

Substantial Improvement and Substantial Damage Estimates

IAFSM 2025 Conference



Basic NFIP Requirements

- Ensure that all proposed development is reasonably safe from flooding.
- Ensure that the lowest floor of any structure in the SHA is elevated to or above the base flood elevation.
- Ensure that work done in the floodway does not increase the base flood.
- All work done in the floodplain needs a permit before proceeding
- **If a building in a floodplain is determined to be substantially improved or substantially damaged it must be brought into compliance with local floodplain management regulations.**

Resources and Guidance

Flood Smart

- <https://www.floodsmart.gov>

FEMA Map Service Center and National Flood Hazard Layer

- MSC - <https://msc.fema.gov>
- NFHL - <https://msc.fema.gov/nfhl>

FEMA Mapping and Insurance eXchange (FMIX)

- Customer Care Center -- 877-336-2627
- https://floodmaps.fema.gov/fhm/fmx_main.html

Substantial Improvement/Substantial Damage Desk Reference

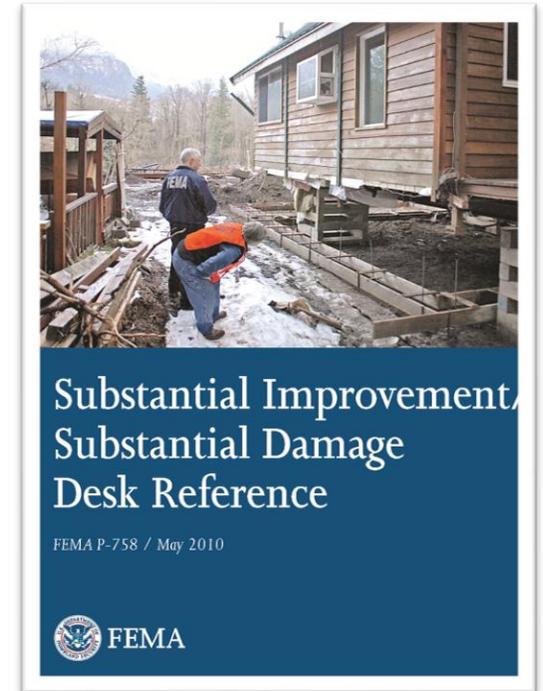
- https://www.fema.gov/media-library-data/20130726-1734-25045-2915/p_758_complete_r3.pdf

Answers to Questions about Substantially Improved/Substantially Damaged

- [Answers to Questions About Substantially Improved/Substantially Damaged Buildings FEMA 213](#)

Answers to Questions about Increased Cost of Compliance

- [Increased Cost of Compliance Coverage | FEMA.gov](#)
- https://www.fema.gov/sites/default/files/2020-08/fema_increased-cost-of-compliance_fact-sheet.pdf



Substantial Improvement Definition

- Any repair, reconstruction, rehabilitation, addition, or other activity to a building in a floodplain (*taking place during a 10-year period*) in which the (*cumulative*) project cost equals or exceeds 50 percent of the market value of the building before the improvement or repair is started.
- Substantial improvement is considered to begin when the first alteration of any wall, ceiling, floor or other structural part of the building commences, regardless if that alteration affects the external dimensions of the building.
- Substantial improvement does not include:
 - The cost of any project to improve a building to comply with existing State or local health, sanitary, or safety code specifications, which are solely necessary to assure safe living conditions; or
 - The cost of any alteration of a historic structure, provided that the alteration will not preclude the structure's continued designation as a historic structure.

How do you determine Substantial Improvement?

- Review your local ordinance
- Use your permit application!
- Your ordinance allows you to ask for cost estimates for work being done to a structure in the floodplain
- [Floodplain Management Resources \(illinois.gov\)](http://illinois.gov)

Illinois Sample Floodplain Development Permit Application - All-Development

This permit application shall be required when any type of "development" is proposed within the "regulatory floodplain." Development must comply with the specific standards outlined in your community's floodplain ordinance.

- → **Development** -- any manmade change to improved or unimproved real estate, including buildings or other structures, mining, dredging, filling, grading, paving, excavation or drilling operations, or storage of equipment or materials.
- → **Regulatory Floodplain** -- Includes all areas within the floodplain limits identified on the official FEMA Flood Insurance Rate Maps and adjoining areas below the Base Flood Elevation, as provided.
- → **Regulatory Floodway** -- Includes any designated floodway in an AE zone or the entire Zone A floodplain as shown on the official FEMA Flood Insurance Rate Maps.
- → **Flood Protection Elevation** -- an elevation not less than one foot above the base flood.

Applicant Information

Property Owner: [text box]	Contractor/Agent: [text box]
Mailing Address: [text box]	Mailing Address: [text box]
Phone: [text box]	Phone: [text box]
Email: [text box]	Email: [text box]

Site Information

Site Address: [text box]
Parcel #: [text box]

Submittal Requirements

- Location and detail of grading, fill, and methods to stabilize soil
- Copies of any other required state or federal permits or approvals (if applicable)
- For buildings, please include:
 - Site plan of the property detailing all existing and proposed buildings, structures, service facilities, roads, waterbodies, and other pertinent design features. Where applicable, plans shall address:
 - Anchoring
 - Flood openings details
 - Proposed elevations of lowest floor (including basement or crawlspace)
 - Detail of the materials used and flood protection of all facilities servicing the building
 - Engineer/Architect certifications (for floodproofed structures)
 - Detail of repairs and improvements, including cost estimate and appraisal, if necessary

Brief Description of Project

Section Break (Continued)

Calculating Substantial Improvement

- Get a detailed cost estimate or quote from a contractor on their letterhead
- Review the estimate for completeness and true cost of materials/labor
- Look to assessor for market value and establish a policy on the multiplier you will use
- Only use the fair market value of the structure, do not include the value of the land
- Determine percent improvement
- If close to 50% consider recording any letter to property owner with County Recorder

Costs must include:

- Materials and labor
- Demolition and construction debris removal
- Profit and overhead
- Exterior finishes; siding, windows, foundation, etc.
- Interior finishes; flooring, paint, doors, hardware, flooring, etc.
- Plumbing, Electric and HVAC

Substantial Damage

Damage of **any origin** sustained by a building in a floodplain whereby the damage (**cumulative percentage of damage during a time period**) equals or exceeds 50 percent of the market value of the building before the damage occurred, regardless of actual repair work performed.

The market value of volunteer labor and materials must be included in this determination.

State of Illinois Flood Damage Assessment Packet

A cooperative effort by:

Illinois Department of Natural Resources / Office of Water Resources

Illinois Emergency Management Agency

Federal Emergency Management Agency



March 2020

Includes Information On:
Steps to Take Following a Flood
Substantial Damage Determinations
Damage Assessment Worksheet
FEMA Substantial Damage Estimator (SDE)
Sample Building Notice
Sample Substantial Damage letter
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

Substantial
Damage
Estimator

The SDE is a tool to help local officials administer the Substantial Damage requirements of their floodplain management ordinances in keeping with the minimum requirements of the NFIP.



SD Tools and Online Training

- Substantial Damage Estimator (SDE) Tool
 - Software
 - https://www.fema.gov/sites/default/files/2020-07/SDE3_04062018.zip
 - User Manual and Field Workbook:
 - https://www.fema.gov/sites/default/files/2020-07/sde_3.0_user_manual_field_workbook_0.pdf
- FEMA's Emergency Management Institute (EMI) Independent Study Courses
 - IS-284.A: Using the Substantial Damage Estimator 3.0 Tool
 - <https://training.fema.gov/is/courseoverview.aspx?code=IS-284.a>
 - IS-285: Substantial Damage Estimation for Floodplain Administrators
 - <https://training.fema.gov/is/courseoverview.aspx?code=IS-285>



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



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SD Tools and Online Training (cont.)

- FEMA YouTube SDE Training Modules (10 modules)
 - https://www.youtube.com/watch?v=5WOCDF1Wods&list=PL720Kw_OoJlKaUGLcplGiC2Gw9-lutGHt
- Example SD Plans
 - Template for a Substantial Damage Management Plan
https://crsresources.org/files/500/sde_credit_template.docx



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Using the SDE Tool to Perform Substantial Damage Determinations

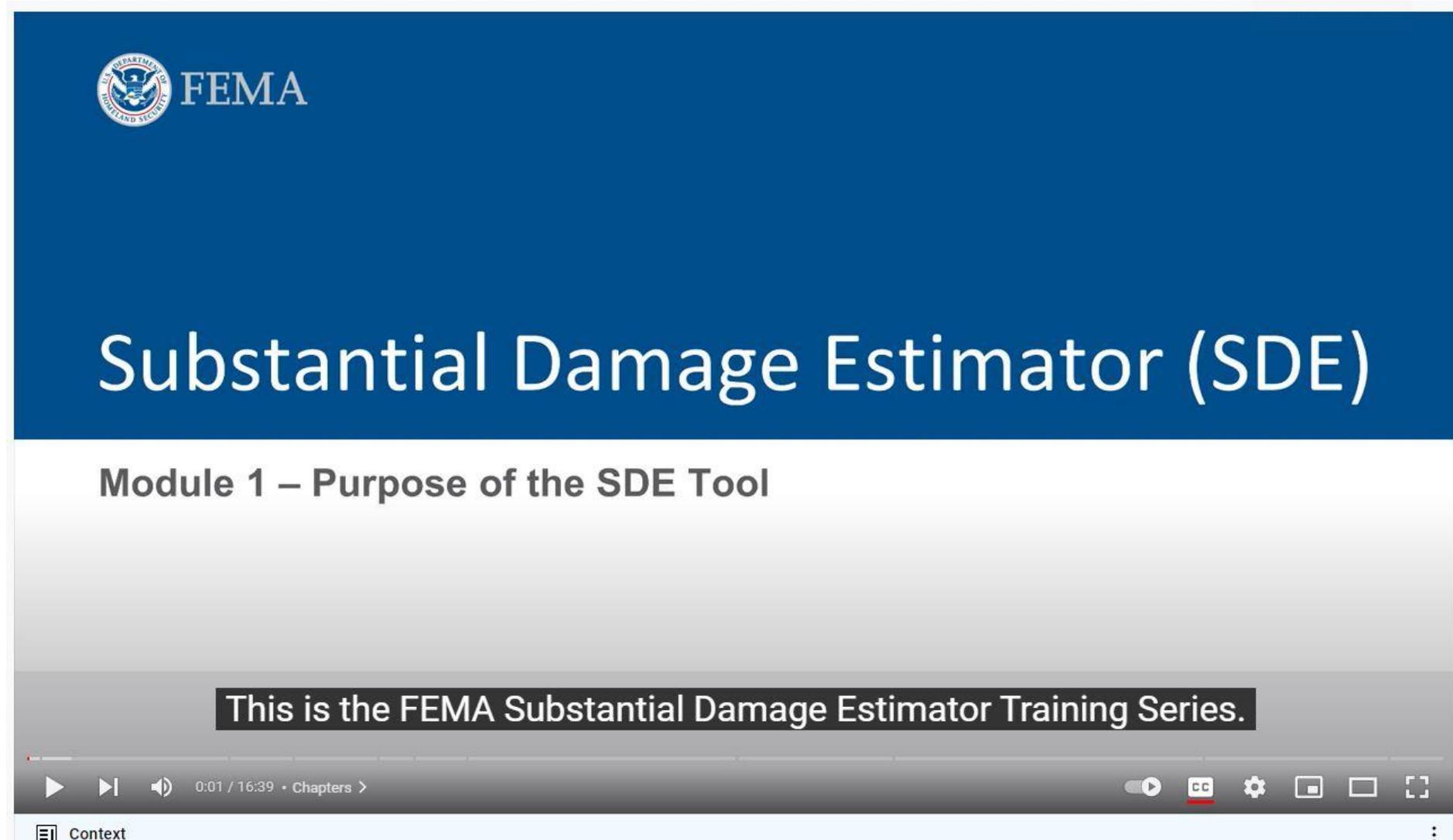
FEMA P-784 / Tool Version 3.0 / August 2017



FEMA



SDE Tool – YouTube Training Series



The image shows a YouTube video player interface. At the top left, there is the FEMA logo, which includes the text "U.S. DEPARTMENT OF HOMELAND SECURITY" around a circular emblem and the word "FEMA" in large letters. The main title of the video is "Substantial Damage Estimator (SDE)" in a large, white, sans-serif font. Below the title, the subtitle "Module 1 – Purpose of the SDE Tool" is displayed in a smaller, dark font. A black text box with white text reads "This is the FEMA Substantial Damage Estimator Training Series." The video player controls at the bottom show a play button, a progress bar at 0:01 / 16:39, and various settings icons. The word "Context" is visible in the bottom left corner of the player interface.

 **FEMA**

Substantial Damage Estimator (SDE)

Module 1 – Purpose of the SDE Tool

This is the FEMA Substantial Damage Estimator Training Series.

0:01 / 16:39 • Chapters >

Context

NFIP Technical Bulletins

- TB-1 - [Requirements for Flood Openings in Foundation Walls and Walls of Enclosures](#)
- TB-2 - [Flood Damage-Resistant Materials Requirements](#)
- TB-3 - [Requirements for the Design and Certification of Dry Floodproofed Non-Residential and Mixed-Use Buildings](#)
- TB-4 - [Elevator Installation for Buildings Located in Special Flood Hazard Areas](#)
- TB-5 - [Free of Obstruction Requirements For Buildings Located in Coastal High Hazard Areas](#)



Openings in Foundation Walls and Walls of Enclosures

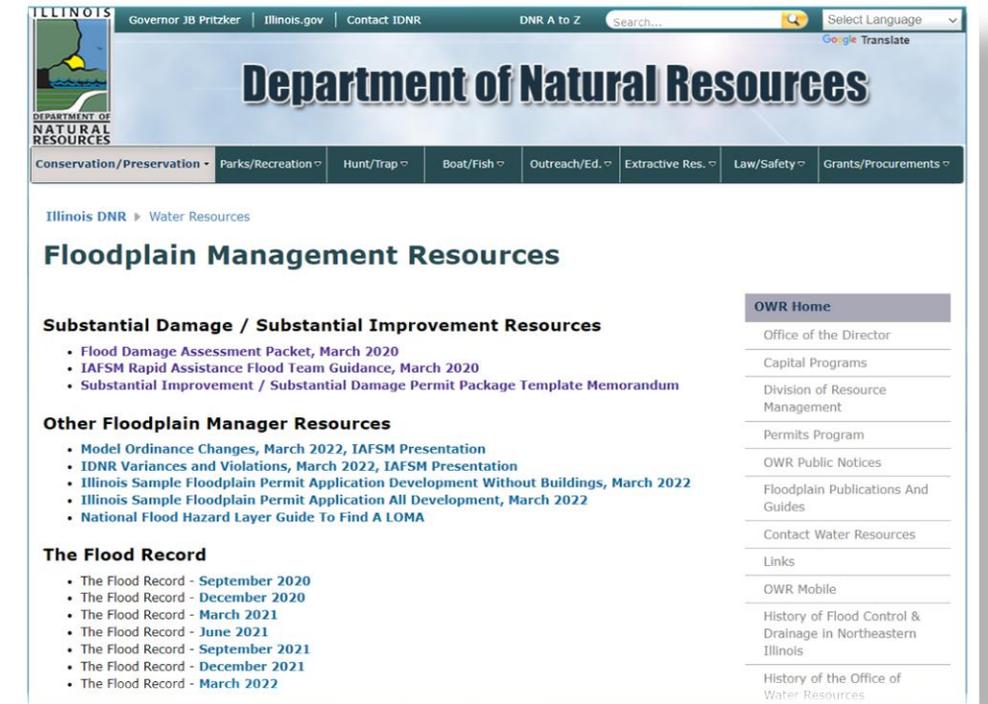
Below Elevated Buildings in Special Flood Hazard Areas
in accordance with the National Flood Insurance Program

Technical Bulletin 1 / August 2008

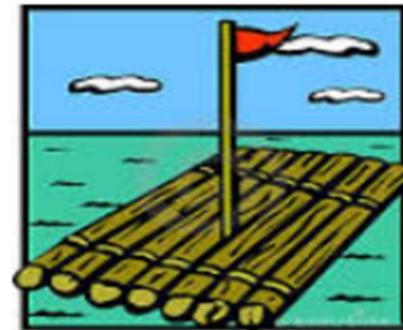


State Specific Resources

- [Floodplain Management Resources - Water Resources \(illinois.gov\)](https://www.illinois.gov)
- [State of Illinois Flood Damage Assessment Packet \(illinois.gov\)](https://www.illinois.gov)
- [SI/SD Permit Packet Template \(illinois.gov\)](https://www.illinois.gov)
- [Rapid Flood Assessment Team Guidance \(illinois.gov\)](https://www.illinois.gov)
- [Illinois Association for Floodplain and Stormwater Management \(illinoisfloods.org\)](https://www.illinoisfloods.org)



The screenshot shows the Illinois Department of Natural Resources website. The header includes the state name, Governor JB Pritzker, and navigation links. The main navigation bar lists various categories like Conservation/Preservation, Parks/Recreation, and Hunt/Trap. The page title is "Department of Natural Resources". Below the navigation, there's a breadcrumb trail "Illinois DNR > Water Resources" and a main heading "Floodplain Management Resources". The content is organized into sections: "Substantial Damage / Substantial Improvement Resources" with links to assessment packets and permit templates; "Other Floodplain Manager Resources" with links to ordinance changes and presentations; and "The Flood Record" with a list of records from 2020 to 2022. A sidebar on the right titled "OWR Home" lists various programs and contact information.



Calculating SD

$$\frac{\text{Cost to Repair to Pre-Damage Condition}}{\text{Market Value of Building}} \geq 50\%$$

The *Cost to Repair* must include all costs necessary to fully repair the structure to its pre-damage condition. Notice that the formula uses “cost to repair,” not “cost of repairs.”

Examples: $\frac{\$30,000}{\$100,000} = 0.3 \times 100 = 30\%$

$\frac{\$75,000}{\$100,000} = 0.75 \times 100 = 75\%$

Monitor damaged structures for phased improvements which may lead them to a SD percentage.

Costs That Must be Included in SD determinations

- The term includes the cost of all materials, labor, and other items necessary to perform the proposed work.
- Costs that must be included in SD determinations but not limited to:
 - Structural elements and exterior finishes
 - Interior finish elements
 - Utility and service equipment
 - Contractor's overhead and profit
 - Construction management and supervision
 - Labor and other costs associated with demolishing, moving, or altering building components to accommodate improvements, additions, and making repairs
 - Materials and labor, including the estimated value of donated or discounted materials and owner or volunteer labor

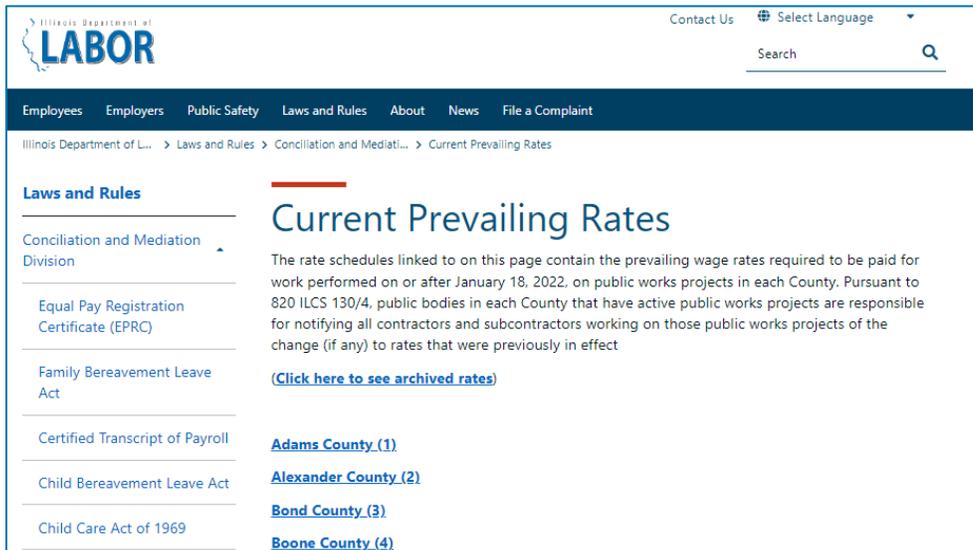


Substantial Improvement/
Substantial Damage
Desk Reference

FEMA P-758 / May 2010

Calculating Wages and Profit

- The Desk Reference has limited guidance.
- Wages (pg. 4-8) are to be the “going rate” says to use minimum-hour wage scales for the skill and type of work being done.



The screenshot shows the Illinois Department of Labor website. The header includes the IL Department of Labor logo, a search bar, and a language selection dropdown. The main navigation menu lists: Employees, Employers, Public Safety, Laws and Rules, About, News, and File a Complaint. The breadcrumb trail reads: Illinois Department of Labor > Laws and Rules > Conciliation and Mediation > Current Prevailing Rates. The page title is 'Current Prevailing Rates'. The main content area explains that the rate schedules linked on the page contain the prevailing wage rates required to be paid for work performed on or after January 18, 2022, on public works projects in each County. It states that pursuant to 820 ILCS 130/4, public bodies in each County that have active public works projects are responsible for notifying all contractors and subcontractors working on those public works projects of the change (if any) to rates that were previously in effect. A link is provided: (Click here to see archived rates). Below this, there are four links to county-specific rate tables: Adams County (1), Alexander County (2), Bond County (3), and Boone County (4). A left sidebar under 'Laws and Rules' lists: Conciliation and Mediation Division, Equal Pay Registration Certificate (EPRC), Family Bereavement Leave Act, Certified Transcript of Payroll, Child Bereavement Leave Act, and Child Care Act of 1969.

- Many property owners get a contractor's estimate just to estimate the work. If they provide an insurance adjuster's estimate you will see their wages for the various construction skills.
- IL Department of Labor published prevailing wage rate tables for each county: <https://labor.illinois.gov/laws-rules/conmed/current-prevailing-rates.html>

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
FLOOD DEPTH										
1 – 3 Inches	10	0	0	0	0	100	0	0	0	0
0.5 foot	10	5	5	10	20	100	0	0	0	0
1 foot	10	10	10	15	50	100	20	0	50	80
2 foot	10	30	30	40	50	100	30	20	100	80
3 foot	25	40	40	40	50	100	30	30	100	80
4 foot	25	50	50	75	70	100	30	60	100	80
>5 foot	50	50	100	100	100	100	50	80	100	80
Two story =	*	*	*	*		*	**	**		

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

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: _____

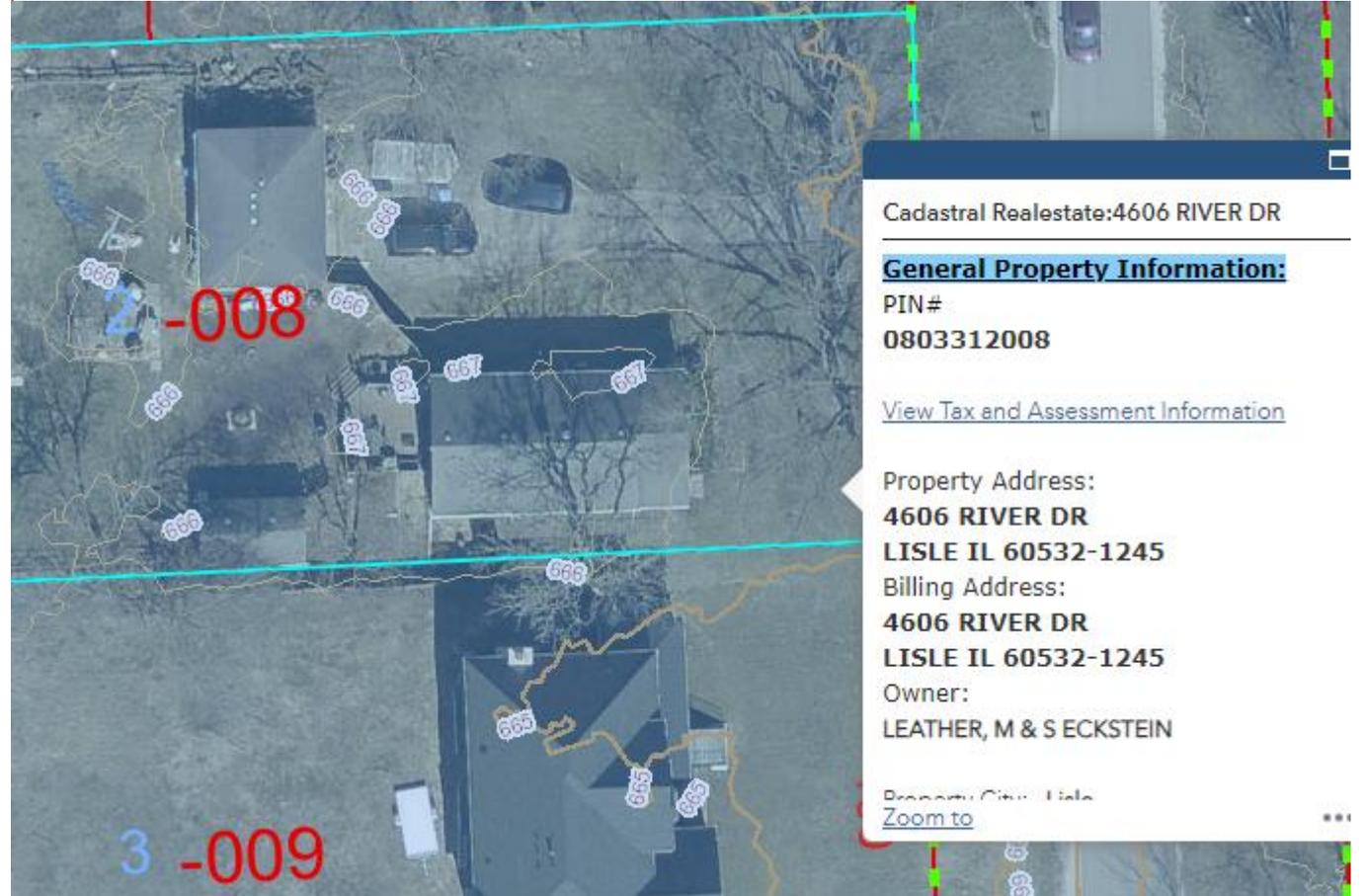
Last Name: _____

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

City: _____ State: _____

County/Parish: _____ Zip: _____

Phone: _____ Cell Phone: _____



ELEMENT PERCENTAGE Tab

Note: The inspector needs only enter the % Damage. Damage Values columns will be populated based on the SDE tool.

Residence Type: _____ Single-Family (SF) House

Item	% Damaged
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)	

Tax
Tax Summary
Tax Payment History
Tax Redemption
Tax Adjustment
Tax Status
Special Assessments
Mobile Home Information
Supervisor of Assessment Assessed Value Current
Assessed Value History
Property Transfer History
Conveyance History
Exemptions Current
Appeals History
Split/Combine History

PARCEL NUMBER: 08-03-312-008
 NBHD: 08035
 LEATHER, M & S ECKSTEIN
 Tax Year: 2022 (Taxes Payable in 2023).

COUNTY #: 022
 ROLL: RP
 4606 RIVER DR
 LISLE

Assessed Value Summary

Asmt Year	Pay Year	Class	Land AV	Bldg AV	Total AV	Taxable EAV	Reason Code
2021	2022		\$44,090	\$31,540	\$75,630	\$69,630	Conversion

Values Details

Asmt Year:	Roll:	Current Yr Township EQ Factor:	Current Yr New Construction Value:
2022	RP		\$0
2021	RP		\$0

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: _____

Assessed Building Value used as Market Value typically in Illinois: 3 x Assessed Value
 Example use \$94,620

SDE STRUCTURE / DAMAGE / NFIP INFO Tab**Structure Attributes / Information**Residence Type: Single Family Town or Row House Manufactured HouseFoundation: Continuous Wall w/Slab (Standard) Basement Crawlspace Piles Slab-on-Grade Piers and PostsSuperstructure: Stud-Framed (Standard) Common Brick ICF MasonryRoof Covering: Shingles – Asphalt, Wood (Standard) Clay Tile Standing Seam (Metal) SlateExterior Finish: Siding or Stucco (Standard) Brick Veneer EIFS None – common brick, structuralHVAC System: Heating and/or Cooling NoneStory: 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): _____

Residential Building Information

Res. Structure		Finish				Plumbing	
Occupancy Description	Single-Family / Owner Occupied	Total Rooms Above#	9	Bed Rooms Above#	4	Full Bath	2
Year Built	1978	Total Rooms Below#	0	Bed Rooms Below#	0	Shower Stall Bath	1
Style	1 Story Frame	Basement Finish #1				Toilet Room/Half-bath	1
Above Grade Total Living Area	2985	Basement Finish #2				Extra Sink/Lavatory	2
Quality	B-10	Basement Finish #3				Wet Bar	1
Basement	Crawl	Foundation	Conc				
Heat	FHA - Gas	Exterior Walls	Vert Wd				
AC	Yes	Roof	Asphlt / Gable				
Attic	None	Interior Finish	Drwl				
Foyer Adjustment	0	Flooring	Carp / Tile / Hdwd				
		Fireplace(s)					
		Masonry w/1 Extra, 1 Story			1		

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): _____

Make sure you note if this is depth in basement or first floor with full basement or full crawlspace

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

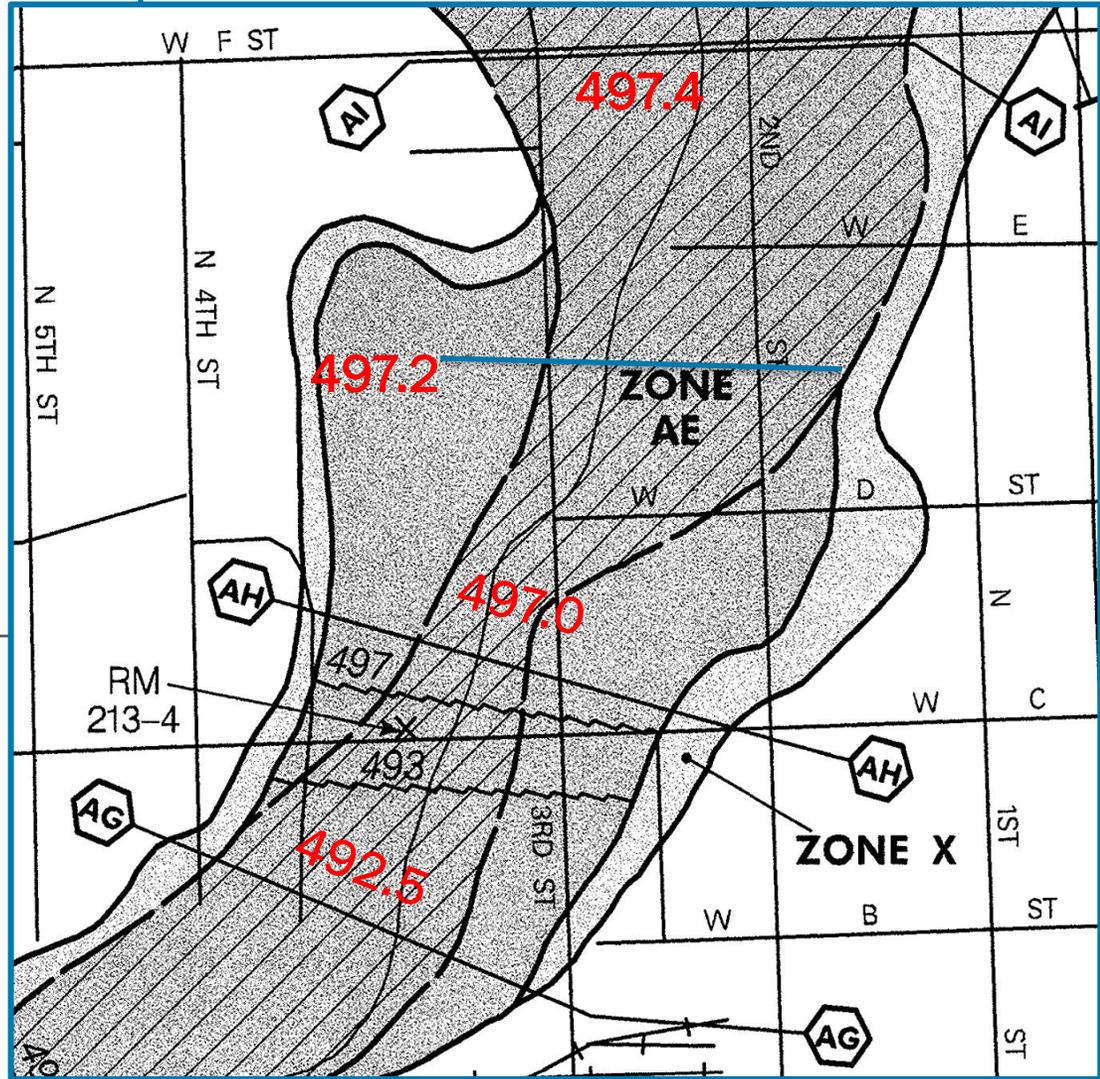
FIRM Zone: _____ Base Flood Elevation: _____

Regulatory Floodway: Yes No Possible

Community Information (if needed): _____

Flood depth based on debris lines or highwater marks

Take Base Flood Elevations from maps



COST Tab

Square Footage

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

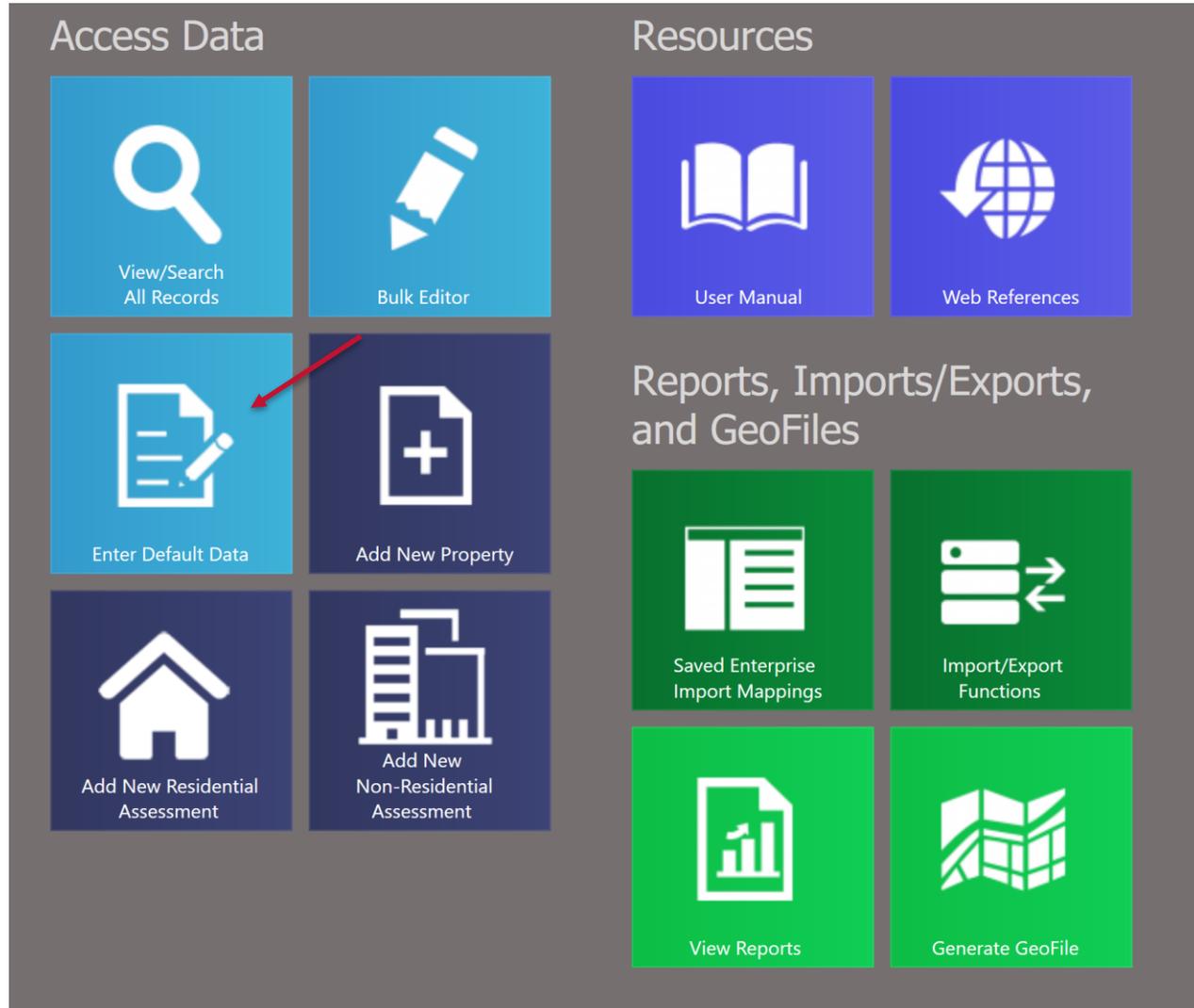
Geographic Adjustment: _____

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		



SDE Example – Enter Default Data



Community

State

Zip Code

NFIP Community Number

County

Date of Floodplain Map

SDE Substantial Damage Estimator 3.0

Default Data

Check Spelling

Clear All Values

Delete

Save

Address / Structure Information

City:

East St. Louis

State:

Illinois

County/Parish:

St Clair

Zip Code:

Year of Construction:

Datum:

1929

Cost Information

Base Cost:

Inspector / Damage Information

Date Damage Occurred:

7/26/2022

Cause of Damage:

Flood

Duration of Flood:

4.00 Days

Geographic Adjustment:

1.01

Cost Data Date:

8/8/2022

Inspector Name:

Inspector Phone:

Assessment Date:

Cost Data Reference:

RS Means

NFIP / Community Information

NFIP Community Name:

East St. Louis

NFIP Community ID:

170626

FIRM Panel Number:

FIRM Zone:

Make Selection...

Date of FIRM Panel:

11/5/2003

Suffix:

Make Selection...

Base Flood Elevation

Regulatory Floodway:

No

Space for Community Specific Information:

Empty text area for community specific information.



SDE Example – Adding Properties



Step 1

Build a list of properties
Using Add New Property

SDE Substantial Damage Estimator 3.0

Property Details



Property Data

Structure Owner First Name



Street Suffix

City

State

County/Parish

Zip Code

Parcel Number

Lot Number

Year of Construction

Latitude



Longitude



Structure Type

NFIP Information

NFIP Community Name

NFIP Community ID

FIRM Panel Number

FIRM Zone

Date of FIRM Panel

Suffix

Base Flood Elevation

Regulatory Floodway

Custom Fields

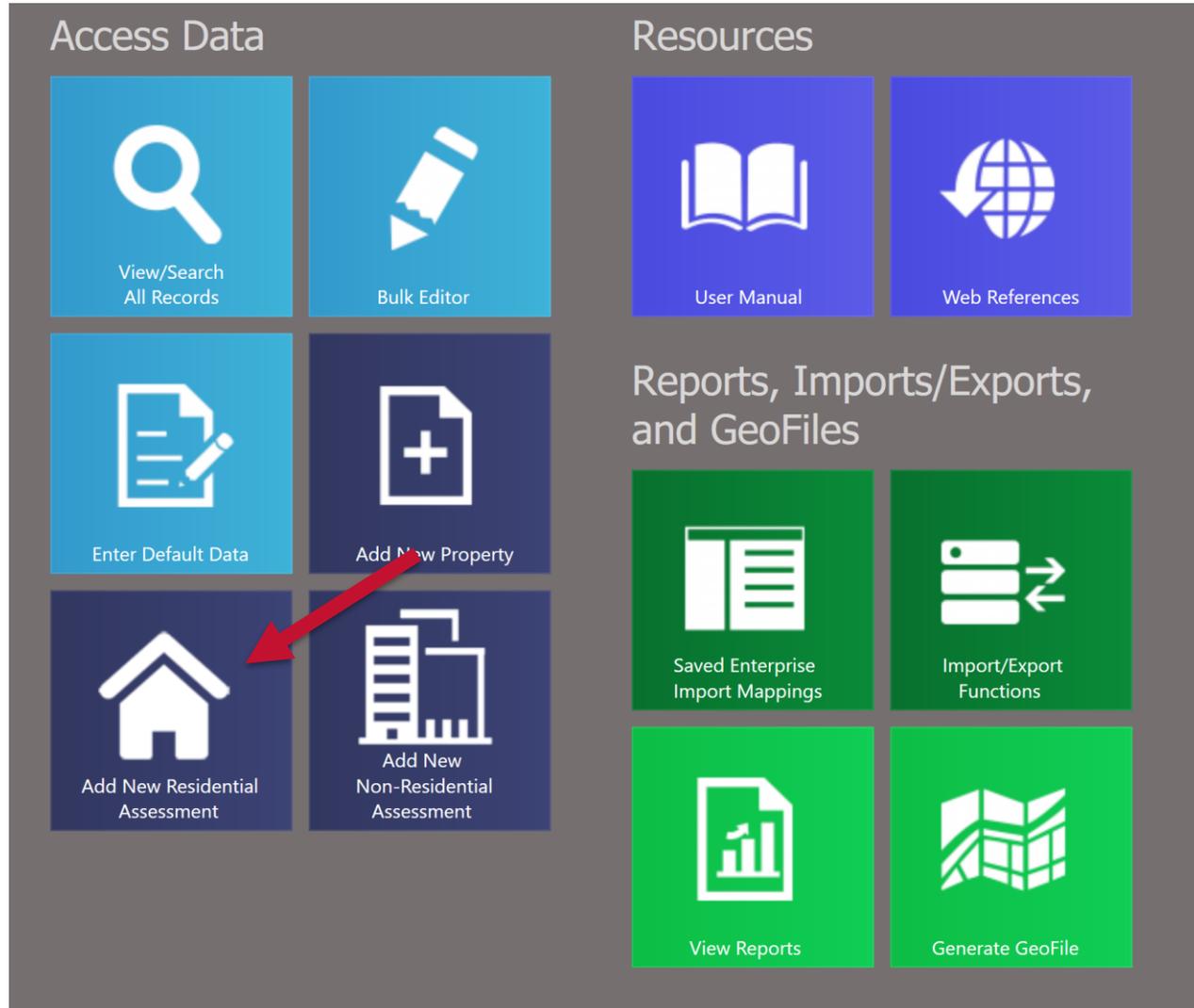
Custom Field 1

Custom Field 2

Custom Field 3



SDE Example – Adding Properties



Step 2

After the properties are entered, you will Add New Residential Assessment or Add New Non-Residential Assessment

Residential Assessment

⚠ Be sure to **SAVE** assessment record before generating a report.

Print Summary Report

Print Detailed Report

Check S

No Photo Available



Damage Date:
7/26/2022 10:07 PM

Assessment Date:
8/8/2022

Percent Damaged:
%

Address	Structure/Damage/NFIP	Cost	Element Percentages	Output Summary	Photos										
Structure Type: <input type="text" value="Residential"/>		Inspector Name: <input type="text" value="IDNR KP"/>		NFIP Community ID: <input type="text" value="170626"/>											
Story: <input type="text" value="One Story (Standard)"/>		Inspector Phone: <input type="text"/>		FIRM Panel Number: <input type="text" value="180"/>											
Residence Type: <input type="text" value="Single Family Residence"/>		Assessment Date: <input type="text" value="8/8/2022"/>		Suffix: <input type="text" value="Make Selection..."/>											
Foundation: <input type="text" value="Slab - on - Grade"/>		Date Damage Occurred: <input type="text" value="7/26/2022"/>		<table border="1"> <thead> <tr> <th>Element</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>9. Plumbing</td> <td> <ul style="list-style-type: none"> Incoming water service (municipal water supply or well service) Plumbing fixtures Water heater Water distribution system Wastewater collection and removal system </td> </tr> <tr> <td>10. Electrical</td> <td> <ul style="list-style-type: none"> Electrical wiring systems (junction boxes, circuit breaker panels, distribution wiring, outlets, switches, receptacles) Lighting Ceiling and exhaust fans Electric baseboard heaters </td> </tr> <tr> <td>11. Appliances</td> <td> <ul style="list-style-type: none"> All built-in, permanent appliances in the structure </td> </tr> <tr> <td>12. HVAC</td> <td> <ul style="list-style-type: none"> The system with which conditioned air is distributed throughout the structure; a typical system in residential structures involves a forced-air heating system with duct work Exterior air conditioning units Heat pumps Furnaces </td> </tr> </tbody> </table>		Element	Description	9. Plumbing	<ul style="list-style-type: none"> Incoming water service (municipal water supply or well service) Plumbing fixtures Water heater Water distribution system Wastewater collection and removal system 	10. Electrical	<ul style="list-style-type: none"> Electrical wiring systems (junction boxes, circuit breaker panels, distribution wiring, outlets, switches, receptacles) Lighting Ceiling and exhaust fans Electric baseboard heaters 	11. Appliances	<ul style="list-style-type: none"> All built-in, permanent appliances in the structure 	12. HVAC	<ul style="list-style-type: none"> The system with which conditioned air is distributed throughout the structure; a typical system in residential structures involves a forced-air heating system with duct work Exterior air conditioning units Heat pumps Furnaces
Element	Description														
9. Plumbing	<ul style="list-style-type: none"> Incoming water service (municipal water supply or well service) Plumbing fixtures Water heater Water distribution system Wastewater collection and removal system 														
10. Electrical	<ul style="list-style-type: none"> Electrical wiring systems (junction boxes, circuit breaker panels, distribution wiring, outlets, switches, receptacles) Lighting Ceiling and exhaust fans Electric baseboard heaters 														
11. Appliances	<ul style="list-style-type: none"> All built-in, permanent appliances in the structure 														
12. HVAC	<ul style="list-style-type: none"> The system with which conditioned air is distributed throughout the structure; a typical system in residential structures involves a forced-air heating system with duct work Exterior air conditioning units Heat pumps Furnaces 														
Superstructure: <input type="text" value="Stud-framed (Standard)"/>		Cause of Damage: <input type="text" value="Flood"/>													
Roof Covering: <input type="text" value="Shingles - Asphalt, Wood (Standard)"/>		<input type="checkbox"/> Damage Undetermined <input type="text" value="Make Selection..."/>													
Exterior Finish: <input type="text" value="Siding or Stucco (Standard)"/>		Duration of Flood: <input type="text" value="4.00"/>													
HVAC System: <input type="text" value="Heating and/or Cooling"/>		Est. Depth of Flood Above Ground: <input type="text" value="3.00"/>													
Year of Construction: <input type="text" value="1970"/>		Est. Depth of Flood Above Lowest Floor: <input type="text" value="2.50"/>													
Quality: <input type="text"/>															

SDE Example

Address Structure/Damage/NFIP Cost Element Percentages Output Summary Photos

Page 1 of 1

07/29/22 6:16:13

Square Footage

Click to calculate or enter square footage:

Cost Adjustments

Adjustments

Roofing

Heating / Cooling

Appliances

Fireplaces

Porch / Breeding

Garage

Additional Adjustments

Adjustments:

Quantity:

Unit Cost:

Adjustment Cost:

0.00

\$0.00

\$0.00

Square Foot Calculator

Select a shape to add it to the structure:



Enter Total Square

Square Foot Breakdown

Shape Type

No Shape

Enter Total Square Footage:

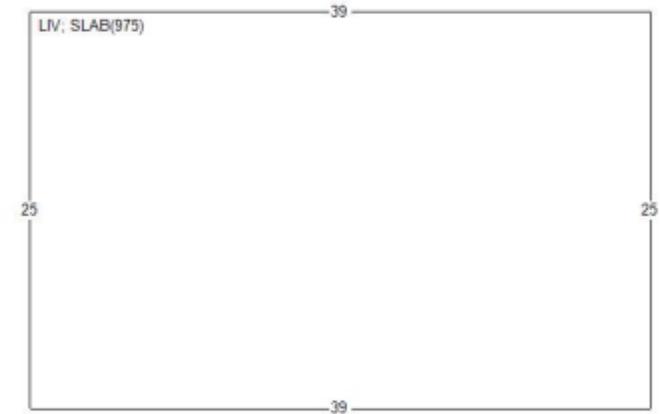
975

Save

Close (No Save)

History
r
e Fami
r
asonry

Site Address: EAST SAINT LOUIS TERRACE IL 62203 DR
000636



AREA	FLAT	EFF%	E/AREA	ACT%	A/AREA	EA/AA	HEATED	NBHD
LIV	975	1.00	975	1.00	975	975	975	
SLAB	975	1.00	975	1.00	975	975		

SDE Example

Residential Assessment

No Photo Available



East St. Louis
Illinois

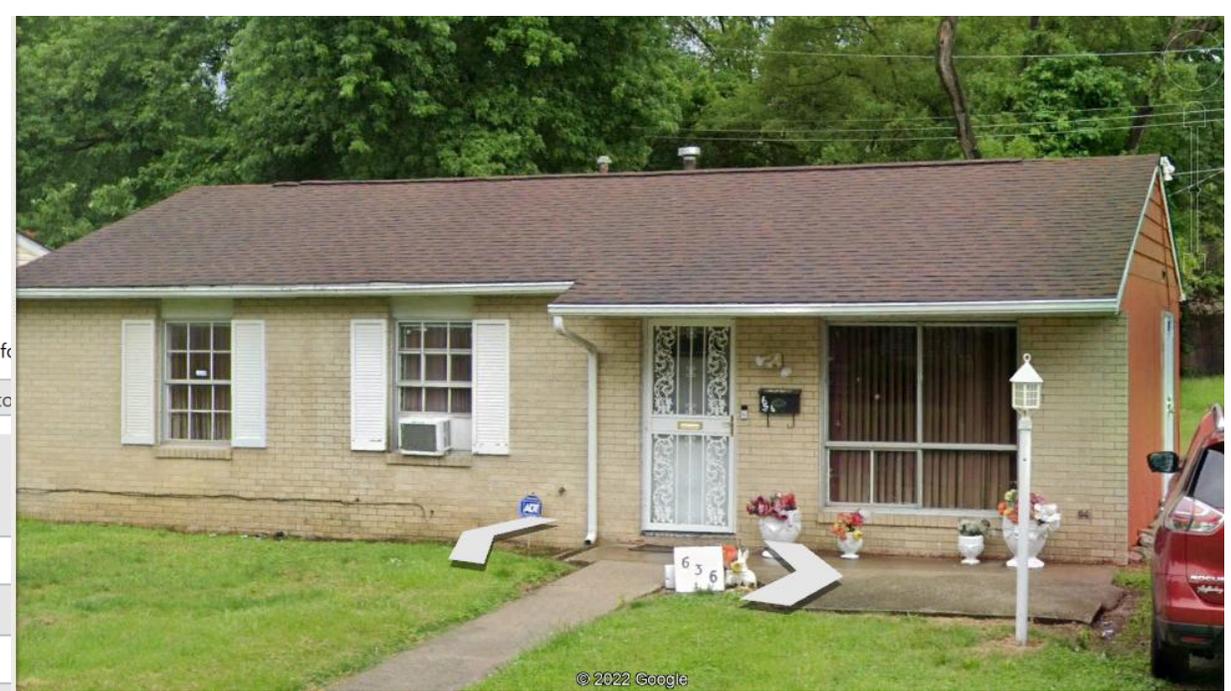
Damage Date:
7/26/2022 10:07 PM

Assessment Date:
8/8/2022

Percent Damaged:
%

! Be sure to **SAVE** assessment record before

Address	Structure/Damage/NFIP	Cost	Element Percentages	Output Summary	Photo																					
<h3>Square Footage</h3> <div style="display: flex; justify-content: space-between;"> <div style="border: 1px solid #ccc; padding: 5px; width: 20%;"> <p>Click to calculate or enter square footage:</p> </div> <div> <p>Base Cost: <input type="text" value="\$0.00"/></p> <p>Geographic Adjustment: <input type="text" value="0.00"/></p> </div> </div>																										
<h3>Cost Adjustments</h3> <table border="1"> <thead> <tr> <th>Adjustments:</th> <th>Quantity:</th> <th>Unit:</th> </tr> </thead> <tbody> <tr> <td>Roofing</td> <td><input type="text" value="0.00"/></td> <td>Sq Ft</td> </tr> <tr> <td>Heating / Cooling</td> <td><input type="text" value="0.00"/></td> <td>Ea</td> </tr> <tr> <td>Appliances</td> <td><input type="text" value="0.00"/></td> <td>Ea</td> </tr> <tr> <td>Fireplaces</td> <td><input type="text" value="0.00"/></td> <td>Ea</td> </tr> <tr> <td>Porch / Breezeways</td> <td><input type="text" value="0.00"/></td> <td>Sq Ft</td> </tr> <tr> <td>Garage</td> <td><input type="text" value="0.00"/></td> <td>Sq Ft</td> </tr> </tbody> </table>						Adjustments:	Quantity:	Unit:	Roofing	<input type="text" value="0.00"/>	Sq Ft	Heating / Cooling	<input type="text" value="0.00"/>	Ea	Appliances	<input type="text" value="0.00"/>	Ea	Fireplaces	<input type="text" value="0.00"/>	Ea	Porch / Breezeways	<input type="text" value="0.00"/>	Sq Ft	Garage	<input type="text" value="0.00"/>	Sq Ft
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<input type="text"/>	<input type="text" value="0.00"/>																									



Using RS Means

Economy Home has no masonry option

Economy - Wood Siding 800 - \$143.90

975 - \$133.80

1000 - \$132.35

Economy - Brick veneer 800- \$149.45

975 - \$138.9

1000- \$137.40

$$(.75 \times 133.8) + (.25 \times 138.9) = \$135$$

Residential Assessment

! Be sure to **SAVE** assessment record before generating a report.

[Print Summary Report](#)

[Print Detailed Report](#)

[Check Spelling](#)

No Photo Available



- Address
- Structure/Damage/NFIP
- Cost
- Element Percentages**
- Output Summary
- Photos

Element Percentages

Element:	Percent Damaged:	Element Percentage:	Element Cost:	Damage Values:
Foundation:	<input type="text" value="0.0%"/>	8 %	\$10,635.30	\$0.00
Superstructure:	<input type="text" value="0.0%"/>	15.9 %	\$21,137.66	\$0.00
Roof Covering:	<input type="text" value="0.0%"/>	4.3 %	\$5,716.47	\$0.00
Exterior Finish:	<input type="text" value="30.0%"/>	7 %	\$9,305.89	\$2,791.77
Doors and Windows:	<input type="text" value="40.0%"/>	15.8 %	\$21,004.72	\$8,401.89
Cabinets and Countertops:	<input type="text" value="50.0%"/>	4.5 %	\$5,982.36	\$2,991.18
Floor Finish:	<input type="text" value="100.0%"/>	7.9 %	\$10,502.36	\$10,502.36
Plumbing:	<input type="text" value="20.0%"/>	8.6 %	\$11,432.95	\$2,286.59
Electrical:	<input type="text" value="20.0%"/>	4.9 %	\$6,514.12	\$1,302.82
Appliances:	<input type="text" value="50.0%"/>	4.2 %	\$5,583.53	\$2,791.77
Interior Finish:	<input type="text" value="50.0%"/>	13.2 %	\$17,548.25	\$8,774.12
HVAC:	<input type="text" value="80.0%"/>	5.7 %	\$7,577.65	\$6,062.12

Damage Date:
7/26/2022 10:07 PM

Assessment Date:
8/8/2022

Percent Damaged:
45.6 %

Replacement Cost: \$132,941.25
Computed Damages: **\$45,904.61**

Estimated 2 feet over first floor

Residential Assessment

⚠ Be sure to **SAVE** assessment record before generating a report.

Print Summary Report

Print Detailed Report

No Photo Available



Damage Date:
7/28/2022 12:27 PM

Assessment Date:
8/8/2022

Percent Damaged:
100.0 %

- Address
- Structure/Damage/NFIP
- Cost
- Element Percentages**
- Output Summary
- Photos

Element Percentages

Element:	Percent Damaged:	Element Percentage:	Element Cost:	Damage Values:
Foundation:	<input type="text" value="0.0%"/>	9 %	\$12,030.26	\$0.00
Superstructure:	<input type="text" value="0.0%"/>	16.4 %	\$21,921.81	\$0.00
Roof Covering:	<input type="text" value="0.0%"/>	4.3 %	\$5,747.79	\$0.00
Exterior Finish:	<input type="text" value="5.0%"/>	6.9 %	\$9,223.20	\$461.16
Doors and Windows:	<input type="text" value="10.0%"/>	15.5 %	\$20,718.79	\$2,071.88
Cabinets and Countertops:	<input type="text" value="20.0%"/>	4.4 %	\$5,881.46	\$1,176.29
Floor Finish:	<input type="text" value="100.0%"/>	7.7 %	\$10,292.56	\$10,292.56
Plumbing:	<input type="text" value="0.0%"/>	8.4 %	\$11,228.25	\$0.00
Electrical:	<input type="text" value="0.0%"/>	4.8 %	\$6,416.14	\$0.00
Appliances:	<input type="text" value="0.0%"/>	4.1 %	\$5,480.45	\$0.00
Interior Finish:	<input type="text" value="5.0%"/>	13 %	\$17,377.05	\$868.85
HVAC:	<input type="text" value="0.0%"/>	5.5 %	\$7,351.83	\$0.00

Estimated 0.5 feet over first floor

Replacement Cost: Computed Damages:

\$133,669.60 **\$14,870.74**

SDE Example - Reports

Substantial Damage Estimator 3.0

Main Menu File Tools Custom Fields Database Functions Import/Export Reports Help

SDE Substantial Damage Estimator 3.0

Access Data

-  View/Search All Records
-  Bulk Editor
-  Enter Default Data
-  Add New Property
-  Add New Residential Assessment
-  Add New Non-Residential Assessment

Resources

-  User Manual
-  Web References

Reports, Imports/Exports, and GeoFiles

-  Saved Enterprise Import Mappings
-  Import/Export Functions
-  View Reports
-  Generate GeoFile



Substantial Damage Estimator

Subdivision		Community	
Subdivision	Elev. of Lowest Floor	NFIP Community Name	East St. Louis
Parcel #	ft.	NFIP Community ID #	170626
Lot #	Datum 1929	Latitude	Longitude 0.000000

Structure Address

Owner's Name
Street Address
City
County/Parish
State
Zip
Phone

No Photo Available



Structure Information

Year of Construction 1951

Residence Type Single Family Residence
Quality Budget

Damage Information

Date of Assessment	11/13/2022	Date of Damage	11/13/2022	Residence Information
Inspector Name	IDNR	Cause of Damage	Flood	
Inspector Phone		Duration of Flood	3 Days	
		Est. Depth of Flood Above Lowest Floor	0.50	

NFIP Information

Firm Panel #	Suffix	Date of FIRMPanel	Firm Zone	BFE	Regulatory Floodway
180	D	11/05/2003	AH	418.00	No

Percent Damaged

Basis for Value of Structure	Percent Damaged	Basis for Cost of Repairs
\$13,776.00	100.0 %	\$15,227.44
Adj. Tax Assessed Value	Substantially Damaged	Computed Damages

Damage Summary

Replacement Cost	\$119,197.17	Computed Damages	\$15,227.44
Depreciation %	38.8 %	Percent of Existing Improvements and Repairs Pre-Disaster	0.0 %
Computed Actual Cash Value*	\$72,948.67	Repair/Reconstruction %	19.8 %
		Other Depreciation Explanation	

* Per FEMA Publication 213, Actual Cash Value may be used as Market Value.

Optional User Entered Data

Professional Market Appraisal	\$0.00	Contractor Estimate
Tax Assessed Value	\$4,592.00	\$0.00
Factor Adjustment	3	Community Estimate
Adjusted Tax Assessed Value	\$13,776.00	\$0.00

Authorized Local Official : _____ Signature _____ Printed Name _____
 Wednesday, November 16, 2022 Page 1 of 1

Firm Panel #	Suffix	Date of FIRMPanel	Firm Zone	BFE	Regulatory Floodway
180	D	11/05/2003	AH	418.00	No

Percent Damaged

Basis for Value of Structure	Percent Damaged	Basis for Cost of Repairs
\$13,776.00	100.0 %	\$15,227.44
Adj. Tax Assessed Value	Substantially Damaged	Computed Damages

Damage Summary

Replacement Cost	\$119,197.17	Computed Damages	\$15,227.44
Depreciation %	38.8 %	Percent of Existing Improvements and Repairs Pre-Disaster	0.0 %
Computed Actual Cash Value*	\$72,948.67	Repair/Reconstruction %	19.8 %
		Other Depreciation Explanation	

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Factor Adjustment	3	Community Estimate
Adjusted Tax Assessed Value	\$13,776.00	\$0.00

Authorized Local Official : _____ Signature _____ Printed Name _____
 Wednesday, November 16, 2022 Page 1 of 1

Summary Report – Attach to the Substantial Damage/ Damage Assessment Letter

Notification of Property Owner

- Substantial Damage Determination Letters will need to be delivered regardless of damage percentage
- What methods of delivering notices to homeowners?
 - Hand delivery
 - Registered mail
- Provides information on repair and recovery
- Keep record of date sent, this prevents the “I didn’t get a SD letter” scenario

06/12/2000

John & Jane Q. Public
1234 Flooded-By-The-River Rd.
Deepwater II 61000

RE: Substantial Damage
1234 Flooded-By-The-River Rd.

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 name) _____’s 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:	170XXX
Parcel Zone Information:	Zone A
Fair Market Value of structure:	\$31,226 (based on 3.3 x assessed value)
Flood Damage:	
June 2008	<u>\$18,864</u>
Total damages	\$18,864
Percent Damaged:	60.4% damage due to flooding
Ordinance Requirement:	Mitigation (elevation, removal)

The determination is that this structure is declared **Substantially Damaged** due to flooding and must be brought into compliance with the ____ (insert community name) _____ 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, Building Permits, and an **Elevation Certificate** will be required prior to the issuance of a *Certificate of Occupancy*. This structure may **NOT** be occupied until these corrections are made. Please contact this office at your earliest convenience to make an appointment with me to discuss your upcoming project. If you have any additional questions, you may feel free to give me a call at xxx-xxxx.

Sincerely,

Next Steps

- You have completed your SD determinations, issued your SD determination letters and have worked through any appeals that may have come up. What's next?
 - All work, repairs, and development in the SFHA **MUST** be permitted
 - Follow through with your normal floodplain permitting process, keeping a close eye on any changes that might affect the SD Determination (Higher quality building materials, alteration from original construction plan)
 - Does your Community have a Cumulative Improvement/ damage requirement ?
 - Continue to monitor for unpermitted work while in the SFHA

FLOOD PLAIN DEVELOPMENT APPLICATION/PERMIT

Application # _____ Date _____

TO THE ADMINISTRATOR: The undersigned hereby makes application for a Permit to develop in a flood plain. The work to be performed, including flood protection works, is as described below and in attachments hereto. The undersigned agrees that all such work shall be done in accordance with the requirements of the City of Dubuque Flood Plain Management Ordinance and with all other applicable county/city ordinances and the laws and regulations of the State of Iowa.

(Owner or Agent) (Date) (Builder) (Date)

(Address) (Address)

Telephone # _____ Telephone# _____

1. Legal Description: _____
Street Address: _____

2. Type of Development
Filling _____ Grading _____ Excavation _____ Routine Maintenance _____
Minor Improvement _____ Substantial Improvement _____ New Construction _____

3. Description of Development _____

4. Premises: Area of Site: _____ sq. ft./acres Estimated cost: \$ _____
Principal Use: _____
Accessory Uses (Storage, parking, etc.) _____

5. Addition/modification to non-conforming use? Yes _____ No _____
Assessed value of structure \$ _____

6. Is property located in a designated Floodway (FW District)? Yes _____ No _____

IF ANSWERED YES, CERTIFICATION MUST BE PROVIDED PRIOR TO THE ISSUANCE OF A PERMIT TO DEVELOP, THAT THE PROPOSED DEVELOPMENT WILL RESULT IN NO INCREASE IN THE 100 YEAR (BASE) FLOOD ELEVATION.

7. Property located in a designated Floodway Fringe (FF) or General Flood Plain (FP)?
Yes ___ No ___ If yes, indicate which one: _____

Next Steps – Temporary Occupancy Permits



FOR BUILDINGS, ESPECIALLY HOMES, THAT HAVE REACHED SUBSTANTIAL DAMAGE LEVEL



ALLOW MINIMAL REPAIRS FOR LIFE SAFETY SO HOME CAN BE OCCUPIED



ALLOWS TIME FOR MITIGATION – DESIGN OF AN ELEVATION OR A GRANT FOR ACQUISITION



SET TIMELINE WHEN TEMPORARY OCCUPANCY WILL EXPIRE (6 YEARS FOR ICC BUT DON'T WAIT THAT LONG, CAN EXTEND IF DELAYED BY A GRANT)



STATE TEMPLATE AVAILABLE

Questions?

Erin Conley
IDNR Floodplain State Coordinator
(217) 782-4428
erin.c.conley@illinois.gov



Michelle Staff
(202) 704-1098
FEMA Regional Specialist
michelle.staff@fema.dhs.gov

