

Rationale for Elevation Freeboard

The Code which accompanies the Flood Damage Prevention Ordinance contains “freeboard”, or an extra level of protection above the base flood elevation (the so-called “100-year flood”). Based on flood events around the country, including Arkansas, there have been many incidents in which flood have surpassed the 100-year flood.

There are several reasons why floods are more severe than expected:

1. There is not enough data to be able to predict the 100-year flood.
2. The climate is changing, resulting in more frequent floods of greater magnitude.
3. Development, both inside and outside the floodplain, is causing greater flood peaks.
4. The methods of estimating flood frequencies are either imprecise or they contain large margins for error.

Therefore, the ordinance your community is asked to adopt as a result of Map Modernization or for other purposes contains a default freeboard of 2 feet (3 feet for floodproofing). Communities may elect for a reduced freeboard or no freeboard at all.

But there is also another reason for adopting a freeboard – reduced flood insurance costs. Below is an illustration of the insurance savings resulting from a 2 ft. freeboard?

In the first example, the single family residence is placed in an AE Zone, which shows base flood elevations (BFEs) on the flood map. This premium is based on 2005 insurance rates.

Residential Structure Single Family \$100,000 insurance on structure Post FIRM AE Zone Premium No basement or enclosure		
<u>Lowest Floor</u>	<u>One Year</u>	<u>15 Years</u>
At BFE	\$616	\$9240
+ 2 feet	\$236	\$3540
Savings	\$380	\$5700

In the next example, the single family residence is place in an A Zone, which does not show flood elevations on the flood map. Notice, that by building at least 2 feet above the highest adjacent grade, flood insurance rates are reduced by more than half.

Residential Structure Single Family
 \$100,000 insurance on structure
 Post FIRM Zone A Premium
 No basement or enclosure

Residence Elevated but no BFE provided

<u>Lowest Floor *</u>	<u>One Year</u>	<u>15 Years</u>
1 feet above grade	\$1066	\$16440
+ 2 to 4 feet above grade	\$ 496	\$ 7440
Savings	\$ 570	\$ 9000

Residence Elevated with BFE

+2 feet above est. BFE	\$ 236	\$ 3540
Savings vs. no BFE	\$ 260	\$ 3900

Residence with no elevation information

Uniform rate	\$2100	\$31515
Savings varies with Above	\$1865 to \$1035	\$27972 to \$15075

Generally, the higher the structure is elevated, the more expensive it is. Costs of added materials alone increases the price. But there is added safety and the costs of flood insurance may, in the long run, offset added construction costs. Sometimes there is a very short timeframe to offset those costs. And when it comes time to sell the house or business, it's much easier to sell a house which is safer and carries a relatively low cost for flood insurance.

It is strongly recommended that communities adopt the default elevations in the Flood Damage Prevention Code.