

# Substantial Improvement/ Substantial Damage (SI/SD) Requirements and Resources

*IASFM 2022 Conference* | March 8, 2022



FEMA

# Definitions

---

## ***Substantial damage:***

damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. [44 CFR 59.1](#)

## ***Substantial improvement:***

any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the “start of construction” of the improvement.

This term includes structures which have incurred “substantial damage”, regardless of the actual repair work performed.



**FEMA**

# Why is SI/SD regulated?



Protect human  
life and health



Minimize  
property  
damage



**BREAK  
DISASTER  
CYCLE**



Encourage  
construction  
practices to  
minimize future  
damage



Keeps your  
community in  
good standing  
with the NFIP





# The Local Community's Role in the National Flood Insurance Program (NFIP)

- Adopt and enforce local floodplain ordinance and permits which:
  - ❖ Prevent increased damages
  - ❖ Protect new buildings
  - ❖ Keep flooding from getting worse
- Inspect damages after a flood

# Where do I begin?

How many structures? Severity of Flooding?

## Catastrophic flooding or other damages

- Do a quick initial screening for any dangerous structures to be red tagged, i.e. collapsed foundations
- Call County or IAFSM/RAFT Team (Rapid Assessment Flood Team) for help

## Numerous structures, including first floor

- Create a team for inspections
- Initially get out to record high water marks and tag any clear substantial damage (culling the herd)
- Set up FEMA SDE software
- Contact Assessor for assistance

## Few structures, minor damage

- Document structures touched by surface flooding
- Create property files and spreadsheets
- Estimate repairs; basement finishes, furnace, water heater, etc.

### NOTICE

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

Before occupying this building or doing any repair work you must call the (Name of Community) Department of ( ) at ( ) to schedule and inspection.

Failure to obtain reconstruction approval may result in a penalty.



# Guidance

## State of Illinois Flood Damage Assessment Packet

February 2018

A cooperative effort by:

Illinois Department of Natural Resources / Office of Water Resources

Illinois Emergency Management Agency

Federal Emergency Management Agency



2018 update

### Includes Information On:

- Steps to take following a flood
- Substantial damage determinations
- FEMA Substantial Damage Estimator (SDE)
- Damage Assessment Field Worksheet
- Sample letter
- Sample notice
- Sample press release
- Information on mitigation programs



## Substantial Damage Estimator (SDE) User Manual and Field Workbook

Using the SDE Tool to Perform  
Substantial Damage Determinations

FEMA P-784 / Tool Version 3.0 / August 2017

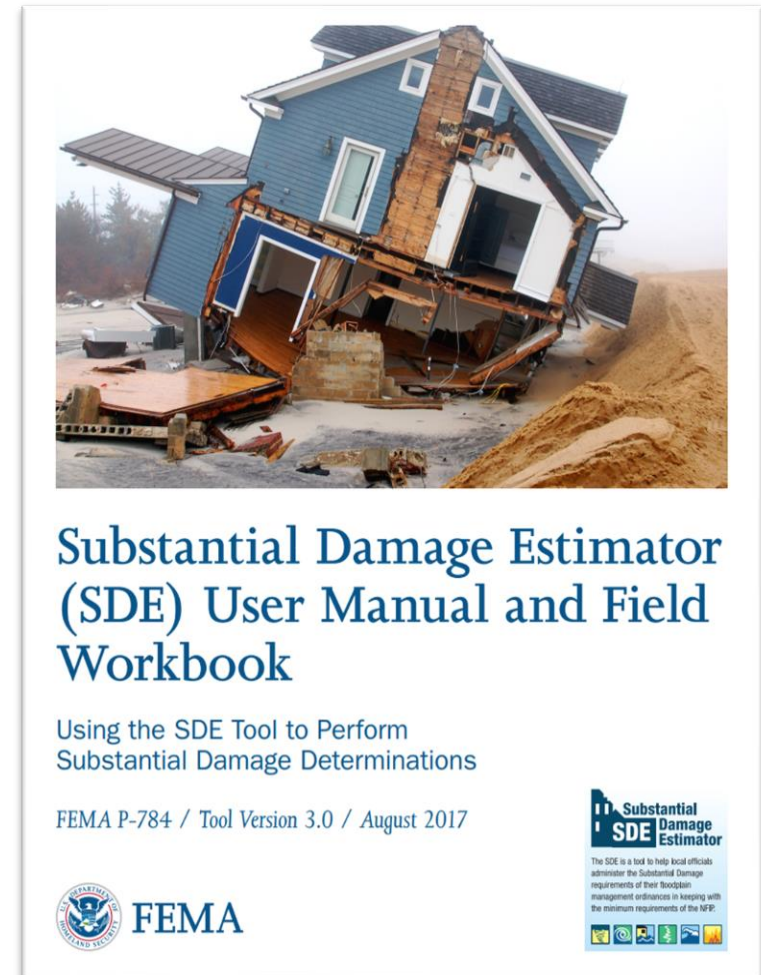


FEMA



# Damage Assessment Tools – SDE Software

- FEMA's Substantial Damage Estimator (SDE) software
  - Formalizes building values and repair costs which are reasonable and defensible
  - Produces an aggregate “percent damage”
  - Database driven yet customizable, for example with *RSM* means inputs.
  - Supports storage of photos and other field survey data
  - Community and Damage reports



**FEMA**

# Inspection Forms

## SDE DAMAGE FIELD INSPECTION WORKSHEET Single/Multi-Family Site Built Residences

Subdivision: \_\_\_\_\_ Parcel # \_\_\_\_\_ Lot # \_\_\_\_\_

Elevation of lowest floor: \_\_\_\_\_ Datum: \_\_\_\_\_

NFIP Community Name/ID No.: \_\_\_\_\_

Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

Owner's First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

E-mail address: \_\_\_\_\_

Building Address: \_\_\_\_\_ City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_ Phone #: \_\_\_\_\_

County: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ City: \_\_\_\_\_

State: \_\_\_\_\_ Zip: \_\_\_\_\_ 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): \_\_\_\_\_

### 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)

Item	% Damaged	Element %	Item Cost	Damage Values
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: \_\_\_\_\_



### ILLINOIS DAMAGE ASSESSMENT 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 for residential buildings, quickly calculating 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.

	Super-structure	Exterior Finish	Interior Finish	Doors and Windows	Cabinets and Counters	Flooring	Plumbing	Electrical	Built in Appliances	HVAC
<b>FLOOD DEPTH</b>										
<b>1 – 3 Inches</b>	10	0	0	0	0	100	0	0	0	0
<b>0.5 feet</b>	10	5	5	10	20	100	0	0	0	0
<b>1 foot</b>	10	10	10	15	50	100	20	0	50	80
<b>2 foot</b>	10	30	30	40	50	100	30	20	100	80
<b>3 foot</b>	25	40	40	40	50	100	30	30	100	80
<b>4 foot</b>	25	50	50	75	70	100	30	60	100	80
<b>&gt;5 foot</b>	50	50	100	100	100	100	50	80	100	80
<b>Two story =</b>	*	*	*	*		*	**	**		

For two story buildings the percentage for each building element is typically reduced as follows:

\* = Reduce by 40 – 50% for two story home

\*\* = Reduce by 25% for two story home

For split-level buildings use your best judgement for any adjustments to the damage percentages

#### **Foundation**

##### Basement or crawlspace:

10% minor 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

10% damage unless the foundation is undermined

30% if foundation is undermined

75% if foundation is broken or bowed or uplift

# Cost of Repair

---

The costs of all work necessary to restore a damaged building to its pre-damage condition. Costs may include, but are not limited to:

- materials and labor
- site preparation, such as foundation excavation or filling in basements
- demolition and construction debris disposal
- costs of bringing the structure into compliance with all regulations
- sales tax
- interior and exterior finishes
- utilities and service equipment



# Costs That May Be Excluded

- clean-up and trash removal
- temporary stabilization
- plans, specifications, and surveys
- permit and inspection fees
- outdoor improvements
- correcting violations of health and safety codes
- plug-in appliances
- alterations of registered historic structures to maintain continued historic registration



# SD/SI Tracking Spreadsheet

In 2017 2002 and 2005  
work is past 10 years –  
Percentage is zeroed out

Damage Estimate carried  
through – replace with  
actual permit if repairs  
made with permit

Future Permits  
Accumulating – Original  
scope and any additional  
work found on final  
inspection

PIN:						
Property Address:						
Buildings on Property:						
Fair Market Value of Building (FMV) Source (select one):						
<input type="checkbox"/> Township Assessor						
<input type="checkbox"/> Homeowner Provided Appraisal						
Improvements						
Building Permit # or SDE	Date	Work Done	FMV ** at Time of Permit/ Damage Assessment	Value of Work	Percentage	Percentage to Date
Cumulative tracking for rolling 10 year						
02070003		Remodel		\$41,800.00	past 10 years	0.00%
05050028		Electric Upgrade		\$800.00	past 10 years	0.00%
	4/18/2013	SDE/ April 2013 flood	\$112,320.00	\$5,520.00	4.91%	4.91%
17010060	1/19/2017	Kitchen and bathroom	\$114,540.00	\$22,280.00	19.45%	24.37%
17010060		Deck and Front Porch repairs, not reflected in initial scope of work	\$114,540.00	\$7,500.00	6.55%	30.91%

# Template Permit Packet

**TEMPLATE ONLY– Remove or amend highlighted text as necessary based on your local community's regulations.**

## SUBSTANTIAL IMPROVEMENT OR SUBSTANTIAL DAMAGE NOTICE TO PROPERTY OWNERS

*Adding on, renovating, remodeling, repairing or rebuilding your home*

*Here's information YOU need to know about the "50% Rule"*

If your structure has experienced damage or you are making improvements, there are regulations that may affect how you remodel, renovate, or add on to your building. This is required by the National Flood Insurance Program to protect lives and investment from future flood damages. Our community must adopt additional rules so that federally-backed flood insurance is available to our residents and property owners.

**SAVE YOURSELF TIME AND MONEY!  
PLEASE READ THE FOLLOWING INFORMATION:**

### SUBSTANTIAL IMPROVEMENT OR SUBSTANTIAL DAMAGE

#### PROPERTY OWNER'S AFFIDAVIT

Permit Number: \_\_\_\_\_  
Property Address: \_\_\_\_\_  
Property Owner's Name: \_\_\_\_\_  
Property Owner's Address: \_\_\_\_\_  
Property Owner's Phone Number(s): \_\_\_\_\_

I hereby attest that the list of work and cost estimate submitted with my Substantial Damage or Substantial Improvement Application reflects ALL OF THE WORK TO BE CONDUCTED on the subject structure including all additions, construction and repairs and, if the work is the result of Substantial Damage, this work will return the structure at least to the "before damage" condition and bring the structure into compliance with all applicable codes.

Neither I nor any contractor or agent will make any repairs or perform any work on the subject structure other than

Permit No.: \_\_\_\_\_

#### ESTIMATED COST FORM

STRUCTURAL ELEMENTS	LABOR	MATERIAL	TOTAL COST
EXCAVATION (Ex: prep work, gravel base)			
FOUNDATION (Ex: monolithic slabs, piers, spread footing, CMU, ICF, wood)			
DAMPPOOFING, WEATHERPROOFING, TILE, FOUNDATION INSULATION			
FLOOR SYSTEMS (Ex: trusses, lumber, steel, concrete, in-floor heat, vapor barrier)			
BEAMS (Ex: steel, wood, pre-engineered, columns)			
WALLS, FRAMING (EXTERIOR & INTERIOR) (Ex: wood, metal, sheathing)			
CEILING, RAFTERS, TRUSSES			
ROOFING SYSTEM (Ex: sheathing, felt, ice & water shield, asphalt, wood shake, tile, clay, metal, shingling, venting)			
EXTERIOR WALL COVERING (Ex: lap siding, vinyl, aluminum, brick, stucco, house wrap shutters)			
WINDOWS (Ex: escape window, double-hung, casement, slider, awning)			
WOOD DECKS (EXTERIOR & INTERIOR)			
INSULATION (Ex: walls, floors, roof)			
HARDWARE (Ex: door hardware, nails, screws, brackets, handrails)			
INTERIOR FINISH ELEMENTS	LABOR	MATERIAL	TOTAL COST
FLOORING (Ex: tile, linoleum, stone, laminate, wood, carpet, sub-flooring)			
WALL FINISHES (Ex: drywall, plaster, stucco, paneling, stone, paint, tape, mud)			
BUILT-INS, CABINETRY (Ex: bookcases, entertainment centers, kitchen cabinets, countertops, built-in stove, vanities, furniture)			
DOORS (EXTERIOR & INTERIOR) (Ex: side-hinged, sliding, pocket, bi-fold)			
HARDWARE (Ex: interior door hardware, screws, nails, handrails)			
UTILITY & SERVICE EQUIPMENT	LABOR	MATERIAL	TOTAL COST
HVAC (Ex: furnace, a/c unit, baseboard heat, radiant heat, duct-work)			

# Market Value

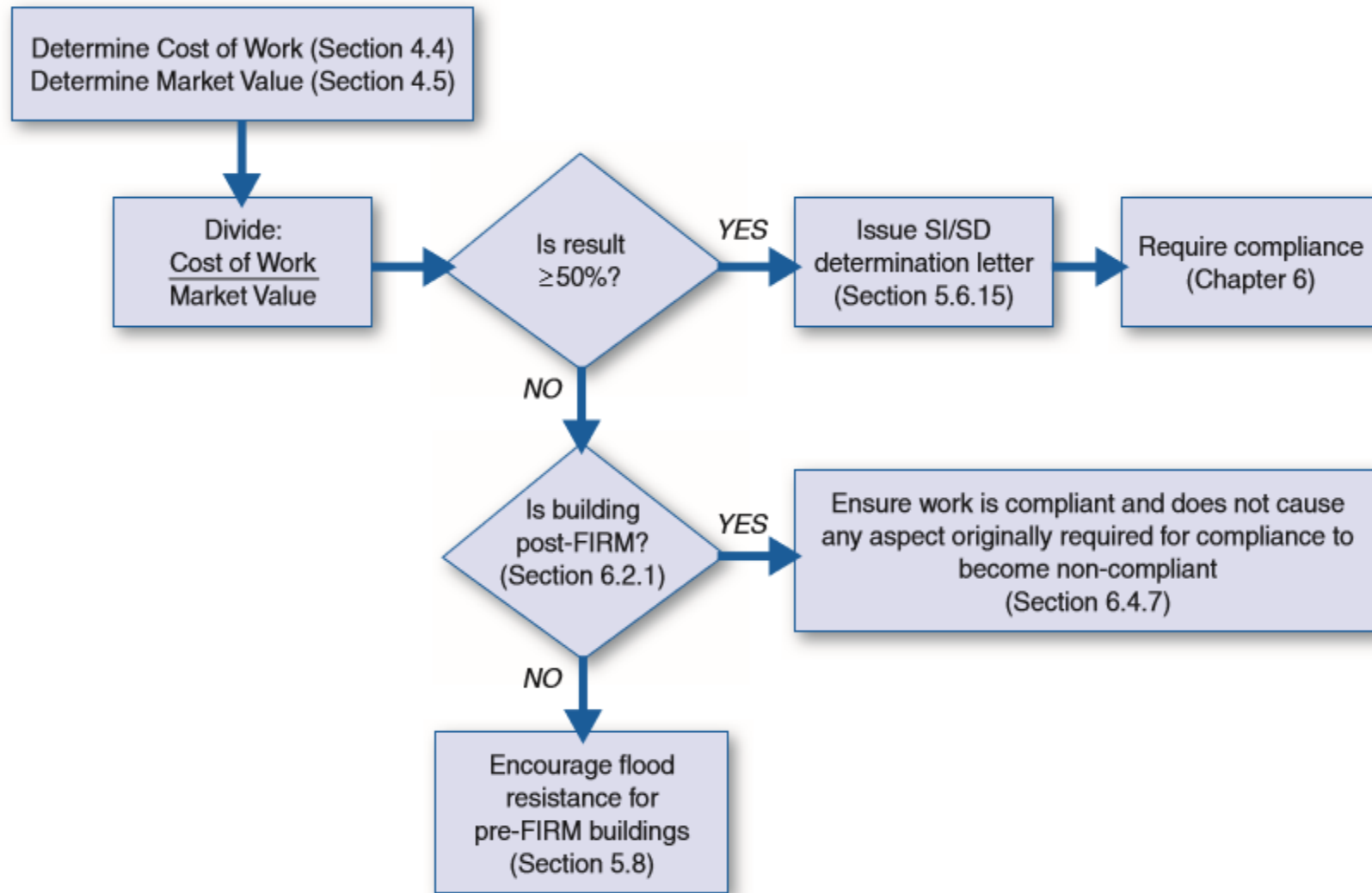
---

- Generally defined as the amount an owner would be willing but not obliged to accept, and that a buyer would be willing but not compelled to pay.
  - Substantial Improvement- market value is determined before the start of construction
  - Substantial Damage - market value is determined before the damage occurred
- **Only includes structure!**
  - Excludes land, building contents, landscaping, detached structures



FEMA





# Issuing SI/SD Determinations

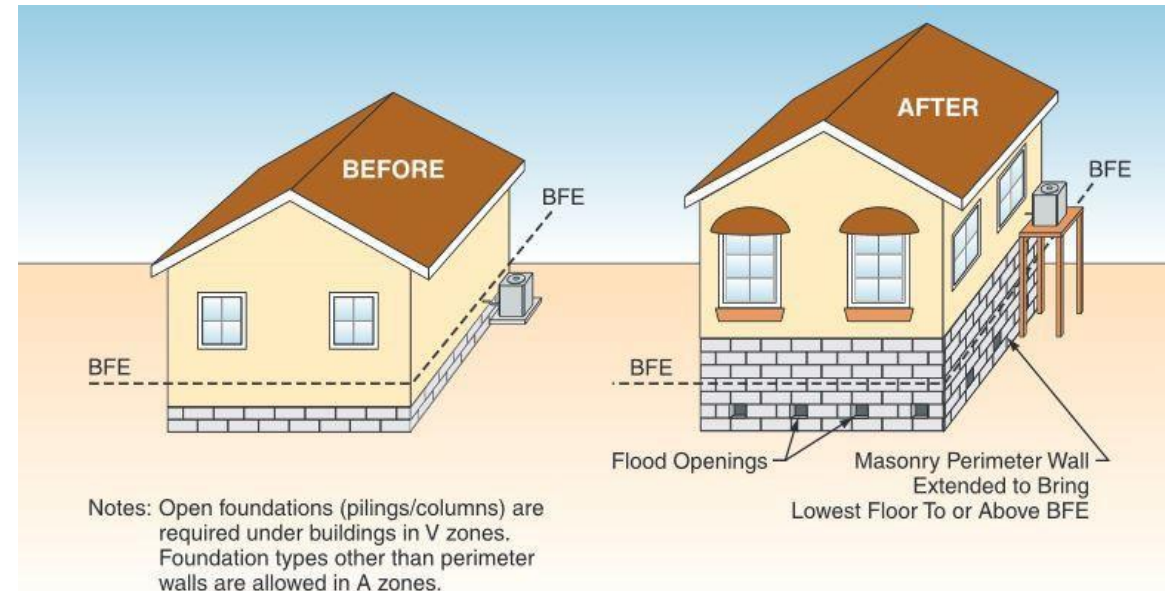
---

- Required by community flood ordinance
- Necessary for ICC claims
- Letter templates are available
- Can be rescinded based on:
  - better cost/value estimates
  - an appeal
- Issue non-SI/SD notices



# What does “brought into compliance” mean?

- F. → Flooding proof (commercial, historic)
- R. → Relocation
- E. → Elevation
- D. → Demolition
- Elevation
  - Lowest floor must be elevated to or above the BFE (check your ordinance for freeboard requirements)



FEMA



# Bringing Buildings into Compliance

---

- **Basements** – any area of the building having its floor subgrade (below ground level) on all sides. New buildings and SI/SD buildings must have their lowest floors (including basements) elevated above the BFE.
- **Compliance solutions:**
  - Fill in below-grade areas
  - Convert walkout basements to compliant enclosures
  - Floodproof below-grade areas (A zone, non-residential only)



# Substantial Damage Regs Work!

Flooded 2008



Red Tagged!

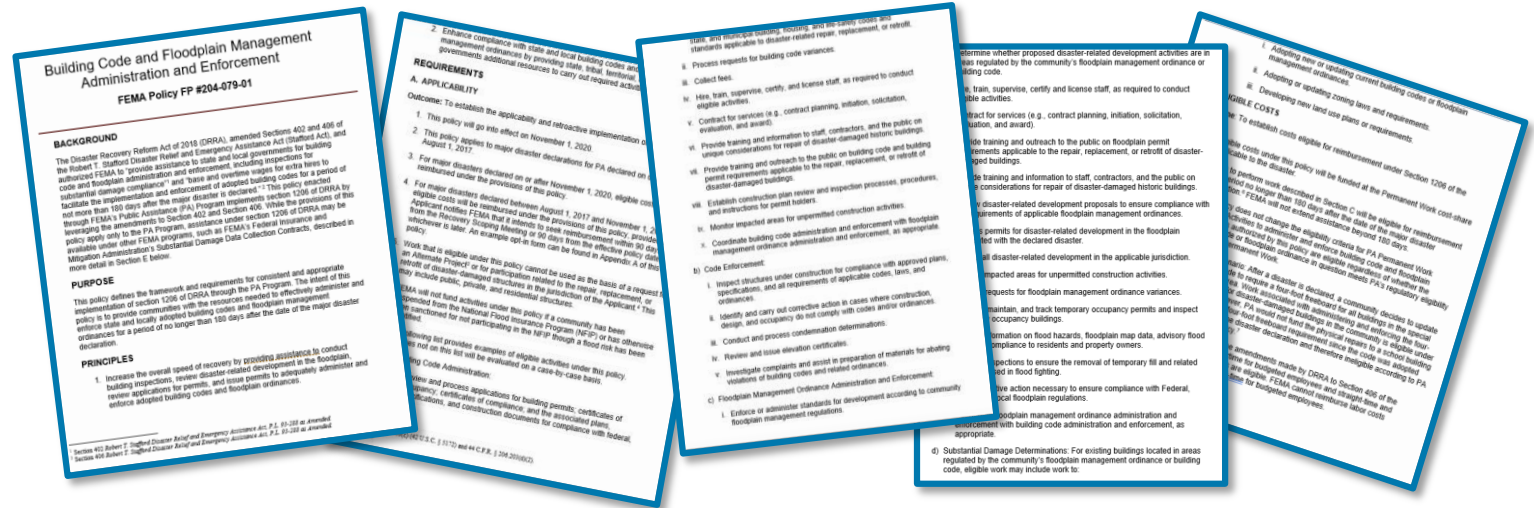


Not Flooded 2013



# Disaster Recovery & Reform Act (DRRA) of 2018

- Most comprehensive emergency management reform since 2016
- Increases mitigation funding, incentivizes disaster-reduction investments, expands assistance for individuals and communities



FEMA



# DRRA Resources for Local Governments

---

DRRA 1206 authorizes FEMA to provide resources needed to effectively administer and enforce adopted building codes and floodplain ordinances



**Building Code Administration** (review and process building applications; collect fees; hire, train, supervise staff; etc.)



**Code Enforcement** (inspect structures; review elevation certificates; conduct and process condemnation determinations; etc.)



**Floodplain Management Regulation, Administration, and Enforcement** (hire, train, supervise staff; provide training; process permits; etc.)



**Substantial Damage Operations** (conduct field surveys; prepare cost information; perform inspections; etc.)



**FEMA**

# Eligibility

## Eligible Work

- Work is eligible if it is consistent with the work that is normally done by the community to administer and enforce adopted building codes
- Eligible work must relate to the repair, replacement, or retrofit of disaster-damaged structures:
  - May include public, private, & residential structures

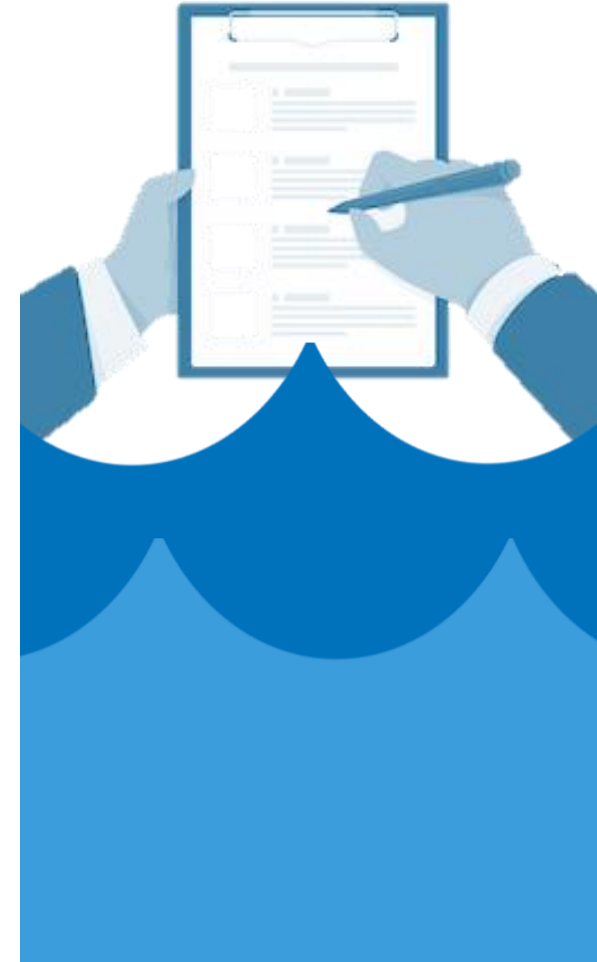
## Ineligible Work

- Activities associated with non-disaster damaged development
- Duplicate funding available from another program, insurance, or any other source for the same costs is prohibited
- Activities to update a community's laws, rules, procedures, or requirements.
  - Examples: Updating building codes, adopting new zoning requirements, developing new land use plans.

# Community Requirements

---

- Communities must submit their applications for reimbursement and all supporting documentation through the [PA Grants Portal](#)
- Supporting documentation is needed to:
  - Demonstrate completed work,
  - Location of work,
  - Validate Emergency Management Assistance Compact (EMAC) resource requests or intrastate/interlocal mutual aid requests

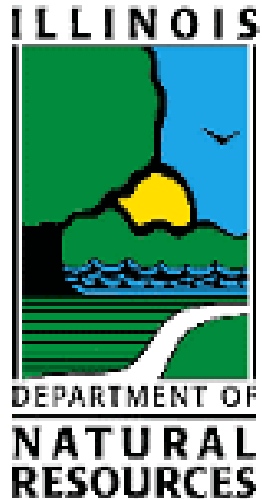


**FEMA**



FEMA

**Ashley Reimann**  
**Floodplain Management Specialist, FEMA**  
**(312) 408-5563**  
**[Ashley.reimann@fema.dhs.gov](mailto:Ashley.reimann@fema.dhs.gov)**



**Marilyn Sucoe**  
**Acting NFIP Coordinator, IDNR**  
**(847) 608-3181**  
**[Marilyn.Sucoc@Illinois.gov](mailto:Marilyn.Sucoc@Illinois.gov)**