

Elevating a structure can prevent or significantly reduce flood damage. Properly elevated and constructed, a raised floor foundation can help keep a home far above flood waters. In addition, a raised floor can provide significant savings in flood insurance premiums. Many homeowners have incorrectly assessed flood risks to their property. The Federal Emergency Management Agency (FEMA) estimates that 10 million households are located in flood-prone areas. But between 20% and 25% of all flood insurance claims are paid to people living outside the high-risk areas. According to FEMA, there is a 26% chance of experiencing a flood during the life of a 30-year mortgage compared to a 4% chance of fire.

In the face of mounting flood losses and escalating costs to taxpayers for disaster relief, Congress created the National Flood Insurance Program (NFIP) in 1968. The federal government makes flood insurance available to NFIP participating communities that adopt and enforce ordinances to reduce future flood risks. This insurance is available to all owners of insurable structures whether in or outside the floodplain.

It is the task of FEMA to identify and map flood hazards nationwide. Flood Insurance Rate Maps (FIRMs) distinguish several flood hazard zones, including the Special Flood Hazard Area, defined as an area inundated by a flood that has a 1% chance of



being equaled or exceeded in any year. This benchmark is also called the Base Flood Elevation, or BFE. The fundamental NFIP requirement for every participating community is that any new or substantially improved residential or commercial building must have its lowest floor elevated to or above the BFE on the FIRM.

By elevating a structure to meet NFIP requirements, a property owner can reduce the annual flood insurance premium by hundreds of dollars. The higher the floor elevation, the lower the flood insurance premium. Over the life of a mortgage, this can result in significant savings. However, elevating to or above the BFE does not eliminate the requirement to purchase flood insurance in a Special Flood Hazard Area.

Considering other options – slab atop dirt fill or slab on a backfilled perimeter wall – the raised floor may be the most practical and cost-effective way to protect your property and meet local building ordinances in flood-prone areas. Regardless of the foundation you choose, raising the floor to (or above) BFE can help avoid costly mitigation measures such as relocation, demolition, or rehabilitation in the aftermath of a flood.

For more information on flood risk and flood insurance, visit [www.fema.gov](http://www.fema.gov).



Raising a house can be a costly option for the homeowner. This slab-on-grade home in St. Tammany Parish, Louisiana, was raised at a total cost of approximately \$150,000. A matching grant from FEMA's Pre-Disaster Mitigation program pays 75% of the expense to raise a home, with the homeowner bearing the remaining 25% of the cost.



Tropical Storm Isidore flooded the slab-on-grade home on the right. The raised floor home on the left stayed dry.

## REDUCE FLOOD RISK AND INSURANCE PREMIUMS WITH A PRACTICAL RAISED FLOOR

There are substantial savings in annual flood insurance premiums when a home is raised above the base flood elevation (BFE), as Table 1 illustrates. Actual savings could be even greater because the Federal Emergency Management Agency expects flood insurance premiums to increase 5% per year to cover anticipated flood claims.

Dwelling Value	SINGLE-STORY RESIDENTIAL CONSTRUCTION				MULTI-STORY RESIDENTIAL CONSTRUCTION			
	At BFE <sup>2</sup>	Plus 1 foot <sup>3</sup>	Plus 2 feet <sup>3</sup>	Plus 3 feet <sup>3</sup>	At BFE <sup>2</sup>	Plus 1 foot <sup>3</sup>	Plus 2 feet <sup>3</sup>	Plus 3 feet <sup>3</sup>
\$ 75,000	\$727	\$461	\$299	\$264	\$537	\$330	\$299	\$264
\$100,000	\$747	\$481	\$319	\$284	\$557	\$350	\$319	\$284
\$125,000	\$767	\$501	\$339	\$304	\$577	\$370	\$339	\$304
\$150,000	\$787	\$521	\$359	\$324	\$597	\$390	\$359	\$324
\$175,000	\$807	\$541	\$379	\$344	\$617	\$410	\$379	\$344
\$200,000	\$827	\$561	\$399	\$364	\$637	\$430	\$399	\$364
\$225,000	\$847	\$581	\$419	\$384	\$657	\$450	\$419	\$384
\$250,000	\$865	\$599	\$437	\$402	\$675	\$468	\$437	\$402

SOURCE: Table provided by Alpha Insurance LLC, Gretna, Louisiana (www.alpha.com).

1 National, unadjusted rates for Flood Zone A. Includes \$30 policy fee.

2 BFE is Base Flood Elevation or the elevation that a flood will reach with a 1% probability any given year.

3 Plus 1 foot means the living area floor elevation is at least 6 inches above BFE, Plus 2 feet means at least 18 inches above BFE, and Plus 3 feet means at least 30 inches above BFE.

## A RAISED FLOOR MORE THAN PAYS FOR ITSELF OVER A 30-YEAR MORTGAGE

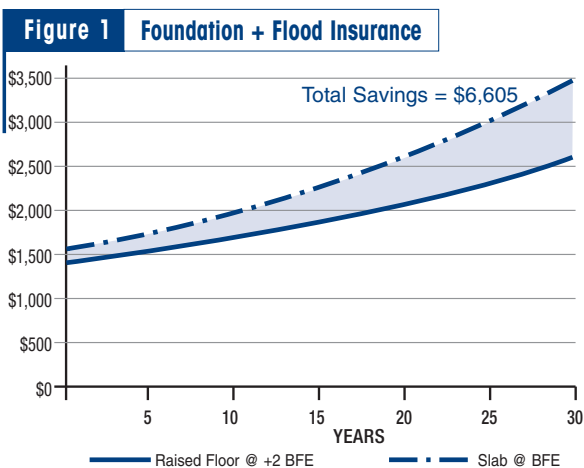


In a flood hazard area, the raised floor can mean real savings in annual flood insurance premiums, lower annual housing costs, and overall lower cost over the lifetime of a fixed-rate 30-year mortgage.

The owners of the example raised floor home pictured above, will save \$6,605 (\$36,630 minus \$30,025) over their 30-year mortgage. The savings calculation, shown in Table 2 and Figure 1, is based on annual payments of principle plus interest (P+I) for only the cost of the foundations, at an interest rate of 6%. In addition, the corresponding annual flood insurance premiums for a multi-story residence (Table 1) were used, assuming 5% annual increases. Finally, the savings calculation is based upon the net present value of the foundation plus insurance, discounted back to today's dollars at a rate of 4%.

Year	RAISED FLOOR + 2 BFE			SLAB-ON-GRADE at BFE		
	P + I (annual)	Flood Insurance (annual)	Total	P + I (annual)	Flood Insurance (annual)	Total
1	\$1,008	\$ 379	\$1,387	\$ 932	\$ 617	\$1,549
10	\$1,008	\$ 588	\$1,596	\$ 932	\$ 957	\$1,889
15	\$1,008	\$ 750	\$1,758	\$ 932	\$1,222	\$2,154
20	\$1,008	\$ 958	\$1,966	\$ 932	\$1,559	\$2,491
30	\$1,008	\$1,560	\$2,568	\$ 932	\$2,540	\$3,472
Total Cost in Today's Dollars: <b>\$30,025</b>			Total Cost in Today's Dollars: <b>\$36,630</b>			

P + I = Principle plus Interest, BFE = Base Flood Elevation



For more information about raised floor foundation systems, please contact the Southern Pine Council. Online, visit: [www.southernpine.com/rfs.shtml](http://www.southernpine.com/rfs.shtml)

