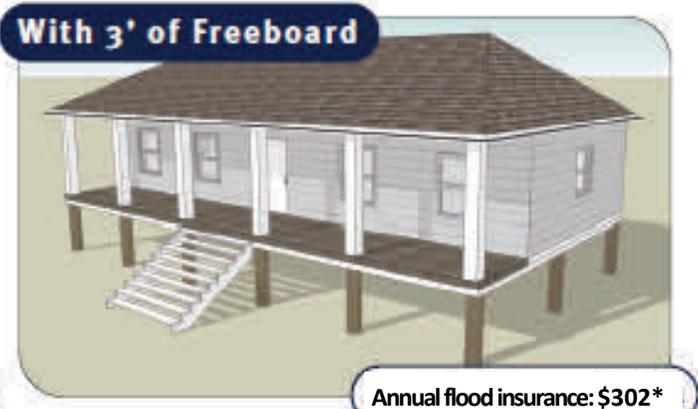
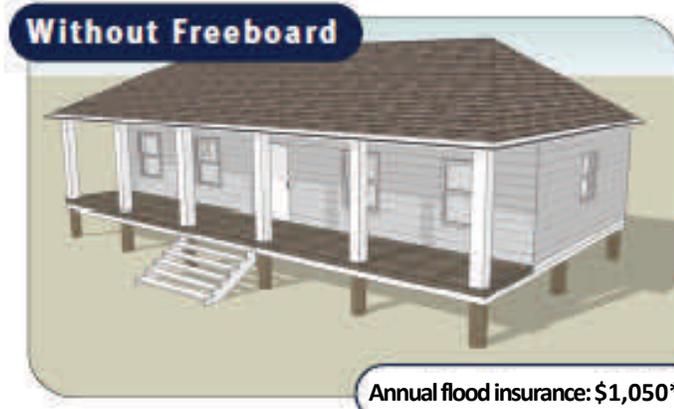


What is Freeboard?

Raise your home, Lower your monthly payments



Elevating a home a few feet above legally mandated heights has very little effect on its overall look, yet it can lead to substantial reductions in flood insurance, substantially decrease the chances the home will be damaged by storms and flooding, and help protect against sea level rise.

What is Freeboard?

Freeboard is elevating a building’s lowest floor above predicted flood elevations by a small additional height (generally 1-3 feet above National Flood Insurance Program [NFIP] minimum height requirements). Elevating a home a few feet has very little effect on its overall look, yet it can lead to substantial reductions in flood insurance, significantly decrease the chances the home will be damaged by storms and flooding, and help protect it against the impacts of sea level rise.

What Are the Benefits of Freeboard?

Increased protection from floods and storms. Storm waters can and do rise higher than shown on Flood Insurance Rate Maps (FIRMs). Freeboard helps protect buildings from storms larger than those that FIRMs are based on, and provides an added margin of safety to address the flood modeling and mapping uncertainties associated with FIRMs.

Better preparation for ongoing sea level rise.

Historically, Virginia has experienced a relative sea level rise of approximately 1.5 feet over the past 100 years. In the future, however, due to the combined forces of regional land subsidence and global climate change, Virginia may experience up to 5 feet of sea level rise over the next century. Since elevations on FIRMs do not include sea level rise, freeboard will help keep structures above floodwaters as storm surge elevations increase.

Greatly reduced flood insurance premiums.

Recognizing that freeboard reduces flood risk, the Federal Emergency Management Agency (FEMA, which administers the NFIP) provides substantial (sometimes more than 50 percent) reductions in flood insurance premiums for structures that incorporate freeboard. These savings can rapidly accumulate, especially over the life of a normal mortgage.

		Annual Savings	30-year Savings			Annual Savings	30-year Savings
V Zone*	1' Freeboard	\$2,575 (22%)	\$77,250	A Zone*	1' Freeboard	\$537 (51%)	\$16,110
	2' Freeboard	\$4,900 (41%)	\$147,000		2' Freeboard	\$700 (66%)	\$21,000
	3' Freeboard	\$6,775 (56%)	\$203,250		3' Freeboard	\$748 (71%)	\$22,440

*NFIP premiums based on October 2013 rates for a multiple floor residential structure with no basement or enclosure built after a FIRM was issued. \$1,000 deductible/\$250,000 coverage for the building, no contents coverage. The replacement cost of V Zone buildings is greater than \$500,000.

What Are the Costs of Freeboard?

The expense of incorporating freeboard into new structures is surprisingly low, generally adding only about 0.25 to 1.5 percent to the total construction costs for each foot of added height, according to a 2006 FEMA-commissioned study (*Evaluation of the National Flood Insurance Program's Building Standards*). The minor resulting increase in monthly mortgage payments is generally more than offset by savings on NFIP premiums. Consequently, adding freeboard typically saves homeowners money.

Consider, for example, a proposed two-story building in the V zone that will cost \$250,000 to build at minimum legal standards (Virginia Beach requires that all homes in the floodplain be elevated to at least one (1) foot above the base flood elevation [BFE], mapped on FIRMs). According to the study cited above, adding each foot of freeboard to a home on piles or piers adds about 0.4 percent to total construction costs (about \$1,000 a foot in this example). If the owner takes out a mortgage at 4.5 percent APR for the total construction costs, he or she will have lower monthly payments (mortgage plus NFIP premiums) with 3 feet of freeboard, even though the construction costs are higher.

Home with 1' Freeboard

Monthly mortgage payments	\$1,266.71
Monthly flood insurance	+ \$793.58
Total monthly cost	= \$2,060.29

Home with 3' of freeboard

Monthly mortgage payments	\$1,276.85 (+10.14)
Monthly flood insurance	+ \$564.58 (-229)
Total monthly cost	= \$1,841.43 (-218.86)

In this example, adding 2 feet of freeboard saves the homeowner \$218.86 per month, or \$78,573.60 over a 30-year mortgage. Benefits in A zones are generally less dramatic, but still substantial. To determine NFIP premiums for a specific property, see a licensed insurance agent.

Who Can Benefit from Freeboard?

Nearly everyone building in floodplains can better protect themselves and their property and save on flood insurance by including freeboard into their construction and reconstruction projects.

Additional benefits include:

- **Homeowners** - Whether or not you live in the house year-round, having it elevated increases the chances that it will weather storms safely, decreasing your worry and protecting your investment. If you're building a new home, or doing a renovation, ask your builder/designer about incorporating freeboard.
- **Builders/contractors** - Freeboard provides a competitive edge over other builders, allowing you to market the benefits of reduced flood insurance and flood risk to potential buyers. When doing retrofits (especially those requiring bringing structures up to current NFIP standards), explain the benefits of freeboard to your clients.
- **Businesses** - Freeboard helps: protect your buildings, important records, and inventory from flooding; drastically decrease your recovery/clean-up time after storm; and potentially save your business. The Institute for Business and Home Safety reports that more than 25 percent of businesses that close due to storm damage never reopen.

For More Information . . .

- For technical details on costs of using different flood-resistant building techniques (including freeboard), see the American Institutes for Research's *Evaluation of the National Flood Insurance Program's Building Standards* 2006 study at www.fema.gov/library/viewRecord.do?id=2592.
- For general information on the National Flood Insurance Program, see www.FloodSmart.gov.
- For specific questions on flood insurance rates, see a licensed insurance agent.
- Businesses looking to prepare for storms and other catastrophic events should visit the Institute for Business and Home Safety's website at www.ibhs.org.

