Substantial Damage/Substantial Improvement and the National Flood Insurance Program

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After this class, you should…

- Understand how the National Flood Insurance Program (NFIP) and Substantial Improvement / Substantial Damage (SI/SD) requirements may affect you
- Understand what you can do to protect your home and come back from a disaster
- Know your responsibilities if you live in a floodplain
- Be able to work intelligently as a homeowner, local official or contractor to rebuild smarter and stronger with the help of the NFIP
- Know where to get FEMA tools and information
After a disaster…

- Back to normal?
After a Disaster

- Come back stronger
  - The National Flood Insurance Program
  - When buildings undergo repair or improvement, it is the one time that floodplain management programs can reduce flood damage to existing structures
  - Substantial Improvement / Substantial Damage (SI/SD)
How does the NFIP work?

- Communities choose to participate
- Agree to adopt and enforce ordinance
- Federal government makes flood insurance available in community
- 20k + communities participating nationwide.

Pre-FIRM/Post-FIRM
- What do they mean?
- All new construction meets certain requirements
What is it?

Cost of Improvement or Cost to Repair to Pre-Damage Condition \( \geq 50\% \)

Market Value of Building
SI/SD

- Damage of any origin

- All SI/SD structures must come into compliance with the requirements for new construction
  - Lowest floor elevation

- NFIP policies include additional coverage (currently up to $30,000) for the additional cost of bringing flood-damaged homes up to current standards
SI/SD is…

- A requirement that brings contractors, homeowners, and local officials together on the same issue.

- Essential to getting back to your home.
  - After a disaster, local officials need to meet the SI/SD requirements of their local ordinance.
  - They may not issue building permits until they have performed a “Substantial Damage determination” for a property.
Roles and Responsibilities

- Local Official
  - Needs to complete inspections and make SI/SD determinations

- Homeowner
  - Needs to obtain SI/SD determination before they can start repairs
    - If SI/SD, that can change the work required
    - Consider the cost of not complying…
NFIP Insurance Premium Example
(Rates are just examples!)

- Pre-FIRM, before damage; 6-feet below BFE: $1,079
- SD’d, repaired without permit or without proper SI/SD determination: $12,694
NFIP Insurance Premium Example (cont.)

- SD’d, repaired and elevated with LFE at the BFE: $998

- SD’d, repaired and elevated with LFE at BFE+2’ freeboard: $347
Post Disaster Iowa - 2008
Post Disaster: Iowa - 2008
Post Disaster: Iowa - 2008

Flood boundaries
Post Disaster: Iowa – 2008

- Mitigation Assessment Team
- Engineering surprises?
- Basement failures
- Large numbers of Pre-FIRM structures
  - Did not perform well
  - Elevation
  - Substantial Damage
FEMA Recovery Advisories

- ABC’s of returning to flooded buildings
  - Anticipate what you’ll need
  - Be realistic about limitations
  - Check for hazards
  - Document damages
  - Extract salvageable items
  - Facilitate restoration
  - Get help

![The ABC's of Returning to Flooded Buildings](image)
FEMA Recovery Advisories

- Air out
- Move out
- Tear out
  - SI/SD considerations
- Clean Out
- Dry Out
Before SI/SD, what can you do?

- Before an SI/SD determination
  - Basic safety
    - Utilities?
      - Best left to the professionals
  - Cleanup
    - Trash removal
      - No work that requires a permit
      - Some demolition costs, etc. need to be included in the SI/SD determination
    - Moisture Remediation
    - Basements…
Pumping out your Basement?

• Yes…but…

• Do it slowly
  • Hydrostatic pressure
  • Saturated soil

• Get professional advice
FEMA Tools

- SI/SD Desk Reference
  - Responsibilities
  - Regulations
  - Guidance
  - Tools to help local officials
  - Information for contractors
  - Information for homeowners

- Substantial Damage Estimator
  - Rapid, defensible estimates
  - Helps local officials
  - Helps homeowners

The Substantial Damage Estimator (SDE) software provides guidance on determining whether a building is substantially damaged in accordance with the National Flood Insurance Program (NFIP) regulations.
SI/SD Desk Reference

- A comprehensive resource
  - SI
  - SD
- Focuses on community responsibilities
- Collected policy and best practices

Chapter 1: Introduction

Chapter 2: The NFIP and SI/SD Roles and Responsibilities

Chapter 3: Definitions and Regulations

Chapter 4: Illustrations and Insurance Implications of SI/SD

Chapter 5: Administering SI/SD Requirements

Chapter 6: Making SI/SD Determinations

Chapter 7: Substantial Damage in the Disaster Recovery Environment

Chapter 8: Mitigation Projects
The 50% Rule:

\[
\frac{\text{Cost of Improvement or Cost to Repair to Pre-Damage Condition}}{\text{Market Value of Building}} \geq 50\%
\]
Determining Repair/Improvement Costs:

- Costs to Include
  - e.g Demolition

- Costs that can be excluded
  - e.g trash removal/cleanup
**Types of Work:**

Table 4-1. Compliance Matrix

<table>
<thead>
<tr>
<th>Types of Work</th>
<th>A Zone Pre-FIRM</th>
<th>A Zone Post-FIRM</th>
<th>V Zone Pre-FIRM</th>
<th>V Zone Post-FIRM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rehabilitation</td>
<td>Compliance not</td>
<td>Work shall not</td>
<td>Compliance not</td>
<td>Work shall not</td>
</tr>
<tr>
<td>(renovate or repair), not SI</td>
<td>required</td>
<td>alter any aspect</td>
<td>required</td>
<td>alter any aspect</td>
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<tr>
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<td>of the building</td>
<td></td>
<td>of the building</td>
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<td></td>
<td>that was required</td>
<td></td>
<td>that was required</td>
</tr>
<tr>
<td></td>
<td></td>
<td>for compliance</td>
<td></td>
<td>for compliance</td>
</tr>
<tr>
<td>Rehabilitation</td>
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<td>comply (see Sec.</td>
<td>of the building</td>
<td>comply</td>
<td>of the building</td>
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<td>4.4.1)</td>
<td>that was required</td>
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<td>for compliance</td>
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<td>for compliance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(see Note)</td>
<td></td>
<td>(see Note)</td>
</tr>
</tbody>
</table>

*Note: SI stands for Special Ideas.*
Diagrams: Additions (A Zone)
Diagrams: Additions (Pre-FIRM, V Zone)

Note: Existing building is brought up to V zone standards to meet “Free of Obstructions” requirements.
Diagrams: Vertical Additions

Vertical Addition Under Existing Building
Residential Building

Existing Building
Existing Building

BFE
BFE

BEFORE
PERMITTED
Decision Maps:

EVENT OCCURS

Preliminary Damage Assessment to Request Disaster Declaration (Sec. 7.2.1)

Rapid Evaluations and/or Detailed Safety Evaluations to Assess Safety (Sec. 7.2.2)

Damage Assessments to Collect Data to make SD Determinations (Sec. 7.2.3)

Make Substantial Damage Determinations (Chapter 6)
Decision Maps:

1. Divide: Cost of Work / Market Value (Section 6.3)
2. Is result ≥ 50%?
   - Yes: Issue SI/SD Determination (Section 5.6.20) → Require compliance (Chapter 4)
   - No: Is building Post-FIRM (Section 4.3.1)
3. Is building Post-FIRM (Section 4.3.1)
   - Yes: Assure work is compliant and does not cause any aspect originally required for compliance to become noncompliant (Section 4.3.1)
   - No: Encourage flood resistance (Section 5.9)
<table>
<thead>
<tr>
<th>Description of Work</th>
<th>Insurance Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-FIRM</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Interior renovation only, work is determined to be SI; whole building brought into compliance by elevating the lowest floor at/above the BFE.  
*Or*  
Lateral or second story addition, work is determined to be SI; whole building brought into compliance. | Policy is written using post-FIRM elevation rates based on survey of new lowest floor elevation at or above the BFE. |
| **Pre-FIRM**        |                        |
| Interior renovation only, work is determined to be SI; building is NOT elevated in compliance with the requirements (i.e., it is a violation).  
*Or*  
Second story addition, work is determined to be SI; building is NOT elevated in compliance with the requirements (i.e., it is a violation). | Policy is written using post-FIRM elevation rates based on survey of new lowest floor below the BFE.  
Alternatively, if the owner refuses to address the violation and bring the building into compliance, the community may cite the structure to be a violation in accordance with Sec. 1316 of the National Flood Insurance Act of 1968, which allows the NFIP to deny flood insurance on all insurable buildings on the property. |
| **Pre-FIRM**        |                        |
| Lateral addition not structurally attached (connecting door only), work is determined to be SI and only the addition is elevated. | Policy is written using subsidized rates because the original building is unchanged. |
| **Post-FIRM**       |                        |
| Lateral addition, regardless of value; addition is not elevated, thus, altering the compliance status of the building. | Policy is written using elevation rates based on the elevation of the lowest floor of the addition. |
Substantial Damage Estimator

The Substantial Damage Estimator (SDE) software provides guidance on determining whether a building is substantially damaged in accordance with the National Flood Insurance Program (NFIP) regulations.

Example…
Galveston, Texas – Hurricane Ike

- Over 5,000 properties damaged
- 3 members of building dept. staff
- Needed to inspect all structures
SDE – how does it work

- **Goal:**
  - Provide accurate, rapid, defensible estimates for SI/SD determinations

- **Fills in the SI/SD Equation:**
  - Costs to repair/improve
  - Market Value

\[
\geq 50\%
\]

- Breaks buildings up into 12 “components”
  - Example…
SDE – Under the hood

- Engineers and construction experts calculated % figures for each component
  - E.g. What % of a building’s value is the roof?

- Inspectors assign % damages to each component
  - E.g. 50% of roof damaged

- Using industry accepted cost guides, SDE users can:
  - Enter square foot construction costs
  - Develop estimated costs of repair
  - Develop estimated market values

- SDE allows users to input data from other sources
  - Tax assessment
  - Professional appraisals
  - Contractor estimates
Using SDE – Overview

- SDE includes a wide range of features for local officials
  - Inspection assignments
  - Database management
  - Import/export of data
  - Photographic records of properties
The Substantial Damage Estimator (SDE) software provides guidance on determining whether a building is substantially damaged in accordance with the National Flood Insurance Program (NFIP) regulations.
Using SDE

<table>
<thead>
<tr>
<th>Owner Name</th>
<th>Percent Damaged</th>
<th>Basis for Value of Building</th>
<th>Basis for Cost of Repairs</th>
<th>Actual Cash Value of Home</th>
<th>Type of Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doe, Jane</td>
<td>60.9%</td>
<td>Computed Actual Cash Value</td>
<td>Computed Damages</td>
<td>$125,580.00</td>
<td>Single Family Residence</td>
</tr>
</tbody>
</table>

Community Name ID: 333222  Polk County

880 Second Portland, Oregon 98290

Assessment of: 7/6/2009
Figure 7-1. SDE data displayed using mapping software
SDE

- Helps local officials
  - Organized inspection efforts
  - Issue permits more quickly

- Helps Homeowners
  - Quicker ability to apply for permits
  - Work with local official to:
    - Provide more accurate information
      - Professional appraisals – Market Value
      - Contractor estimates – Repair/Improvement costs
Grant Programs/ICC

- Program Summaries
- May qualify for ICC claim if NFIP-insured
FEMA Building Science
Where to Get FEMA tools?

Flood/Wind Building Science Helpline:
FEMA-BuildingScienceHelp@dhs.gov
(866) 927-2104
http://www.fema.gov/rebuild/buildingscience/