

FEMA FLOOD ZONES, TOWN AND STATE FLOOD ZONE REGULATIONS

INTRODUCTION

The following guidelines have been compiled from regulations and bulletins of the Federal Emergency Management Agency (FEMA), the Massachusetts Emergency Management Agency (MEMA), the Massachusetts State Building Code (780 CMR), the International Residential Code, 2009 Edition (IRC), and the Town of Scituate Zoning Bylaws. The intent is to acquaint residents, designers, builders and realtors with general parameters governing new construction and renovation and/or expansion of existing construction in flood prone areas of the town. Preliminary inquiries can also be directed to the Scituate Building Department or the Scituate Coastal Resource Officer. However, please note the regulations are both complex and specific and homeowners should consult with professionals experienced in design and construction of residential projects in flood zones before proceeding.

FLOOD ZONE MAPPING

FEMA flood zones, as described on the following pages, are shown graphically on mapping available on the Town of Scituate web site using the following navigation:

- In your browser, search scituatema.gov
- Select Online Services.
- Select GIS Viewer; a map of the Town will display.
- Select FIND on left side of screen.
- Select LAYERS on left side of screen. Make sure "FEMA pending final 2016" is checked.
- Enter street name (don't put in St., Rd., etc.) and click on; drop-down list of addresses will display.
- Click on Parcel ID for subject address.
- Click on green "Zoom to" arrow.
- Click on I (Information) button on right side of screen (just above hand tool symbol).
- Click on property on map.
- The menu display on the left will show the property's Flood Zone Type (AO, AE, V or X), click on this.
- Detail information will then display. The Base Flood Elevation for the property is the 5th line down from the top. (Disregard the decimal point location – 1.500 = 15.00)

LETTER OF MAP AMENDMENT (LOMA)

There is a process by which a property owner can apply for and receive relief from inclusion within a flood zone, and/or designation of a particular elevation requirement if such relief is

warranted. The instrument for this is called a Letter of Map Amendment (LOMA). To access information on the LOMA process, use the following navigation.

- In your browser, search fema.gov
- Select Flood Insurance from display.
- Select Information for, then select Property Owners.
- Select Letter of Map Amendment.

This will bring you to a general discussion of a LOMA and the LOMA process.

For a direct route to the online LOMA application including instructions on how to fill it out and what information is required to complete it (e.g. an Elevation Certificate):

- In your browser, search fema.gov/MT-EZ
- You're there.

FEMA AND TOWN OF SCITUATE FLOOD ZONES

1. FEMA Flood Zones are of two main types: V (velocity) Zones where water is assumed to be rushing and wave height is in excess of 3' during a severe storm event and A Zones where water is assumed to be flowing with wave heights between 1.5' and 3' in a severe storm event. There are also AO Zones (the O stands for "overwash") considered subject to shallow flow with no significant wave height, and the X Zone deemed not subject to flooding.
2. Each Zone designation (except X) is accompanied by an elevation above mean sea level. Mean sea level is the average sea level between high tide and low tide, including all lunar and other variations. This point is considered as the "0" datum. The current system is NAVD88 - instituted in 1988 - and current FEMA mapping and information for Scituate is based on the NAVD88 elevations. For example, a structure designated as within the VE 16 Zone would have to comply with regulations pertaining to a Velocity Zone with a base flood elevation (E) of 16' NAVD.
3. Scituate also has a Town-specific Flood Plain and Watershed Protection District where new construction is prohibited, except for water related uses and accessory uses to pre-existing dwellings. However, the ZBA can grant a special permit for substantial improvement of existing structures which legally existed in the District as of March 2, 1992. **(Zoning Bylaws, Section 470.6.F)**. The District boundaries are shown on a map entitled "Town of Scituate, Massachusetts, Flood Plain and Watershed Protection District, 1972", available in the Town Engineering Office or at the Office of the Building Inspector. **(ZB, S 470.3)**.

FEMA, STATE AND TOWN FLOOD ZONE REGULATIONS

1. A renovation or repair project that exceeds 50% of the assessed (or appraised) value of the structure (not including land value), is termed a "**substantial improvement**". This threshold is

significant, since if it is exceeded, the entire structure – new and existing – must comply with current regulations for its Flood Zone. **(780 Commonwealth of Massachusetts Regulations, R105.3.1.1, R322.2, R322.3).**

2. In an AO Zone, for new construction or substantial improvement, the lowest living floor level, must be elevated above the highest grade adjacent to the foundation to match or exceed the flood elevation number for the Zone. **(780 CMR R322.2.1.3)** For example, in an AO2 Zone, the lowest living floor (including areas where utilities are located) can be no lower than 2 feet above the highest grade adjacent to the foundation.
3. In an AO Zone, any crawl space or other space below the floor level established as above cannot be lower than the highest grade adjacent to the foundation. In an existing structure, this may mean filling in an existing crawl space or basement. Foundation walls above grade must be provided with “flood openings” (refer to Item 8. for definition) to allow water pressure to equalize on both sides of the foundation. **(International Residential Code R322.2.2)**
4. In all A Zones, “**For lateral additions that are a substantial improvement**, only the addition shall be elevated so that the lowest floor, including basement/cellars, is located at or above design flood elevation.” **(780 CMR R322.2.1.4)**
5. In Coastal Dunes/ Coastal Wetlands Resource Area “**For all lateral additions, even those that are not deemed a substantial improvement**, the addition shall be elevated so that the bottom of the lowest structural member of the lowest floor... is located at the elevation required by the Order of Conditions of the local Conservation Commission.” **(780 CMR R322.4.5)**
6. In an AE Zone, for new construction or substantial improvement, the lowest living floor must be elevated 1' above the FEMA flood elevation for the Zone. **(IRC R322.2.1.2)** Below this elevation, only parking and incidental storage are allowed, and there can be no utilities (heating, hot water, electrical, etc.) located below this elevation.
7. In an AE Zone, for new construction or substantial improvement, there can be no constructed level – basement, crawl space, garage, storage, etc. - with an elevation below the lowest surrounding grade of the land abutting the foundation **(IRC R322.2.1 Exception)**. To comply with regulations, new construction (and improved or repaired construction if the 50% “substantial improvement” threshold is exceeded) must have the first living floor elevated 1' above the FEMA base flood elevation **(IRC R322.2.1.2)** and basements and crawl spaces must be filled to comply with the above.
8. In an AE Zone, enclosed areas, including crawl spaces, basements, garages, storage areas, etc., filled to the grade required above but which are below the FEMA flood elevation must contain flood openings to allow the water to pass through to equalize pressure. There must be a minimum of two such openings on opposite sides of each crawl space or basement division if the space is divided. Clear area of each flood opening shall be 1 square inch for every 1 square foot of enclosed area served **(IRC R322.2.2)**.

9. **NOTE: In the case of a FEMA sponsored project (e.g. an elevation grant),** foundation design for all qualifying projects in AE Zones (new construction or substantial improvement) is governed by **American Society of Civil Engineers Regulation (ASCE) 24-14.** This effectively eliminates all solid foundation walls in favor of pilings, columns or piers.
10. In a V Zone, the required elevation is not measured to the floor level but to **the underside of the lowest structural member.** Typically this is the top of piling or pier elevation. To meet the requirements of the State Building Code, the bottom of the lowest structural member must be 2' above the FEMA base flood elevation for the Zone. **(780 CMR R322.3.2.1)**
11. In a V Zone, **any project constituting a substantial improvement** shall require the entire structure, new and existing, to be elevated as above.
12. In a V Zone, **“For lateral additions that are not a substantial improvement,** only the addition shall be elevated so that the bottom of the lowest horizontal structural member of the lowest floor...is located at an elevation that is at least two feet above the design flood elevation.” **(780 CMR R322.3.2.5.)**
13. In a V zone, **all new or newly elevated construction must be supported on piles or concrete piers,** to allow water to flow under **(IRC R322.2.3),** with no other construction below the specified flood elevation, except the supporting piers or piles, minimal cross-bracing only if required by best engineering practices, access stairways and break-away latticework or similar lightweight enclosures **(IRC R322.3.4).**
14. In a V Zone, permitted uses of the ground area under the house are limited to parking, access and incidental storage. **(IBC R322.5)**

END