

2018 State of Missouri Flood Damage Assessment Packet



Photo used with permission from Photographer John Spink/Atlanta Journal-Constitution

Includes Information On:

Steps to Take Following a Flood
Substantial Damage “The 50% Rule”
Sample Handouts for Residents
Damage Assessment Field Worksheets
FEMA Substantial Damage Estimator (SDE 3.0)
Sample Notice
Sample Press Release
Sample Damage Determination Letter
Information on Mitigation Programs
Information on Increased Cost of Compliance



FOLLOWING A FLOOD

All local floodplain management ordinances in the State of Missouri require permits for the repair or reconstruction of flood damaged structures. The local floodplain administrator must ensure that the repair of a damaged structure within the community's Special Flood Hazard Area (SFHA) meets the requirements of the floodplain management ordinance.

Following a flood event, the local administrator should follow these five steps:

Step 1: Contact the Floodplain Section of the State Emergency Management Agency (SEMA) or the Federal Emergency Management Agency (FEMA). Both agencies have experience, materials, and guidance to help you carry out your floodplain management responsibilities. Make use of their help and expertise! SEMA: (573) 526-9129 or FEMA: (816) 283-7061

Step 2: Identify those structures believed to be substantially damaged and begin doing damage assessments. Local officials should tour the flooded areas of the 1% chance floodplain and identify every structure which has been flooded, as well as those with obvious structural damage.

- Damaged buildings should be marked on a community map and photographed for future reference.
- Tag each structure with the notice included in this packet so residents are aware of the post-flood permit requirements. A sample press release is also included with this packet.

Damage assessments can be difficult. Local officials should inspect every flood damaged building and calculate the cost of repairs. The FEMA Substantial Damage Estimator 3.0 is available to help make these determinations. The pre-flood market value of every flooded structure can quickly be estimated from the County Assessor's records.

Step 3: Post information for the public about the local ordinance requirements for obtaining permits for repairs and rebuilding. Often repairs begin on flooded buildings before the water even recedes from the structure. Therefore, it is very important that this step take place as soon as possible. History shows that information normally spreads quickly among flood victims. Posted signs, flyers, notices on damaged structures, press releases, and letters mailed to individual owners can all be used for this purpose. Educate yourself on the damage assessment process, reconstruction methods, and available mitigation programs. Have a "Floodplain Development Permit Application" in hand and ready to distribute. Keep it simple. Be prepared for residents who are angry that they cannot start immediate repairs.

Step 4: Provide technical information to residents on elevation and floodproofing techniques. Post-flood activities present the perfect window of opportunity to ensure that flood damages do not occur again. Federal or state mitigation programs are often available. The Mitigation program experts at the Missouri State Emergency Management Agency can be contacted at: (573) 526-9375. Technical manuals and guidance are available. Public meetings can be presented in flooded communities to introduce flood victims to the various options available to them.

Step 5: Implement a permit application procedure. At this point the community should be on its way to enforcing the floodplain ordinance. Those structures identified as substantially damaged (more than 50% of the pre-flood market value) should be "red-tagged". Permits should not be issued until compliance with the local floodplain ordinance is demonstrated. Those with less than 50% damage can be issued permits to repair.

SUBSTANTIAL DAMAGE

“THE 50% RULE”

Communities participating in the National Flood Insurance Program (NFIP) have adopted, and are expected to enforce, a floodplain management ordinance. New structures located in a floodplain must be elevated to or above the base flood elevation, depending upon the requirements of the community’s floodplain management ordinance. The same flood protection and elevation regulations also apply to substantially damaged buildings.

SUBSTANTIAL DAMAGE. Whenever a building located in a mapped floodplain area - the Special Flood Hazard Area - is damaged from any source (flood, fire, seismic activity, wind, or human activity), the community must determine if that structure is substantially damaged. A building is substantially damaged when the cost of repairs is 50% or more of the structure’s “pre-damaged” market value.

If the building is found to be substantially damaged, the structure must be brought into compliance with the community’s floodplain ordinance (in other words, protected from future flooding to at least the base flood elevation, if it did not already meet this standard).

The cost of repairs must be calculated for full repair to “pre-damaged” condition, even if the owner elects to do less. The total cost of repair includes structural and finish materials as well as labor.

CUMULATIVE COST. If standards for CUMMULATIVE IMPROVEMENT are adopted in a community’s Floodplain Management Ordinance, substantial damage occurs at the point where multiple damages or improvements total 50% of the original market value of the building.

BUILDING VALUE. Building value is the market value of the structure only. Land and exterior improvements (pools, pool houses, landscaping, walkways, etc.) are excluded.

Following a disaster most communities find that it expedites the process to obtain the structure’s market value from the County Tax Assessor. This method of obtaining market value ensures consistency.

Other acceptable methods of estimating market value include:

- Independent appraisals by a Missouri professional appraiser.
- Detailed estimates of the structure’s Actual Cash Value (replacement cost minus depreciation).
- Qualified estimates based on sound professional judgment made by staff of the local building department.

DETERMINATION OF EVENT DAMAGE – COST OF REPAIR. “Substantial Damage” refers to the repairs of all damage sustained and CANNOT reflect a level of repairs that is LESS than the amount of the damage sustained. If the owner does not intend to repair the damaged building right away or if the owner cannot afford to make all repairs immediately, the local official should inspect the property to determine whether, based on estimates, the work required to restore it to its pre-damage condition will constitute Substantial Damage.

COSTS THAT MUST BE INCLUDED IN SUBSTANTIAL DAMAGE/SUBSTANTIAL IMPROVEMENT DETERMINATIONS:

- Materials and labor, including the estimated value of donated or discounted materials and owner or volunteer labor.
- Site preparation related to the improvement or repair (e.g., foundation excavation or filling in basements).
- Demolition and construction debris disposal related to removing structure walls, floors. This should NOT include cleanup or disposal of contents.
- Labor and other costs associated with demolition of the structure
- Costs associated with maintaining compliance with other codes or regulations, including the Americans with Disabilities Act (ADA).
- Costs associated with elevating a structure when the proposed elevation is lower than the BFE
- Construction management and supervision
- Contractor's overhead and profit
- Sales tax on materials

Residential Structure Elements and exterior finishes, including;

- Foundations (e.g., spread or continuous foundation footings, perimeter walls, chain walls, pilings, columns, posts, etc.)
- Monolithic or other types of concrete slabs
- Bearing walls, tie beams, trusses
- Joists, beams, subflooring, framing, ceilings
- Interior non-bear walls
- Exterior finishes (e.g. brick, stucco, siding , painting, and trim)
- Windows and exterior doors
- Roofing, gutters and downspouts
- Hardware
- Attached decks and porches

Interior Finish Elements, including

- Floor finishes (e.g., hardwood, ceramic, vinyl, linoleum, stone, and wall-to-wall carpet over subflooring)
- Bathroom tiling and fixtures
- Wall finishes (e.g., drywall, paint, stucco, plaster, paneling, and marble)
- Built-in cabinets (e.g., kitchen, utility, entertainment, storage, and bathroom)
- Interior doors
- Interior finish carpentry
- Built-in bookcases and furniture
- Hardware
- Insulation

Utility and service equipment, including

- Heating, ventilation, and air conditioning (HVAC) equipment
- Plumbing fixtures and piping
- Electrical wiring, outlets, and switches
- Light fixtures and ceiling fans
- Security systems
- Built-in appliances
- Central vacuum systems
- Water filtration, conditioning, and recirculation systems

Guidance from Substantial Improvement/Substantial Damage Desk Reference – FEMA P-758, May, 2010, P. 4-5, 4-6, 4-7

COSTS THAT MAY BE EXCLUDED FROM SUBSTANTIAL DAMAGE/SUBSTANTIAL IMPROVEMENT DETERMINATIONS:

- Clean-up and trash removal; (e.g., cost of draining a basement, removing dirt and mud, and cleaning and drying out buildings)
- Costs to temporarily stabilize a building so that it is safe to enter to evaluate and identify required repairs
- Costs to obtain or prepare plans and specifications
- Land survey costs
- Permit fees and inspection fees
- Carpeting and re-carpeting installed over finished flooring such as wood or tile
- Outside improvements, including landscaping, irrigation, sidewalks, driveways, fences, yard lights, swimming pools, pool enclosures, and detached accessory structures (e.g., garages, sheds, and gazebos)
- Costs required for the minimum necessary work to correct existing violations of health, safety, and sanitary codes
- Plug-in appliances such as washing machines, dryers, and stoves.

Guidance from Substantial Improvement/Substantial Damage Desk Reference – FEMA P-758, May, 2010, P. 4-7

SAMPLE STAND ALONE DAMAGE ASSESSMENT WORKSHEET (long hand version)

1. **Address:** _____

2. **Owner:** _____

Telephone Number _____

3. **Occupant:** _____

Telephone Number _____

4. **Insurance Coverage (Optional):**

Company _____ Policy Number: _____

Building: \$ _____ Contents: \$ _____

5. **Special Flood Hazard Area:**

Community I.D. #: _____

FIRM Panel: _____ FIRM Date: _____

Flood zone: _____ Base Flood Elevation _____

Existing Lowest Floor Elevation: _____ (if available)

6. **Duration of Flooding:** Days _____ Hours _____

7. **High Water Mark:**

A) Exterior Walls _____ ft.

B) Interior Walls _____ ft.

8. **Type of Structure:**

A) Exterior:

- | | |
|----------------------------|---------------------------|
| 1) Plywood/Hardboard _____ | 5) Brick _____ |
| 2) Stucco _____ | 6) Concrete Block _____ |
| 3) Siding/Shingles _____ | 7) Other (describe) _____ |
| 4) Masonry Veneer _____ | _____ |

B) Manufactured/Mobile Home:

- 1) Dimensions: a) single wide _____ size _____ x _____
b) double wide _____ size _____ x _____
- 2) Skirting: yes _____ no _____

9. Description of Structure:

- A) 1 story _____ 2 story _____ Tri-level _____
1 1/2 story _____ Bi-level _____ 3 or more _____
- B) Garage: attached _____ detached _____
Carport: attached _____ detached _____
- C) Roofing:
Metal/corrugated or ribbed _____ Composition shingles _____
Other: Describe _____
- D) Foundation:
Slab-on-grade _____
Crawlspace _____
Basement _____ (Finished __ Unfinished __)
Poured walls _____
Block walls _____
Post-piers-piles _____
- E) Heating and Cooling:
Forced air _____
Boiler _____
Wall furnace or baseboard _____
Heat Pump _____
Fireplace/wood burning stove _____
Other _____
- F) Plumbing: Number of bathrooms: _____
- G) Built-In Appliances:
List: _____

10. Description of Damage:

- A) Plumbing:
1) Is it exposed? _____
2) Does it need repair? _____
- B) HVAC/Electrical
1) Water depth _____ ft.
2) Damaged _____ (Repairable _____ Replaced _____)

Use corresponding numbers given below to answer C-F below:

- | | |
|-----------------------|--------------------------|
| 1. Settlement/cracked | 2. Partially missing |
| 3. Sagging | 4. Dislodged/destroyed |
| 5. Submerged | 6. Include all the above |
| 7. No damage | 8. Other: describe _____ |

- C) Foundation _____
- D) Exterior Walls _____
- E) Interior Walls _____
- F) Roof _____

11. Overall condition of structure:

- | | |
|----------------------------|-----------------------------------|
| A) Minor damage _____ | B) Major Damage _____ |
| C) Totally destroyed _____ | D) Structure off foundation _____ |

12. Determination of Substantial Damage

Percent Damage = $\frac{\text{Cost of Repair}}{\text{Market Value}}$ = _____

In the event that the percent damage is equal to or greater than 50%, the building is substantially damaged.

_____ This building is substantially damaged and therefore must be elevated or floodproofed so that the lowest floor is protected at or above the elevation of the base flood.

_____ This building is not substantially damaged. This building can be repaired without having to be mitigated.

_____ This is a properly elevated structure and may be reconstructed at its existing elevation.

Reviewed by: _____ Date: _____

Approved by: _____ Date: _____

FEMA

SUBSTANTIAL DAMAGE ESTIMATOR

(SDE 3.0)

THE FEMA SUBSTANTIAL DAMAGE ESTIMATOR (SDE 3.0)

The SDE 3.0 Tool was developed by FEMA to assist State & local officials in determining substantial damage for residential & non-residential structures in accordance with a local floodplain management ordinance meeting the regulatory requirements of the National Flood Insurance Program (NFIP). The tool can be used to assess flood, wind, wildfire, seismic, and other forms of damage. The SDE tool is based on the concept of using damage estimates for individual structure elements to determine whether the structure as a whole is substantially damaged. It allows community officials with limited appraisal or construction Backgrounds to develop reasonable estimates of structure values and damage in accordance with the NFIP requirements.

If your community has multiple structures which have been flooded, it is definitely worth your time to obtain the SDE 3.0 and learn to use the program. It will save you time and research. The SDE 3.0 can be downloaded directly from the FEMA website:

<http://www.fema.gov/medialibrary/assets/documents/18692>

The Package Zip-file contains all of the items you need to load SDE 3.0. This Zip-file contains the manuals listed on the website download page and will also be downloaded in that package. This includes the installation guide which will provide answers to installation questions that have not been included in this packet. If you are still having trouble installing this program you may need to consult your IT personnel.

Please note that in the past the Floodplain Management office downloaded and distributed the user's manual and all forms to the community. The SDE program size increased substantially during the recent updates, therefore we will no longer be providing paper copies of the manuals.

If you have any further questions or concerns, please contact Linda Olsen 573-526-9115 or linda.olsen@sema.dps.mo.gov.

INSTALLATION STEPS

Prior to installing the SDE 3.0 Tool, users are encouraged to export and save any existing SDE data from previous versions of the SDE tool. Although it is not required, FEMA recommends that users uninstall previous versions of the SDE tool from the host computer using the Windows Add/Remove Programs function to avoid confusion between past and current SDE inventories.

Installation steps may vary depending on the host computer setup and the utility program installed on the computer to unzip the SDE tool installation file downloaded from the FEMA website.

Use the following steps to install the SDE 3.0 Tool using a zip file downloaded from the FEMA website:

USER NOTE: A host computer can only have one installation of the SDE tool.

1. After opening the FEMA website (<http://www.fema.gov>), search on “SDE” or use the SDE web page found at <https://www.fema.gov/media-library/assets/documents/18692> to locate the SDE tool download function.
2. Download the SDE installation zip file to the My Documents folder on the host computer and unzip the file. In many cases, users can unzip the folder by right-clicking on the file and selecting the option **Extract All ...** from the list of options or by double-clicking the zip folder and selecting the option **Extract all files** from the list of choices displayed. Some users may have an unzip utility installed that activates automatically when they select a zipped folder or file.
3. If the .NET Framework 4.6.1 is not already installed, the SDE installation routine will attempt to search online for the Framework and install it on the host computer during the SDE 3.0 installation. **Local administrative rights and an Internet connection are required to install the .Net Framework 4.6.1.** The user will need to accept the Framework license agreement (Figure 1) for the installation to continue.
4. After the SDE file has been extracted, open the folder and double click on the “Setup.exe” file to start the tool installation process. The Setup Wizard window shown in Figure 2 will appear.
5. Select **Next** button to continue the installation.
6. The Select Installation Folder window will appear next. This window allows the user to proceed with installation in the default location or change the destination folder. After the destination folder is identified, select **Next** to continue.
7. When the Confirm Installation window appears, the Setup Wizard is ready to proceed with the SDE installation on the host computer. Select **Next** to continue.
8. The installation status window will show the status of the installation process. When the status bar reaches 100%, select **Next** to continue.
9. Once the installation is complete, select Close to end the installation process.
10. Upon completion of the installation, an SDE icon will appear on the desktop of the host computer. Double-click the icon to run the SDE tool.

THE SDE “CHEAT SHEET”

The SDE requires the inspector to estimate the percent of damage for various building components. The information compiled below can be used with the SDE worksheet to quickly calculate substantial damage. It is intended to be used as a screening tool so that the property owner is notified as soon as possible as to the potential status of his property. Often a more detailed assessment is warranted and more detailed damage percentages should be determined on an as-needed basis.

- **Foundation** – *These numbers can be revised downward if the inspector is reasonably assured no damages have occurred.*
 - **Basement or crawlspace masonry foundations-**
 - 10% if minor hairline cracks and fractures or cosmetic (clean up, re-seal, paint, etc.)
 - 50% if cracked, bowed, or fractured on one or more walls
 - 100% if structural damage such as blow out or caved in walls
 - **Slab on Grade Foundations** –
 - 10% damage unless the foundation is undermined.
 - 30% if foundation is undermined
 - 75% if foundation is broken or bowed
 - **Joist and Pier Foundations**
 - 15% damage – for water depths exceeding height of floor
 - 100% damage where building has moved from foundation

This criteria is based on foundations that are substantially intact and do not include damages caused by subsidence or shifting of the foundation. In some cases hydrodynamic forces has caused an upheaval in slab on grade foundations. In this circumstance, individual assessment will be required.

- **Superstructure**
 - **Walls**
 - 10% for water depths of 2 feet or less
 - 25% for water depths of 2 to 4 feet
 - 75% for water depths of more than 4 feet
 - **Structural damage resulting from wind or impact damage**
 - Lineal feet of damage divided by total lineal feet of wall will equal percentage
 - **Roof damage**
 - Total square feet of roof damage divided by square footage of house will equal percentage
 - **Insulation and Weather-stripping**
 - 30% if waters less than 4 feet
 - 60% if waters greater than 4 feet but less than ceiling height
 - 100% if water above ceiling height
 - **Exterior Finish**

- 30% if waters less than 4 feet
- 60% if waters greater than 4 feet but less than ceiling height
- 100% if water above ceiling height

These numbers are based on hydro dynamic forces acting on the exterior walls of the structure. Some brick or brick veneer structures may have actual damages less than those shown.

- **Interior Finish** - based on interior finishes susceptible to flood damage
 - 30% if waters less than 4 feet
 - 60% if waters greater than 4 feet but less than ceiling height
 - 100% if water above ceiling height
 -
- **Doors, Windows and Shutters**
 - 50% if waters greater than 2 inches
 - 75% if waters greater than 4 feet
 - \$ 70.00 per individual window when other damage occurs
- **Lumber Finished**
 - 50% if water greater than 1 inch
 - 100 % if waters exceeding 4 feet
- **Hardware**
 - 100% if waters exceeding 4 feet
- **Cabinets and Countertops**
 - 20% if waters less than 3 inches
 - 70% if waters greater than 3 inches less than 4 feet
 - 100% if water exceeding 4 feet
- **Floor Coverings**
 - 100% if waters greater than 1 inch
 - 20% for ceramic tile, brick, or concrete floors
- **Plumbing**
 - 5% if waters less than 2 feet
 - 30% if waters between 2' and 4 feet
 - 50% if waters greater than 4 feet if the fixtures are not reused

Floodwater will rarely damage plumbing pipes so this schedule is based on the cost of plumbing fixtures and the labor to install them.

- **Electrical**
 - 10% if waters greater than 2 feet and less than 4 feet
 - 50% if waters greater than 4 feet and less than ceiling
 - 100% if waters greater than ceiling height

Some communities require the wiring to be replaced if they came in contact with flood waters. This schedule reflects replacement of fixtures and minimal wiring.

- **Built in Appliances**
 - 100% if waters more than 3 feet
- **Heating and cooling**
 - 30% if waters less than 3 feet
 - 60% if waters greater than 3 feet but less than ceiling height
 - *If A/C unit is located in the attic this number will be reduced to 30%*
 - 100% if waters greater than ceiling height
- **Painting**
 - 20% if waters less than 4 inches
 - 50% if waters less than 4 feet
 - 100% if waters greater than 4 feet

Reflects interior and exterior painting of the surfaces in contact with the water and areas where the surfaces are replaced due to damage. This category also includes finishing of doors and trim that may have been replaced.



Residential

SDE DAMAGE INSPECTION WORKSHEET

Single-Family, Town or Row House (Site Built Residences), or Manufactured House Address:

SDE

ADDRESS Tab

Subdivision / Community Information

Subdivision: _____ Parcel Number: _____ Lot

Number: _____ Elevation of Lowest Floor: _____ Datum: _____

Community Information

NFIP Community ID: _____ NFIP Community Name: _____ Latitude:

_____ Longitude: _____

Building Address

Owner First Name: _____ Owner Last Name: _____ Street

Number: _____ Street Name: _____ Street Suffix: _____

City: _____ State: _____

County/Parish _____ Zip: _____

Phone: _____ Cell Phone: _____

Mailing Address

Check here if same as building address: _____

First Name: _____ Last Name: _____

Street Number: _____ Street Name: _____ Street Suffix: _____

City: _____ State: _____

County/Parish: _____ Zip: _____

Phone: _____ Cell Phone: _____

SDE STRUCTURE / DAMAGE / NFIP INFO Tab

Structure Attributes / Information

Residence Type: ___ Single Family ___ Town or Row House ___ Manufactured House

Foundation: ___ Continuous Wall w/Slab (Standard) ___ Basement ___ Crawlspace
___ Piles ___ Slab-on-Grade ___ Piers and Posts

Superstructure: ___ Stud-Framed (Standard) ___ Common Brick ___ ICF ___ Masonry

Roof Covering: ___ Shingles – Asphalt, Wood (Standard) ___ Clay Tile ___ Standing Seam (Metal)
___ Slate

Exterior Finish: ___ Siding or Stucco (Standard) ___ Brick Veneer ___ EIFS
___ None – common brick, structural

HVAC System: ___ Heating and/or Cooling ___ None

Story: ___ One Story (Standard) ___ Two or More Stories

Structure Information

Year of Construction: _____

Quality of Initial Construction: ___ Low ___ Budget ___ Average ___ Good ___ Excellent

Residence Information (if needed): _____

Inspector / Damage Information

Inspector's Name: _____ Inspector's Phone: _____

Date of Inspection (mm/dd/yyyy): _____ Date Damage Occurred (mm/dd/yyyy): _____

Cause of Damage: ___ Fire ___ Flood ___ Flood and Wind ___ Seismic ___ Wind ___ Other

Cause of Damage (if "Other" is selected): _____

SDE STRUCTURE / DAMAGE / NFIP INFO Tab

Damage Undetermined: _____ (check here and check the reason below):

_____ No Physical Damage Sustained _____ Vacant / Property _____ Resident Refused Inspection

_____ Address Does Not Exist _____ Other (Explain)

Duration of Flood: _____ Hours _____ Days

Depth of Flood Above Ground (estimated to nearest 0.5 foot): _____ Depth

of Flood Above Lowest Floor (estimated to nearest 0.5 foot): _____

NFIP / Community Information

FIRM Panel Number: _____ Suffix: _____ Date of FIRM Panel (mm/dd/yyyy): _____

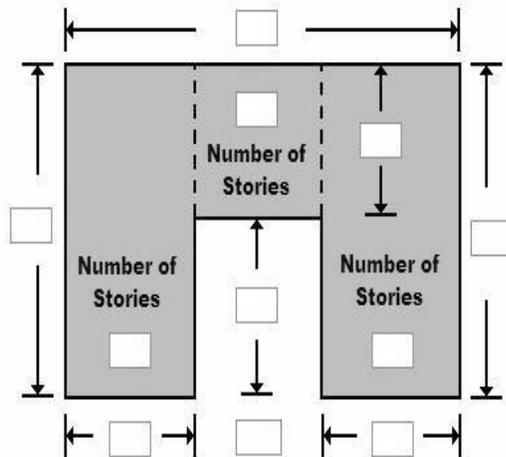
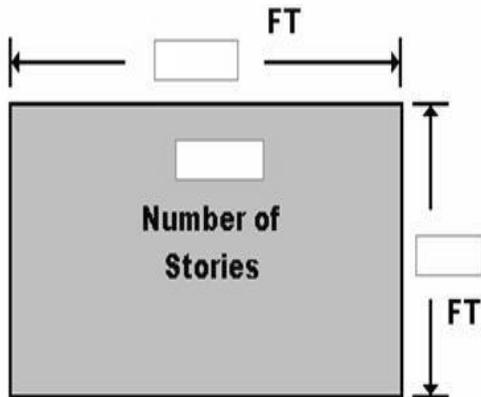
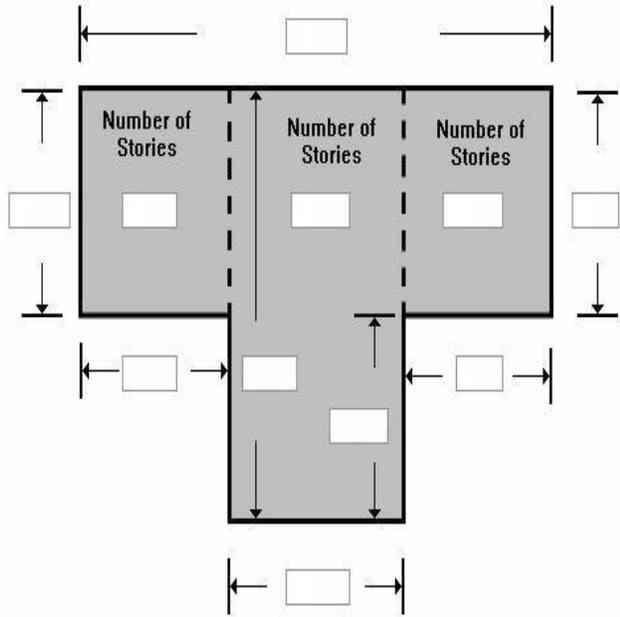
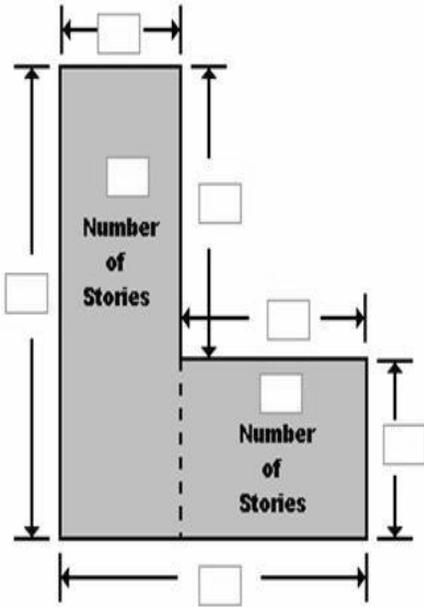
FIRM Zone: _____ Base Flood Elevation: _____

Regulatory Floodway: ___ Yes ___ No ___ Possible

Community Information (if needed): _____

COST Tab

Select appropriate diagram of structure footprint and enter structure dimensions and the number of stories:



COST Tab

Square Footage

Base Cost per Sq Ft.: _____ Total Square Footage: _____

Geographic Adjustment: _____

Cost Adjustments

<u>Single-Family House</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Cost</u>	<u>Item Cost</u>
Roofing		Sq Ft		
Heating / Cooling		Each		
Appliances		Each		
Fireplaces		Each		
Porch / Breezeways		Sq Ft		
Garage		Sq Ft		
<u>Manufactured House</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Cost</u>	<u>Item Cost</u>
Expando		Sq Ft		
Carport		Sq Ft		
Open Porch		Sq Ft		
Enclosed Porch		Sq Ft		
Decks		Each		
Skirting		Sq Ft		
Fireplaces		Each		

COST Tab

Additional Cost Adjustments

<u>Adjustments</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Item Cost</u>

Cost Data Reference (source or name): _____

Cost Data Date: _____

Note: The computed **Actual Cash Value** (ACV) for the structure will be calculated once the square footage, base cost, cost adjustments, costs add-ons, and depreciation percentage are entered into the SDE tool.

Depreciation Rating:

___ 1. Very Poor Condition ___ 2. Requires Extensive Repairs ___ 3. Requires Some Repairs
___ 4. Average Condition ___ 5. Above Average Condition ___ 6. Excellent Condition ___ 7. Other
Depreciation Percentage (if 'Other' selected for Depreciation Rating): _____

Depreciation Explanation (if 'Other' selected for Depreciation Rating): _____

ELEMENT PERCENTAGE Tab

Note: The inspector needs only enter the **% Damaged** data here. The data in the Element %, Item Cost, and Damage Values columns will be populated based on the selected attributes once all the data are entered into the SDE tool.

Residence Type: ___ Single-Family (SF) House ___ Townhouse ___ Manufactured House (MH)

<u>Item</u>	<u>% Damaged</u>	<u>Element %</u>	<u>Item Cost</u>	<u>Damage Values</u>
Foundation (not required for MH)				
Superstructure				
Roof Covering				
Exterior Finish				
Interior Finish				
Doors and Windows				
Cabinets and Countertops				
Flood Finish				
Plumbing				
Electrical				
Appliances				
HVAC				
Skirting / Forms Piers (MH only)				

SDE OUTPUT SUMMARY Tab – *Optional User Entered Data*

Professional Market Appraisal: _____

Tax Assessed Value: _____ **Tax Factor Adjustment:** _____

Adjusted Tax Assessed Value: _____

Contractor’s Estimate of Damage: _____

Community’s Estimate of Damage: _____

Non-Residential
SDE DAMAGE INSPECTION
WORKSHEET

Address: _____

SDE ADDRESS Tab

Subdivision / Community Information

Subdivision: _____ Parcel Number: _____

Lot Number: _____ Elevation of Lowest Floor: _____ Datum: _____

Community Information

NFIP Community ID: _____ NFIP Community Name: _____

Latitude: _____ Longitude: _____

Building Address

Owner First Name: _____

Owner Last Name: _____

Street Number: _____ Street Name: _____ Street Suffix: _____

City: _____ State: _____ County/Parish: _____

_____ Zip: _____ Phone: _____ Cell

Phone: _____

Mailing Address ***Check here if same as building address: _____***

First Name: _____ Last

Name: _____

Street Number: _____ Street Name: _____ Street Suffix: _____

City: _____ State: _____

County/Parish: _____ Zip: _____

Phone: _____ Cell Phone: _____

SDE STRUCTURE / DAMAGE / NFIP INFO Tab

Structure Attributes / Information

Year of Construction: _____ Number of Stories: _____ 1 Story _____ 2 to 4 _____ 5 or more

Structure Use: _____

Sprinkler System: _____ Yes _____ No Conveyance: _____ Yes _____ No

Quality of Initial Construction: _____ Low _____ Budget _____ Average _____ Good _____ Excellent

Structure Information (if needed): _____

Inspector / Damage Information

Inspector's Name: _____

Inspector's Phone: _____

Date of Inspection (mm/dd/yyyy): _____ Date

Damage Occurred (mm/dd/yyyy): _____

Cause of Damage: _____ Fire _____ Flood _____ Flood and Wind _____ Seismic _____ Wind _____ Other

Cause of Damage (if 'Other' is selected): _____

Damage Undetermined: _____ (check here and check the reason below):

_____ No Physical Damage Sustained _____ Vacant / Property _____ Resident Refused Inspection

_____ Address Does Not Exist _____ Other (Explain)

Duration of Flood: _____ Hours _____ Days

Depth of Flood Above Ground (estimated to nearest 0.5 foot): _____

Depth of Flood Above Lowest Floor (estimated to nearest 0.5 foot): _____

SDE STRUCTURE / DAMAGE / NFIP INFO Tab

NFIP / Community Information:

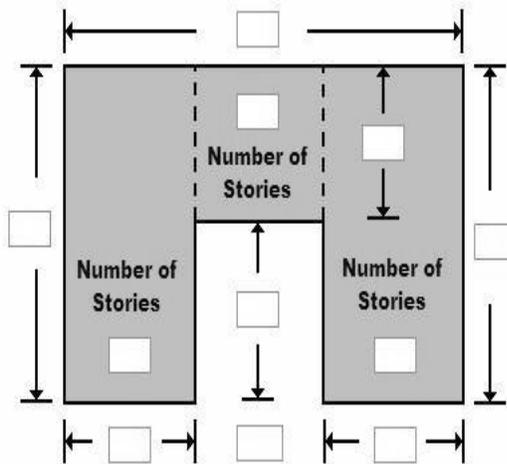
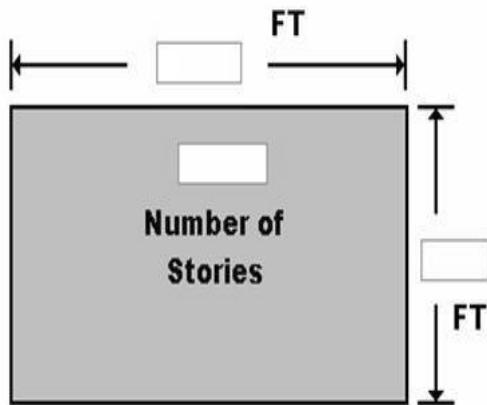
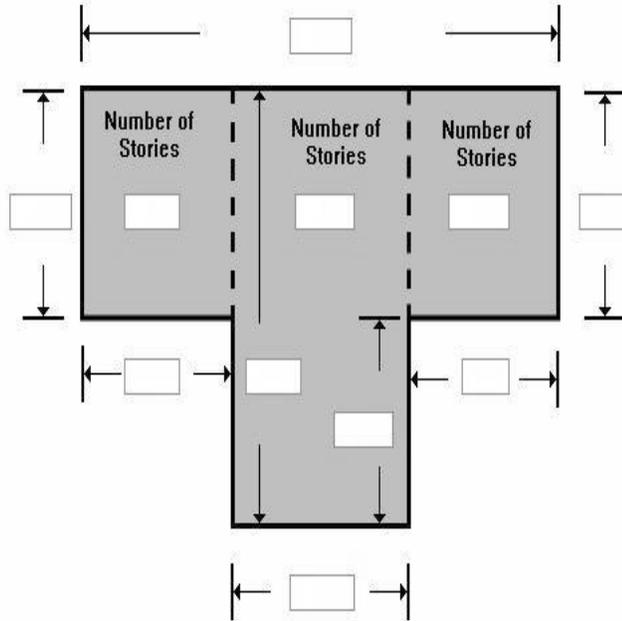
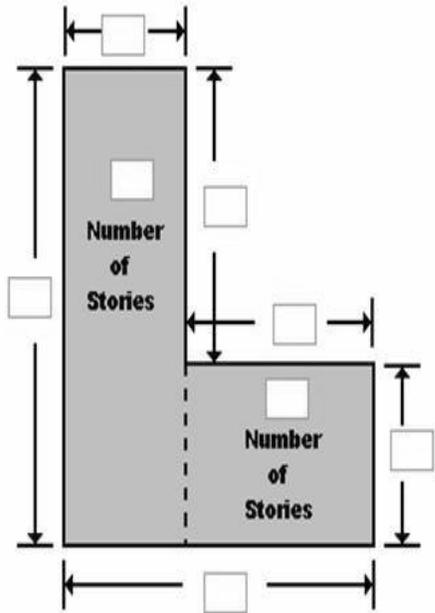
FIRM Panel Number: _____ Suffix: _____ Date of FIRM Panel (mm/dd/yyyy): _____

FIRM Zone: _____ Base Flood Elevation: _____

Regulatory Floodway: ___ Yes ___ No ___ Possible

Community Information (if needed): _____

Select appropriate diagram of structure footprint and enter structure dimensions and the number of stories:



COST Tab

Square Footage

Base Cost per Sq Ft.: _____ Total Square Footage: _____

Geographic Adjustment: _____

Cost Adjustments

<u>Adjustments</u>	<u>Quantity</u>	<u>Units</u>	<u>Unit Cost</u>	<u>Item Cost</u>

Additional Cost Adjustments

<u>Adjustments</u>	<u>Quantity</u>	<u>Unit Cost</u>	<u>Item Cost</u>

Cost Data Reference (source or name): _____

Cost Data Date _____:

Note: The computed **Actual Cash Value (ACV)** for the structure will be calculated once the square footage, base cost, cost adjustments, costs add-ons, and depreciation percentage are entered into the SDE tool.

Depreciation Rating:

___ 1. Very Poor Condition ___ 2. Requires Extensive Repairs ___ 3. Requires Some Repairs
 ___ 4. Average Condition ___ 5. Above Average Condition ___ 6. Excellent Condition ___ 7. Other

Depreciation Percentage (if 'Other' selected for Depreciation Rating): _____

Depreciation Explanation (if 'Other' selected for Depreciation Rating): _____

ELEMENT PERCENTAGES Tab

Note: The inspector needs only enter the **% Damaged** data here. The data in the Element %, Item Cost, and Damage Values columns will be populated based on the selected attributes once all the data are entered into the SDE tool.

<u>Item</u>	<u>% Damaged</u>	<u>Element %</u>	<u>Item Cost</u>	<u>Damage Values</u>
Foundation				
Superstructure				
Roof Covering				
Plumbing				
Electrical				
Interiors				
HVAC				

SDE OUTPUT SUMMARY Tab – Optional User Entered Data

Professional Market Appraisal: _____ *Tax*

Assessed Value: _____ *Factor Adjustment:* _____

Adjusted Tax Assessed Value: _____

Contractor's Estimate of Damage: _____

Community's Estimate of Damage: _____

SAMPLE LETTERS, FORMS AND NEWS RELEASES

Pages 28-33

⇒ NOTICE ⇐

Because this building is located in a floodplain and was damaged by flooding, a damage assessment must be conducted by the (city or county).

Before occupying this building or doing any repair work you must call the (city or county) community's Floodplain Administrator at (____) _____ to schedule an inspection.

Failure to obtain reconstruction approval may result in a penalty.

SAMPLE PRESS RELEASE

RESIDENTS IN (COMMUNITY) WITH FLOOD DAMAGE REMINDED OF PERMIT REQUIREMENTS

As property owners in (community) contemplate clean up and repairs following recent flooding, the (community permit office) is reminding residents to obtaining local permits before repairing or rebuilding flood-damaged structures.

The permits are required as part of local government participation in the National Flood Insurance Program, providing eligibility for flood insurance, flood disaster assistance, state and federal grants and loans, and buyout funds for flood-prone property.

Local floodplain management ordinances require that permits be obtained for any construction or development activity in a floodplain area, including the repair or reconstruction of structures damaged by flooding.

Special conditions apply to substantially damaged buildings - those in which the total cost of repairs is 50 percent or more of the structure's pre-flood market value. If a building is found to be substantially damaged, regulations require that repairs not begin until compliance with the local floodplain ordinance is demonstrated. In some cases, that may require repairs that include elevating or flood-proofing the structure to reduce the potential for future flood damage.

The cost to repair must be calculated for full repair to "pre-damaged" condition, even if the owner elects to do less. The total cost to repair includes structural and finish materials as well as labor. If labor and materials have been donated they must still be assigned a value. If local building codes require the structure to be repaired according to certain standards, these additional costs must be included in the full repair cost for the structure.

State and federal assistance may be available to property owners to reduce the chances of future flood damage. Mitigation assistance may cover costs of relocation, or for elevating or purchasing flood-damaged structures. Flood insurance may also provide up to \$30,000 to protect a structure from future flood damage.

Property owners and residents with flood-damaged buildings should contact (local building and zoning administrator) for more information on repair and reconstruction permits.

SAMPLE DAMAGE DETERMINATION LETTER

DATE

John & Jane Q. Public
1234 Flooded-By-The-River Road
Floodville, Mo 61000

RE: Substantial Damage
1234 Flooded-By-The-River Road

Dear Mr. and Mrs. Public,

Subsequent to the recent flooding event, a damage assessment has been completed on the property referenced above. This is a part of **Insert Community's Name** floodplain management responsibilities in order to maintain the availability of flood insurance and disaster assistance to residents. The following information relates to the address referenced above:

Community Number:	29XXXX
Parcel Zone Information:	Zone AE
Fair Market Value:	\$31,226
Flood Damage:	
June 2015	<u>\$18,864</u>
Total damages	\$18,864
Percent Damaged:	60.4%

The determination is that this structure is declared **Substantially Damaged** and must be brought into compliance with the **Insert Community Name**'s Floodplain Ordinance prior to repair and reoccupation. For this structure to be in compliance with the ordinance, the structure must be elevated, moved outside the floodplain or demolished.

Building inspections, **Floodplain Development Permits**, and an **Elevation Certificate** will be required prior to occupancy. This structure may **NOT** be occupied until these corrections are made. Please contact this office at your earliest convenience to make an appointment to discuss your upcoming project.

If you have any additional questions, feel free to give me a call: xxx- xxx-xxxx.

Sincerely,

Your Name and title

SAMPLE RIGHT OF ENTRY FORM

**PROPERTY OWNER’S RIGHT OF ENTRY CERTIFICATION
AND RELEASE**

A floodplain permit is required for all construction activity in the Special Flood Hazard Area (SFHA) or that area inundated by the 1% annual chance of a flood, as designated by the National Flood Insurance Program (NFIP). These SFHAs are designated as A, AE, A1-A30, AH, or AO Zones on the Flood Insurance Rate Maps (FIRMs). This includes construction for new or improved residential and non-residential structures, filling, and excavation.

I, the undersigned, being the owner of the land and all structures located at **(address of the structure)**, Missouri, do hereby grant the community of **(community’s name)** permission to inspect the property to determine the amount of damage and to comply with the National Flood Insurance (NFIP) Regulations for Substantial Damage Determinations according to Title 44 CFR, Section 60.3.

I, the undersigned, do hereby grant the community of **(community’s name)**, its agents, servants, employees and assigns, for a period of 60 days or the completion of the substantial damage assessment, from the date of this document, permission to enter upon the above identified land to accomplish substantial damage/improvement determinations.

In consideration of the substantial damage assessment conferred on me by the community of **(community’s name)**, in said substantial damage/improvement determinations, I, the undersigned, do hereby release and forever discharge the community of **(community’s name)** its agents, servants, employees and assigns from any and all claims, demands, or actions for damages for any and all personal injuries, or loss or damage to property sustained in or growing out of said inspections, and from complications arising therefrom.

I also hereby agree to comply with the Community’s Ordinance/Resolution No. _____.

It is understood that the above mentioned substantial damage assessment and the terms of the Release are fully understood and voluntarily accepted.

I HAVE READ THE FOREGOING RELEASE AND FULLY UNDERSTAND IT.

IN WITNESS WHEREOF, I have hereunder set my hand this ____ day of _____.

Signature

Witness

SAMPLE HANDOUT FOR RESIDENTS

Information Regarding Cleanup of Damaged Structures within the Floodplain

Repairs to damaged buildings located within the (**community's name**) floodplain require a Substantial Damage Assessment (SDE) and a permit from the (**community's name**) building department and/or the (**community's name**) Floodplain Administrator.

1. You **MUST** have a SDE determination and obtain a Floodplain Development Permit from (**community name**) before you repair, alter, or replace any of the following items:
 - a. Roof
 - b. Walls
 - c. Siding
 - d. Plaster
 - e. Cabinets
 - f. Flooring
 - g. Electrical systems
 - h. Plumbing
 - i. Heating
 - j. Air conditioning units
 - k. Foundation

2. You **MUST** obtain a Substantial Damage Assessment before you repair the above items. The permit office must conduct a damage assessment of the building. This inspection will determine if a structure is more than 50% damaged (substantially damaged). If a structure is found to be substantially damaged, the structure may not be repaired until compliance with the local floodplain ordinance is demonstrated. It is imperative that the community's Floodplain Administrator is contacted prior to taking any actions to repair damage related to the flood.

3. You may proceed with cleanup activities and temporary emergency repairs to prevent further deterioration, such as preventing the spread of mold and/or mildew, without a permit. These include:
 - a. Removing and disposing of damaged contents, carpeting, wallboard, and insulation.
 - b. Hosing and scrubbing, or cleaning floors, walls, and ductwork.
 - c. Covering holes in roofs or walls and covering windows to prevent the weather from inflicting further damage.
 - d. Removing sagging ceilings, shoring up broken foundations, and other actions to make the building safe to enter.

Prior to proceeding with cleanup activities that are allowed without a permit, thoroughly document the condition of the building by photographing the inside and outside of all areas that are being affected by the cleanup/emergency repairs.

NOTE: BUILDING REPAIRS AND STRUCTURAL IMPROVEMENTS ARE NOT ALLOWED WITHOUT A SDE DETERMINATION AND A PERMIT FROM THE LOCAL FLOODPLAIN ADMINISTRATOR.

Add Floodplain Administrator's name
Floodplain Administrator's Phone number

GENERAL NFIP INFORMATION



Federal Insurance and Mitigation Administration

FEMA's Federal Insurance and Mitigation Administration

Hazard Mitigation is sustained action taken to reduce or eliminate long-term risk to people and their property from hazards. Hazard Mitigation focuses on breaking the cycle of disaster damage, reconstruction, and repeated damage.

The Federal Emergency Management Agency's (FEMA's) Federal Insurance and Mitigation Administration (FIMA) implements a variety of programs authorized by Congress that cover the full range of natural hazards. Hazard Mitigation efforts provide value to the American people by (1) creating safer communities by reducing loss of life and property, (2) enabling individuals to recover more rapidly from floods and other disasters, and (3) lessening the financial impact of disasters on the Federal Treasury, States, Tribes and Territorial governments.

Three Main Components of Hazard Mitigation

Effective Hazard Mitigation is achieved through three critical components – Risk Management, Mitigation, and Federal Insurance.

- **Risk Management:** Determining the impact of natural hazards that lead to effective strategies for reducing risk.
- **Mitigation:** Reducing or eliminating long-term risk from hazards on the existing built environment and future construction.
- **Federal Insurance:** Reducing the impact of floods on the Nation by providing affordable flood insurance.

FIMA is organizationally structured to facilitate the three main components of Hazard Mitigation. Within FIMA there is a Risk Management Directorate, Mitigation Directorate and Federal Insurance Directorate.

Risk Management

Risk Management applies engineering, planning, and advanced technology to determine the potential impact of

natural hazard events and to develop strategies to manage the risks associated with these hazards.

Risk Management includes assessing critical information both before and after a disaster strikes, developing and maintaining a state-of-the-art inventory of flood maps, and supporting multi-hazard mitigation planning.

Program areas currently administered by the Risk Management Directorate include the following:

- Flood Hazard Identification and Mapping
- Multi-Hazard Mitigation Planning
- National Dam Safety Program
- National Levee Safety Program
- HAZUS-MH
- Building Science
- National Earthquake Hazards Reduction Program

Mitigation

Mitigation works to reduce risk to life and property through land use planning, floodplain management, the adoption of sound building practices, and a variety of grant programs that support these activities. Hazard Mitigation projects that reduce risk include elevating, relocating, or acquiring properties located in floodplains and returning them to open space, and the reinforcing of buildings in earthquake-prone areas.

The following areas are within the Mitigation Directorate:

- Floodplain Management and the Community Rating System (CRS)
- Hazard Mitigation Assistance (HMA)
 - Hazard Mitigation Grant Program (HMGP)
 - Pre-Disaster Mitigation (PDM)
 - Flood Mitigation Assistance (FMA)

Federal Insurance

The Federal Insurance Directorate manages the insurance aspects of the National Flood Insurance Program (NFIP). The NFIP is a Federal program enabling property owners in participating communities to purchase flood insurance as protection against flood losses, while requiring State and local governments to enforce floodplain management ordinances that reduce future flood damages. Over 22,00 communities currently participate in the NFIP.

ADDITIONAL RESPONSIBILITIES

Office of Environmental Planning and Historic Preservation (OEHP)

While OEHP resides within FIMA, it provides FEMA-wide technical and operational support. OEHP leverages federal environmental policy in reducing risk, meeting the needs of disaster survivors and environmental stakeholders, and protecting federal investments.

It integrates environmental and historic preservation considerations into FEMA's mission of hazard mitigation, response, and recovery. OEHP assists agency staff and non-Federal partners in anticipating and accomplishing environmental and historic preservation reviews required by Federal laws and executive orders.

Hazard Mitigation Cadre Management

The Mitigation Directorate's Insurance and Mitigation Readiness Division coordinates disaster readiness and operations for FIMA, and serves to facilitate integration of Regional and Headquarters processes. Responsibilities include managing the Mitigation disaster workforce at the national level; working with Regional and disaster workforce staff to develop and conduct training; facilitating consensus, standardization, and development of Joint Field Office job aids, tools, and operating procedures; coordinating program activities to support effective service delivery; reviewing and presenting various national emergency management disaster policy updates pertinent to Mitigation; and building relationships with other FEMA programs to support the overall agency disaster operations mission.

FOR MORE INFORMATION

Information about mitigation programs and activities are available from the following sources:

- **Fema.gov:** Additional information about FIMA is available on FEMA's website at: <https://www.fema.gov/what-mitigation/federal-insurance-mitigation-administration>
- **FloodSmart:** The NFIP created the FloodSmart campaign to educate consumers about their flood risk and encourage them to talk with their insurance agent about their insurance options to financially protect their property with flood insurance. The campaign also works with the insurance community to educate agents about the importance of flood insurance and to help agents attract and retain customers. Floodsmart is located online at: <http://www.floodsmart.gov>.
- **FEMA Library:** More information on Mitigation programs and policy is available online in the FEMA Library at: <http://www.fema.gov/resource-document-library> The FEMA Library is a searchable web-based collection of all publicly accessible FEMA information resources, such as: CDs, DVDs, posters and display items, brochures, publications, program regulations and guidelines, and documents. The FEMA Library allows users to locate, download, save, and print items from the web.
- **Best Practices:** The Best Practices Portfolio, located online at: <https://www.fema.gov/mitigation-best-practices-portfolio> highlights the ideas, activities, projects, and funding sources that help reduce or prevent the impacts of disasters. Visitors to the website may search for Best Practices based on Region or disaster type and may also submit Best Practices from their own community, Region, or State.

Protect Your Home From Flood Damages

Under the National Flood Insurance Program (NFIP), the Increased Cost of Compliance (ICC) program may provide additional financial assistance to either elevate or remove flood damaged structures from the floodplain. The ICC applies to flooded structures that are either substantially damaged or located in a community with cumulative substantial damage provisions in its ordinance.

The two most common types of ICC mitigation used are:

Relocation:

Relocating structures to higher ground or purchasing flood prone property is the safest way to protect against flooding and reduce the liability and cost to the community. Relocation can be expensive, but in the long run it is not as costly as repetitive flood damages and high flood insurance premiums.

Elevation:

There are three methods used to elevate a structure:

Construction on crawlspace



Elevation on compacted fill



Elevation on post, piers, etc.



The elevation method is dependent on the structure's condition, flood hazard, local floodplain regulations, and owner's financial condition. When elevating, it is essential for all utilities (air conditioner, water heater, furnace, etc.) to be elevated to or above the Base Flood Elevation.

Owners who have standard flood insurance coverage have paid for and are eligible to receive ICC benefits if the local official determines that a structure located in a Special Flood Hazard Area has been substantially damaged by a flood or cumulatively damaged by flooding beyond 50% of the value of the structure when the damage occurred.

ICC does not normally cover buildings in B, C, X, or D Zones. However, if the community can document that it is regulating an area outside of the Special Flood Hazard Area (advisory or preliminary BFEs provided by FEMA), ICC will be available.