What is Flood Safety Worth?

Eliminate the mystery of financing risk reduction in new building.

Association of State Floodplain Managers
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Recovery Assistance and Mitigation Planning Division
“What we have here is a failure to communicate.”

Flooding:
- happens in a desert
- happens on mountains
- happens in the city
- happens in the suburbs
- happens outside the special flood hazard area
- may be above the Base Flood Elevation – BFE compliance is not a promise the structure won’t flood
- properties in or out of SFHA only part of the equation
Flood Insurance

- Is REQUIRED for every structure in the floodplain with a federally backed loan
- May be required by outside the SFHA by mortgagors
- Mortgage companies have failed to require as many as 20-40% of borrowers to get or maintain insurance
- Anyone in an NFIP participating community not explicitly excluded CAN buy flood insurance for a price
- Private insurance is available
- Grandfathering may stabilize a premium downplaying the risk and potential costs to the buyer
Building to the base flood elevation

- New construction
- Substantial Improvement
- Substantial Damage
Encouraging better new building or retrofitting/mitigation

- NFIP steep individual discounts for freeboard
Encouraging better new building or retrofitting/mitigation

- Community Ratings System community-wide flood insurance discounts for:
  - Freeboard (built height above the base flood elevation)
  - Limits on building in the special flood hazard area
  - Limits on fill/Compensatory storage in the SFHA
Private Efforts to Reduce Risk

 Builders experimenting with freeboard to:
  - Add value to the client through lower costs
  - Distinguish their structures from others
  - Enable more efficient use of scarce property by building an elevated foundation and avoid mitigation

 Request for grants to pay for the difference in cost while the market adjusts to reflect the safety value

 Building to the safer standard is a loss of profit
Private investment in flood safety not supported by current lending

- In many cases there is an upfront cost to the buyer.
- Mortgage companies and appraisers show no recognition of the increased cost or value of flood safety other than presence in or out of the SFHA.
- There is no valuation increase in appraisals for extra safety margins that reduce risk.
Storm Safety Impact on Value

- Studies have shown that:
  - Properties in the SFHA
    - Have a value 6-7% less than other zones based on comp sales
    - Based on the flood zone and not compliance or additional safety
    - Lack of storms decreases delta between SFHA and not
  - Fortified Home\(^{\text{TM}}\) construction for wind
    - Adds \(~7\%\) value to a structure according to studies

- No studies have been performed to identify a value due to increased flood safety of a structure
Freeboard Amenity Valuation

- Appraisal inclusion of flood safety will enable lending
- Insertion point for capturing value of flood safety
- Stable, quantifiable, and relatable to mortgage

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)
Vermont Outreach Material

<table>
<thead>
<tr>
<th>Insured Value</th>
<th>Total Insured Value (total value of structure or value of mortgage on structure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$170,000</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Premium</th>
<th>Decade</th>
<th>30-Years</th>
<th>Savings over 30 years elevating from minus 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 Feet Above BFE</td>
<td>$232</td>
<td>$2,320</td>
<td>$6,960</td>
</tr>
<tr>
<td>3 Feet Above BFE</td>
<td>$268</td>
<td>$2,680</td>
<td>$8,040</td>
</tr>
<tr>
<td>2 Feet Above BFE</td>
<td>$340</td>
<td>$3,400</td>
<td>$10,200</td>
</tr>
<tr>
<td>1 Foot Above BFE</td>
<td>$536</td>
<td>$5,360</td>
<td>$16,080</td>
</tr>
<tr>
<td>At BFE</td>
<td>$1,211</td>
<td>$12,110</td>
<td>$36,330</td>
</tr>
<tr>
<td>1 Foot Below BFE</td>
<td>$3,707</td>
<td>$37,070</td>
<td>$111,210</td>
</tr>
</tbody>
</table>
Capitalization Method Example of Savings on NFIP Premiums*

<table>
<thead>
<tr>
<th></th>
<th>V Zone</th>
<th>A Zone</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Annual savings</td>
<td>30-year savings</td>
</tr>
<tr>
<td>1' freeboard</td>
<td>$1,360 (25%)</td>
<td>$40,800</td>
</tr>
<tr>
<td>2' freeboard</td>
<td>$2,730 (50%)</td>
<td>$81,900</td>
</tr>
<tr>
<td>3' freeboard</td>
<td>$3,415 (62%)</td>
<td>$102,450</td>
</tr>
</tbody>
</table>

*NFIP premiums based on May 2007 rates for a one-floor residential structure with no basement built after a FIRM was issued for the community (post-FIRM rates differ from pre-FIRM rates). $500 deductible/ $250,000 coverage for the building/$100,000 for contents.
Mortgage

- A mortgage is a debt instrument, secured by the collateral of specified real estate property, that the borrower is obliged to pay back with a predetermined set of payments.
- A federally backed mortgage requires flood insurance:
  - If the structure is in the Special Flood Hazard Area, or
  - If the lender believes that the structure is at risk though not technically in the SFHA;
  - With a policy value equal to the owed on the mortgage;
  - Until the mortgage is paid in full.
Measuring Flood Safety Benefits

- **Mortgage**
  - Qualifying ratio may allow buyers to buy more valuable house incidentally valuing the flood safety
    - Qualifying ratio is the maximum ratio of debt to income
    - Considers the cost of the mortgage including insurances and other maintenance costs v. the buyers income
    - A structure that has lower insurance will have a higher ratio with the same income
  - Does not increase value that can legally be loaned if not captured in the appraisal
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The Intended Use of an Appraisal

- To facilitate the transfer of ownership of real property
- To help prospective sellers determine acceptable selling prices or prospective buyers decide on offering prices
- To assist the underwriter in establishing a value of security for a mortgage loan
- To provide an investor with a sound basis for the purchase of real estate mortgages, bonds or other types of securities
Appraisers

- When an appraiser considers any type of improvement to the land, the value expected to be associated must have evidence when the value developed is a market value opinion.
- That can be difficult to identify when the construction betterment is not yet tested in the market.
- Flood safety is not captured in detail
- Some markets capture the zone in comparative sales
Why is safety not captured?

- When there is no quantified evidence of the value added, the appraiser must then determine if there can be a qualified judgment.
- Skepticism - If it has value then why hasn’t the market acknowledged through paying a higher price?
- The new idea may be too new to have been tested for the market’s willingness to pay more.
- The data is not always available to be assessed
- Mortgage broker looking to appraiser for value signal
- Other amenities more important to the buyer
Challenges to Building Safety Benefits

- How to capture these values and encourage builders to innovate and lenders to cooperate?
- Current capture = $0 so safe building discouraged
- Complaint from homebuilders that appraisals not modified to take into account greater value.
Recruit new actors to recognize the value of flood safety including:

- Assessors’ offices
- Appraisers
- Mortgage companies and other lenders
- Real Estate Professionals
Promoting Private Investment by Providing

- Studies of current valuation of flood safety
- Tools for monetizing the value
- Education across the spectrum of professions
Studies

- Study sales in the floodplain for value trends
- Study sales with first floor elevation on EC for safety margin and value
  - Data sets are available through public ECs
  - Sales can be compared in different regions

- Model: University of Alabama study on “Estimating the Effect of Fortified Home™ Construction on Home Resale Value
Sample Tools

- Standard Appraisal Methodologies
  - Market Value
  - Debt Coverage Ratio
- Reduced to an equation
- Enhanced with FEMA Benefit Cost Assessment
  - Displacement costs per person
  - Business Interruption

- Model: Solar valuation from Energy Sense Finance - web-based calculator for appraisers
www.eivalue.com

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First Name

Last Name

Valid Professional Email

Confirm Email

User Type
Measuring Flood Safety Benefits

- Appraisal
  - Additional Amenity
    - More efficient due to durability
    - Less costly for lifetime maintenance
    - Less time away from dwelling during flood evacuation due to water not flooding interior of dwelling.
    - No additional time is needed for restoration
Direct Sales Comparison Approach

- Formerly known as the market data approach
- Property being appraised is compared to sales of similar properties in order to arrive at a value
- Identifies the comparable properties as being similar in age and somewhat similar in size, quality, use, and amenities, among other considerations
- Adjustments to the sales price of the comps, based on how they differ from the specific property.
Lost in Translation to Present Value

- For the appraiser the total amount of savings over the 30 years does not play a role in the value of the item.
- The annual amount of savings is a factor of annual cost maintenance.
- If discounted back to the present based on the return on the yearly savings the amount would be far less.

- 1’ Freeboard Annual Cost Savings = $1,360
- Discount rate of say 5% over annual payment 30 years
  \[ x 15.3725 \text{ (Pw 1/p @5%, 30 yr)} \]
- Equals the current value of that savings prior to the cost of item $20,906.53 (rather than $40,800). 51% reduction.
- Save one month of mortgage every 14 months – 10 over 7 yrs
Costs associated with freeboard

- Incorporating freeboard into new structures generally adds about .25% to 1.5% to the cost of construction for each foot of added height (NAS, 2006).
- The marginal resulting increase in monthly mortgage payments is more than offset by saving on NFIP premiums for structures not built greater than 1’ on fill.
- In the A zone, the discounts are less, and may not alone be sufficient to draw a buyer to the safer house ($502 discounted to $218).
Debt Coverage Ratio Method

- Debt Coverage Ratio Method would be the where the comparison of the freeboard to non-freeboard is made strictly from the savings of the Flood insurance.
- The capitalization rate is developed by using local lender terms.
- MP (Position of the Mortgage) $\times$ DCR $\times$ Amortization factor = Capitalization Rate (R/O)
  - $0.95 \times 1.2 \times 0.0719 = 0.082$ (R/O)
- Lifetime Savings on Insurance $\frac{1360}{0.082} = 16,585.36$
Takeaway

- All flood savings elements that are immutable need to be captured to show the true value
- The tool must capture the present value
- It must be accessible and simple to use; and
- Provide a value for that amenity that is supported by evidence
Freeboard

- Can save flood policy holders up to 62%
- Savings can be projected over life of mortgage
  - Insurance is unlikely to go down
  - Simple calculations identify savings over time
  - Value can be reduced to present value
  - Materials can be updated to show the savings / educate
  - Value is persistent and will transfer from buyer to buyer
  - Standardization lends itself to consistent value and reliability
Education through Existing Channels

- Appraisers
- Elected officials
- Floodplain managers
- Real estate industry
- Insurance companies
- Banks and mortgage lenders
- Builders
- Consumers
Actions Necessary by Actor

❖ Mortgage

- Current federal lending regulations* require the lender to “initiate” the appraisal
- Communicate to appraisers that inclusion is expected
- Accept lesser qualifying ratio if caused by additional flood safety
- Accept that structure will retain value and marketability due to the innate and immutable condition of relative flood safety.
- Develop Cap Rate if that is more acceptable to the industry
Actions Necessary by Actor

- **Appraiser**
  - Request information on flood safety
    - Elevation Certificate
    - Current flood insurance premiums
    - FEMA history
    - Sellers disclosure document
  - Include valuation like other comp amenities
  - Suggest this added value to lending institution with rationale for the additional value
  - Provide studies or access to the tool for documentation
Actions Necessary by Actor

- Floodplain management community
  - provide information on flood safety
  - Enter into Memorandums of Understanding with local or other willing lending institutions
  - Provide consumer advice on safe buildings and savings
  - Educate builders, elected officials, and realtors
Actions Necessary by Actor

- The Flood Safety Valuation Team
  - Create multimedia educational materials for
    - Appraisers
    - Mortgage/lending industry
    - Homebuilder associations
    - Chambers of commerce
    - Elected officials
    - The general public
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