** \_\_\_\_\_ **effective date** \_\_\_\_\_

**In consideration for the granting of a Permit for the above structure, the Property Owner agrees to the following:**

1. That the enclosed area below the base flood elevation shall be used solely for parking of vehicles, limited storage, or access to the building and will never be used for human habitation without first becoming fully compliant with the Flood damage prevention ordinance in effect at the time of conversion.
2. That all interior walls, ceilings, and floors below the Base Flood Elevation shall be unfinished or constructed of flood resistant materials
3. That mechanical, electrical, or plumbing device shall not be installed below the Base Flood Elevation.
4. The walls of the enclosed areas below the Base Flood Elevation shall be equipped with at least two vents which permit the automatic entry and exit of floodwater with total on AE zones and engineered break away wall design in VE zones. The vents shall be on at least two different walls and the bottoms of the vents shall be no more than one foot above grade.
5. I understand it is illegal to change or convert the area below the lowest floor to a use or dimension different from the use or dimension authorized in the building permit and different from the requirements as set forth in the current Flood Damage Control Regulations, Section 18 Article IV, Oak Island Code of Ordinances
6. Upon reasonable request, allows Oak Island personal entry into the enclosed area for inspection.
7. That this Nonconversion Agreement becomes part of Permit # \_\_\_\_\_.

\_\_\_\_\_  
Signature of Property Owner

\_\_\_\_\_  
Date

North Carolina, Brunswick County

I, \_\_\_\_\_, a Notary Public for Brunswick County, North Carolina, do hereby certify that \_\_\_\_\_ personally appeared before me this day and acknowledged the due execution of the foregoing instrument.

Witness my hand and official seal this the \_\_\_\_ day of \_\_\_\_\_, 20\_\_.

Seal \_\_\_\_\_

My commission expires: \_\_\_\_\_, \_\_\_\_\_, 20\_\_.

# Non-conforming Structures

Are structures that are located below the current BFE. These structures may have been compliant at time of construction, but due to FIRM map changes are now non-compliant.

These structures can be maintained, renovated and have additions, as long as all work does not equal 50% of the value of the structure (**substantial improvement**).

If it is determined that the work being done is substantial improvement, then the structure must be elevated to the current BFE + 1 foot.

# Substantial Damage

In the event a non-conforming structure is damaged where the cost of repairs is equal to or exceeds 50% of the value of the structure, the structure must be elevated to BFE + 1 foot.

Also, if the structure is ocean front, it now has to meet CAMA setbacks from the Oak Island's static vegetation line.

The value of the structure can be determined by appraisal, tax value, or the building inspector can assess the value.

# Illegal Rooms

It is not uncommon to find rooms that have been constructed below BFE. Unfortunately, and for Oak Island to maintain its participation with the National Flood Insurance Program, these rooms must be brought into compliance with the flood regulations. Failure on Oak Island's part to take corrective actions can cause the suspension or revocation of the Town's participation in the National Flood Insurance Program.

This loss would prevent new flood policies from being written through the program and possible cancellation of current policies. Which, will affect mortgages and the marketability of properties located in flood zones.

# Permits

Before starting any work, contact Development Services, 910-278-5024, to see if a permit is required.

Any work requiring a permit within a flood zone must be reviewed for compliance with the flood ordinance and a flood permit issued. This permit is issued in conjunction with the building permit.

# Elevation Certificates

Elevation Certificates are required when constructing a structure in special flood hazard area.

There are a minimum of 3 elevation certificates required.

- Preliminary Elevation Certificate
- Under Construction Elevation Certificate
- Final Elevation Certificate

# Preliminary Elevation Certificate

A preliminary elevation certificate is required prior to the start of construction. It is based on existing site grade and construction drawings.

This certificate is used to determine if the proposed structure is compliant with the flood regulations and if it is found to be compliant, a permit will be issued.

# Under Construction Elevation Certificate

This certificate is required within 7 days of the BFE being established; girder system installed on structures in the VE zones or the first floor system installed on structures in the AE zone.

The purpose for this certificate is to verify the structure is in compliance with the BFE. It is also set in place to help minimize cost if the structure is found to be non-compliant and needs to be raised.

# Final Elevation Certificate

This is required at the completion of the project.

It states finished grades adjacent to the structure, lowest horizontal structural member, lowest floor elevation, next higher floor elevation, and lowest equipment, i.e. water heater, AC equipment, electrical panel...

A Certificate of Occupancy cannot be issued without a Final Elevation Certificate.

# Equipment & Fixtures Below BFES In VE-Zones

Mechanical equipment and plumbing fixtures must be locate above BFE + 1 foot in VE-zones.

Outdoor showers and sinks that do not connect to a sewer systems are permitted below the BFE.

Electrical services a main disconnect only, light switches, and code required receptacles are permitted below the BFE. Electrical services with a combination of meter/panel board are not permitted below the BFE. Electrical receptacles in storage rooms below the BFE are not permitted .

# Equipment & Fixtures Below BFES In AE-Zones

Mechanical equipment is not permitted, but ducts that are designed to prevent water from entering or accumulating during flood events are permitted.

Plumbing fixtures are permitted if the flood rim of the fixture is above BFE + 1 foot.

Electrical is same as VE-zones except one receptacle is permitted in a storage room below BFE.

# Other Equipment Permitted Below BFEs

Electrical panels for water dependent structures such as docks, piers, boatlifts.

Electrical equipment for swimming pools.

Water and sewage pumps.

This equipment may not be insurable.

# Last Comments

- Always check with Development Services for permitting.
- If a contractor does not want to get a permit, question it.
- When all jobs are finalized an inspection notice and/or Certificate of Occupancy will be issued from Development Services....ASK FOR IT.



**FOR QUESTIONS**  
**Call Development Services**  
**910-278-5024**