



# OSAGE COUNTY EMEGENCY MANAGEMENT AGENCY

## FLOODPLAIN MANAGEMENT FACT SHEET

### (NEW RESIDENTIAL STRUCTURES IN THE FLOODPLAIN)

#### How does building in the Special Flood Hazard Area (SFHA) affect the design standards of my building?

Residential structures built in the SFHA will have to comply with the Elevation Requirements of the National Flood Insurance Program (NFIP). This requirement also requires that all utilities servicing the building must also be located above the Base Flood Elevation (BFE).

The three basic elevation options available for typical construction practices are: *Elevation on Fill*, *Elevation by Enclosure* (crawlpace), or *Elevation by Column* (reinforced masonry or wooden). Which elevation technique is appropriate for your development will be determined by the flooding conditions (velocity, depth, and duration) as well as the physical conditions of the site (soil type, topography, and ground cover). The architect, engineer, or builder designing your home and creating the blueprints will need to evaluate these site conditions and determine the appropriate elevation type for the site. Remember, there are more elevation options than just the three mentioned here.



Fill



Enclosure



Column

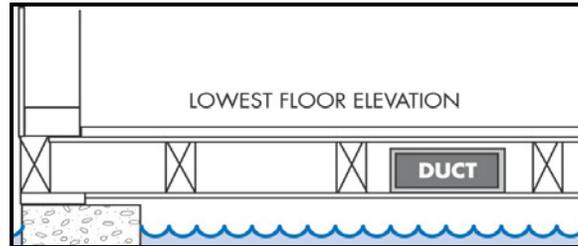
To assist property owners wanting to elevate the structure using the fill elevation technique, FEMA has created a Technical Bulletin 10-01 titled "*Ensuring Structures Built on Fill In or Near Special Flood Hazard Areas Are Reasonably Safe From Flooding*" that can be found at the FEMA.gov or at [www.osagecountyma.com/pages/floodprogram.htm](http://www.osagecountyma.com/pages/floodprogram.htm). This Bulletin will stipulate the compaction requirements and other engineering parameters that will be required for this elevation technique. Please remember for new construction, unless a Letter of Map Revision – Based on Fill (LOMR-F) has been obtained prior to the beginning of the construction of the structure, the lowest floor must be one (1) foot above the BFE in SFHA's. If the fill is going to be placed in the Regulatory Floodway then a "No-Rise" analysis and certification must be submitted prior to issuing the FPDP. In Zone A and Zone AE no additional documentation is required before issuing a permit for the placement of fill. If a LOMR-F is going to be submitted to FEMA for the placement of the fill, in order for the community to certify the Community Acknowledgment form of the MT-1 application, the requirements for fill placement described in Technical Bulletin 10-01 must be met and documentation provided to Osage County.

#### How are building utilities protected in the SFHA?

FEMA has created many documents to help the design professional protect the building utilities from flood damage. Enclosures below the BFE are allowed in the SFHA if the enclosure is only being used for parking, access to the structure, and limited storage. The enclosure must also be constructed using flood resistance materials, have proper flood openings, and all utilities / machinery must be elevated above the BFE.

To assist with these requirements FEMA has created a Technical Bulletin 11-01 titled “*Crawlspace Construction for Buildings Located in Special Flood Hazard Areas*” that can be found at the same websites listed above.

If using the enclosure / crawlspace elevation technique it must be noted that any below floor HVAC forced air ducts qualify as utilities / machinery and must comply with the additional elevation requirements of Osage County’s floodplain management ordinance.



(Diagram taken from the 2008 “Quick Guide” created by the State Emergency Management Agency)

### **Other Sources of Information**

The two Technical Bulletin’s listed previously will assist the property owner and design professional with the proper construction techniques for elevating a structure on fill or on an enclosure.

To assist with the protection of the building utilities so that they also comply with the floodplain ordinance, FEMA Publication 348 titled “*Protecting Building Utilities from Flood Damage – Principals and Practices for the Design and Construction of Flood Resistant Building Utility Systems*” dated November 1999 was created.

Two fact sheets created by FEMA titled “*Building with Flood Damage Resistant Materials*” and “*Raise Electrical System Components*” will also assist those who choose to elevate on an enclosed area foundation.

Please note that utilities / machinery are not only considered to be the public utilities servicing the building such as the electrical, gas or telephone lines, but also the furnace, hot water heater, outside air conditioner condenser, central ventilation ducts, main circuit breaker, individual electrical circuits inside the structure, plugs, etc. This was not intended to be a complete list of items that would be considered utilities / machinery.

Manufactured homes placed in the SFHA also need to comply with the floodplain management ordinance. FEMA publication P-85 titled, “*Protecting Manufactured Homes from Floods and Other Hazards – A Multi-Hazard Foundation and Installation Guide*” dated November 2009 will assist with the compliance issues associated with mobile homes.

To assist the professional designing a new structure in the SFHA, FEMA has created publication 15, titled, “*Design Guidelines for Flood Damage Reduction*” dated December 1981 and publication 54, titled, “*Elevated Residential Structures*” dated March 1984 to assist them in determining the best building techniques to protect the structure based upon the building site conditions.

All the above listed materials can be found at FEMA.gov or at:

[www.osagecountyma.com/pages/floodprogram.htm](http://www.osagecountyma.com/pages/floodprogram.htm)