

# FLOOD DAMAGE ASSESSMENT TOOLKIT FOR UTAH FLOODPLAIN MANAGERS



*Cedar City, UT | Flood Event 2021 | Source: UTDEM*



*Grand County, UT | Flood Event 2022 | Source: Grand County*



*Enoch, UT | Flood Event 2021 | Source: Andy Losee & Enoch City*



*Soldier Creek, Tooele County, UT | Flood Event 2022 | Source: Tooele County EM*

JULY 2024

VERSION 1.0

*This Toolkit was a collaborative effort by the Utah Silver Jackets Team. Silver Jackets is an interagency partnership program encouraging federal, state, local, and tribal agencies to work together to find solutions for complex flood risk management issues.*



*Agencies that contributed to this guide include:*

**Grand County, Utah**

**Utah Division of Emergency Management**

**Federal Emergency Management Agency**

**National Weather Service**

**U.S. Army Corps of Engineers**

## **Contents**

- **Page 1 -----Following a Flood**
- **Page 3 -----Substantial Damage "The 50% Rule"**
- **Page 6 -----FEMA Substantial Damage Estimator (SDE 3.0)**
- **Page 17 -----Sample Door Hangers, Letters, Forms, and News Releases**

## FOLLOWING A FLOOD

**Note:** This toolkit is intended for Utah Floodplain Managers and others assessing flood damage after a high water event. The toolkit was developed in cooperation with the Utah Silver Jackets Program and funded under the Floodplain Management Services authority provided by Section 206 of the 1960 Flood Control Act, as amended. It can be used digitally or printed out.

All local floodplain management ordinances in the State of Utah require permits for the repair or reconstruction of flood damaged structures. Make sure you are working with your local building inspector and other agencies, as additional permits may be required even for structures outside of the SFHA. These structures may need to be identified for other reporting purposes. 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 community's floodplain management ordinance.

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

### **STEP 1: Contact your local emergency manager and/or your County Floodplain Manager liaison.**

Your County contacts will advise on the need to contact the State Floodplain Manager at the Utah Division of Emergency Management. The State Floodplain Management office has experience, materials, and guidance to assist in carrying out all floodplain management responsibilities. The phone number for Utah Division of Emergency Management is 801-538-3400.

### **STEP 2: Identify those structures believed to be *substantially damaged* and begin doing damage assessments.**

Substantial Damage assessments are required for structures located in the 1% SFHA in communities participating in the National Flood Insurance Program (NFIP).

A building is ***substantially damaged*** when the cost of repairs is 50% or more of the structure's "pre-damaged" market value.

A ***damage assessment*** is the process of determining the location, nature, and severity of damage

However, ***damage assessments*** need to be completed for all flood-damaged properties, even outside the SFHA, before they start the recovery process and rebuild. These assessments are submitted to the state and then to FEMA.

The Substantial Damages process is discussed later in this toolkit. Local officials should tour the flooded areas in the 1% SFHA 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.

**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 recedes from the structure. Therefore, it is very important that this step take place as soon as possible. History shows that information spreads quickly among flood victims. Posted signs, flyers, notices on damaged structures, press releases, and letters mailed to individual owners can all be used to share information with the public. The public will learn 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.

A sample press release is included with this toolkit (see Page 21). Damage assessments can be difficult. Local officials should inspect every flood-damaged building and calculate the cost of repairs. The pre-flood market value of every flooded structure can quickly be estimated from the County Assessor’s records.

**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. Mitigation technical manuals, guidance, programs, and grants may be available. To find out more information contact the Utah Division of Emergency Management mitigation program experts at 801-538-3400.

**STEP 5: Implement a permit application procedure.** Structures identified as substantially damaged should be “red-tagged”. Permits should not be issued until compliance with the local floodplain ordinance is demonstrated. Once Steps 2 – 4 have been completed, properties determined as not having substantial damage, or are outside of the SFHA, can be issued permits to repair.

## SUBSTANTIAL DAMAGE “THE 50% RULE”

Communities participating in the NFIP have adopted, and are expected to enforce, a floodplain management ordinance. New structures located in the SFHA 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 the SFHA 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, i.e. 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 (including volunteer labor).

**CUMULATIVE COST:** If standards for *Cumulative Improvement* are adopted in a community’s floodplain management ordinance, substantial damage occurs at the point where multiple damages or *improvements* total 50% or more of the pre-damage/*pre-improvement* 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 Utah professional appraiser.
- ✓ Detailed estimates of the structure’s Actual Cash Value (replacement cost minus depreciation).
- ✓ Qualified estimates based on sound professional judgment made by the staff of the local building department.

**DETERMINATION OF EVENT DAMAGE – COST OF REPAIR.** “Substantial Damage” refers to the repair of all damage sustained and CANNOT reflect a level of repairs that is LESS than the amount of the damage sustained. Even 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-damaged condition constitutes Substantial Damage.



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

- ✓ 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, etc. This should NOT include cleanup or disposal of contents.
- ✓ Labor and other costs associated with demolition, moving, or altering of the structure to accommodate improvement, additions and making repairs.
- ✓ 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 Base Flood Elevation.
- ✓ Construction management and supervision
- ✓ Contractor's overhead and profit
- ✓ Sales tax on materials

**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

**Find the Substantial Damage Desk Reference at:**

[https://www.fema.gov/sites/default/files/documents/fema\\_nfip\\_substantial-improvement-substantial-damage-desk-reference.pdf](https://www.fema.gov/sites/default/files/documents/fema_nfip_substantial-improvement-substantial-damage-desk-reference.pdf)

FEMA P-758, May 2010

**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

**SUBSTANTIAL IMPROVEMENT/SUBSTANTIAL DAMAGE DESK REFERENCE**

FEMA P-758, May, 2010, P. 4-7

You can find the desk reference at:

*[https://www.fema.gov/sites/default/files/documents/fema\\_nfip\\_substantial-improvement-substantial-damage-desk-reference.pdf](https://www.fema.gov/sites/default/files/documents/fema_nfip_substantial-improvement-substantial-damage-desk-reference.pdf)*

## FEMA SUBSTANTIAL DAMAGE ESTIMATOR (SDE 3.0)

*From the FEMA Substantial Damage Estimator (SDE 3.0) SDE Cheat Sheet Residential Field Worksheet  
Non-Residential Field Worksheet Long hand Field Worksheet*

FEMA developed the [\*Substantial Damage Estimator \(SDE\) Tool\*](#) to assist State & local officials in determining substantial damage for residential & non-residential structures in accordance with local floodplain management ordinances meeting the regulatory requirements of the NFIP. This tool can be used to assess flood, wind, wildfire, seismic, and other forms of damage.

**NOTE:** For small events with a small number of damaged structures, it may not be appropriate to use the SDE tool. However, the worksheets in this toolkit may still be useful.

The SDE 3.0 Tool is based on the concept of using damage estimates for individual structural 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 a structure's values and damage in accordance with NFIP requirements.

Communities with multiple flooding issues should obtain the SDE 3.0 software and Field Workbook and learn to use the program. Using the software will save time and research. SDE 3.0 software can be downloaded directly from the FEMA website:

<https://www.fema.gov/emergency-managers/risk-management/building-science/substantial-damage-estimator-tool>

The Installation Package ZIP file contains all the items needed to load SDE 3.0. This ZIP file contains the manuals listed on the website download page, including the Installation Guide which will provide answers to installation questions that have not been included in this toolkit. IT personnel should be contacted when having trouble installing the SDE software.

Please note that in the past the State Floodplain Management section downloaded and distributed the user's manual and all associated forms to the community. The SDE program size increased substantially during the recent updates, therefore providing paper copies of the manuals is no longer an option.

If you have any questions or concerns, contact the Utah Division of Emergency Management number at 801-538-3400.



## 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:

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

1. After opening the FEMA website (<http://www.fema.gov>), click on the Emergency Management tab, click on Building Science, then on the left hand side find Substantial Damage Estimator Tool or use the SDE web page found at <https://www.fema.gov/emergency-managers/risk-management/building-science/substantial-damage-estimator-tool> to locate the SDE tool download function.
2. Download the SDE installation ZIP file 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 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 SUBSTANTIAL DAMAGE ESTIMATOR “CHEAT SHEET”

The SDE 3.0 Tool requires the inspector to estimate the percent of damage for various building components. The information compiled below can be used with the **SDE worksheet(s)** to quickly calculate substantial damage. Worksheets can be found following this cheat sheet section. The SDE 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 their property.

✓ **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 – damage where water depths exceed 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 hydrodynamic forces acting on the exterior walls of the structure. Some brick or brick veneer structures may have actual damages less than those shown.*

## THE SUBSTANTIAL DAMAGE ESTIMATOR "CHEAT SHEET" - CONTINUED

### ✓ Superstructure Cont.

- 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
- 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
- Floor Coverings
  - 100% if waters greater than 1 inch
  - 20% for ceramic tile, brick, or concrete floors
- 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
- 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

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

*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.*

*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 Field Worksheet

## RESIDENTIAL/MANUFACTURED HOMES SIGNIFICANT DAMAGE INSPECTION WORKSHEET

### **Building Address**

Owner First Name: \_\_\_\_\_ Owner Last Name: \_\_\_\_\_

Street Number: \_\_\_\_\_ Street Name: \_\_\_\_\_

City: \_\_\_\_\_ ZIP Code: \_\_\_\_\_

**Mailing Address** (write below) **Check here if same as above:** \_\_\_\_\_ (IF KNOWN)

Have Right of Entry form returned Yes No

Initial here to give right to enter \_\_\_\_\_

Date permission given to enter \_\_\_\_\_

### **Additional Structure Information: (BEFORE Damage Occurred) CHECK ONE in Each Category**

**Quality of Construction Prior to Damage:** \_\_\_\_\_ Low \_\_\_\_\_ Average \_\_\_\_\_ Excellent

**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 (Standard) \_\_\_\_\_ Wood \_\_\_\_\_ Clay tile \_\_\_\_\_ Slate

\_\_\_\_\_ Standing Seam (Metal)

**Exterior Finish:** \_\_\_\_\_ Siding or Stucco (Standard) \_\_\_\_\_ Brick Veneer \_\_\_\_\_ EIFS

\_\_\_\_\_ Common brick, structural \_\_\_\_\_ None

**HVAC System:** \_\_\_\_\_ Heating and/or Cooling \_\_\_\_\_ NONE \_\_\_\_\_

**Story:** \_\_\_\_\_ One Story (Standard) \_\_\_\_\_ Two or More Stories

**Depth of Flood Above Ground:** (estimated to nearest foot) \_\_\_\_\_ **IF KNOWN**

**Depth of Flood Above First Floor** (estimated to nearest foot) \_\_\_\_\_ **IF KNOWN**

**No Physical Damage** (Check here if none): \_\_\_\_\_

**Duration of Flood:** \_\_\_\_\_ Hours \_\_\_\_\_ Days

Date Damage Occurred (MM/DD/YYYY) \_\_\_\_\_

**CAUSE of DAMAGE:** \_\_\_\_\_ Fire \_\_\_\_\_ Flood \_\_\_\_\_ Flood & Wind \_\_\_\_\_ Seismic \_\_\_\_\_ Wind

Has NFIP Insurance: \_\_\_\_\_ YES; \_\_\_\_\_ NO (IF KNOWN)

Has Photos: \_\_\_\_\_ No \_\_\_\_\_ Yes How Many photos \_\_\_\_\_

**Depreciation Rating (Wear & Tear):** \_\_\_\_\_ **1. Requires Extensive Repairs** \_\_\_\_\_ **2. Requires some Repairs,**  
\_\_\_\_\_ **3. Average Condition** \_\_\_\_\_ **4. Above Average Condition** \_\_\_\_\_ **5. Excellent Condition**

**NOTES:**

<b><u>ELEMENT PERCENTAGES</u></b>	<b><u>% DAMAGED</u></b>
Foundation	_____
Superstructure	_____
Roof Covering	_____
Exterior Finish	_____
Interior Finish	_____
Doors & Windows	_____
Cabinets & Countertops	_____
Floor Finish	_____
Plumbing	_____
Electrical	_____
Appliances	_____
HVAC	_____
Skirting/Forms/Piers ( <b>MH only</b> )	_____

**Inspectors Name:** \_\_\_\_\_ **Date of Inspection:** \_\_\_\_\_  
MM/DD/YR

**Inspectors Phone:** \_\_\_\_\_

**ANY NOTES: (No one sees this form but officials)**

# Non-Residential Field Worksheet

## NON-RESIDENTIAL SIGNIFICANT DAMAGE INSPECTION WORKSHEET

### Building Address Information

Owner First Name: \_\_\_\_\_ Owner Last Name: \_\_\_\_\_

Street Address: \_\_\_\_\_

City: \_\_\_\_\_ ZIP \_\_\_\_\_

Code: \_\_\_\_\_ **Mailing Address** (If different than above):

Have Right of Entry Form? Yes No

Initial here to give right to enter \_\_\_\_\_

Date permission given to enter \_\_\_\_\_

Year of Construction \_\_\_\_\_ Number of Stories: 1 Story \_\_\_\_\_, 2 thru 4 \_\_\_\_\_, 5 or More \_\_\_\_\_

Structure Use \_\_\_\_\_

**Foundation Type:** \_\_\_\_\_ 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 (Standard) \_\_\_\_\_ Wood \_\_\_\_\_ Clay tile

\_\_\_\_\_ Slate \_\_\_\_\_ Standing Seam (Metal)

**Interior:** \_\_\_\_\_

**HVAC System:** \_\_\_\_\_ Heating and/or Cooling \_\_\_\_\_ Where located? \_\_\_\_\_

**Electrical** \_\_\_\_\_

**Plumbing** \_\_\_\_\_

**Depth of Flood Above Ground:** (estimated to nearest 0.5 foot) \_\_\_\_\_

**Depth of Flood Above First Floor** (estimated to nearest 0.5 foot) \_\_\_\_\_

**No Physical Damage** (Check here if none) \_\_\_\_\_

**Duration of Flood:** Days: \_\_\_\_\_ Hours \_\_\_\_\_

Inspectors Name: \_\_\_\_\_ Date of Inspection: \_\_\_\_\_

(MM/DD/YYYY)

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



**Quality of Construction Prior to Damage:** \_\_\_\_\_ Low \_\_\_\_\_ Average \_\_\_\_\_ Excellent

Low - Plain, no alterations, no attention to details

Average - Some ornamentation on front elevation, finished paneling, wallpaper,.

Excellent- Unique finishes, custom ornamentation and materials.

**Depreciation Rating (Wear & Tear):** \_\_\_\_\_ 1. Requires Extensive Repairs \_\_\_\_\_ 2. Requires some Repairs  
\_\_\_\_\_ 3. Average Condition \_\_\_\_\_ 4. Above Average Condition \_\_\_\_\_ 5. Excellent Condition NOTES:

**Building Element    Percent Damaged (%)**

**Foundation** \_\_\_\_\_

**Superstructure** \_\_\_\_\_

**Roof Covering** \_\_\_\_\_

**Plumbing** \_\_\_\_\_

**Electrical** \_\_\_\_\_

**Interiors** \_\_\_\_\_

**HVAC** \_\_\_\_\_

**NOTES:**

## **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 base flood elevation.

\_\_\_\_\_ 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: \_\_\_\_\_

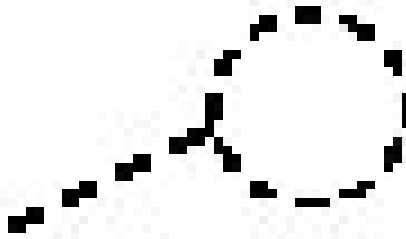
Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

## SAMPLE DOOR HANGERS, LETTERS, FORMS, AND NEWS RELEASES

The following pages include templates for sample door hangers that can be posted on structures, letters that can be sent to property owners, forms, and news releases. All documents below are meant to be templates and can be customized to fit the location and event. All *orange italicized* text should be replaced with the correct information. Community is in reference to a town, city, or county name. Recommend that when writing the date, the month should be spelled out (e.g., 1 February 2024). This will avoid any confusion on order of day and month such as 2/1/2024 or 1/2/2024.

- Page 18: Sample Door Hangers
- Page 20: Sample Letter Notification to Property Owner
- Page 21: Sample Press Release
- Page 22: Sample Substantial Damage Determination Letter
- Page 23: Sample Not Substantially Damaged Determination Letter
- Page 24: Sample Right of Entry Form
- Page 25: Sample Handout for Residents – Cleanup After a Flood
- Page 26: Public Awareness Pieces - Dangers of Floodwaters

Front



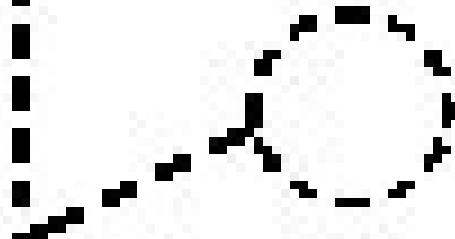
# NOTICE

Because this structure is located in a floodplain and was damaged, a damage assessment must be conducted by the *(city of 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.

**DO NOT START ANY REPAIRS or CLEANUP** prior to contacting the Floodplain Administrator at *(###)###-####*.



# NOTICE

Because this structure is located in a floodplain and was damaged, a damage assessment must be conducted by the *(city of 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.

**DO NOT START ANY REPAIRS or CLEANUP** prior to contacting the Floodplain Administrator at *(###)###-####*.



**HIDDEN DANGERS OF FLOODWATERS**

1 **LIVE ELECTRICAL CABLES**

2 **FAST MOVING CURRENT**

3 **FLOATING MASSES OF FIRE ANTS**

4 **AVOID SWIMMING**

5 **BROKEN DEBRIS**  
(Tree Branches, Glass)

6 **DANGEROUS CHEMICALS**  
(Oil or Petrol)

7 **HARMFUL BACTERIA**  
(Typhoid, E. Coli)

Scan the QR Code to learn how to protect yourself from flood-related hazards

This graphic was developed as part of a collaborative effort by the Utah Silver Jackets Team. To learn more about the Utah Silver Jackets, visit: <https://www.iwr.usace.army.mil/Silver-Jackets/State-Teams/Utah/>

**HIDDEN DANGERS OF FLOODWATERS**

1 **LIVE ELECTRICAL CABLES**

2 **FAST MOVING CURRENT**

3 **FLOATING MASSES OF FIRE ANTS**

4 **AVOID SWIMMING**

5 **BROKEN DEBRIS**  
(Tree Branches, Glass)

6 **DANGEROUS CHEMICALS**  
(Oil or Petrol)

7 **HARMFUL BACTERIA**  
(Typhoid, E. Coli)

Scan the QR Code to learn how to protect yourself from flood-related hazards

This graphic was developed as part of a collaborative effort by the Utah Silver Jackets Team. To learn more about the Utah Silver Jackets, visit: <https://www.iwr.usace.army.mil/Silver-Jackets/State-Teams/Utah/>

## SAMPLE LETTER NOTIFICATION TO PROPERTY OWNER

### *Community Letterhead*

*DATE*

Dear Structure Owner or Occupant:

The bearer of this letter is on official business for *Community* during the hours between 8:00 AM and 5:00 PM, Monday through Friday.

As a result of the flooding that occurred on/between *dates of incident*, *Community* staff will be inspecting buildings throughout the community for evidence of Substantial Damage. This evaluation is required by our Floodplain Management Ordinance # dated *DATE*. These inspections apply to all structures within the 100-year floodplain as shown on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Panels *#s* for *Community* dated DD MMM YYYY.

The inspectors will require approximately 30 minutes for a residential inspection and from 30 to 90 minutes for non-residential buildings to inspect for exterior and interior damage. They will record the required information used by the *Community* Building Department to make Substantial Damage determinations. After *Community* has completed the determination process, a written determination will be mailed to the owners of the inspected structures.

Please be advised that all repairs, reconstruction, and new construction are subject to the provisions of the *Community* Building Code and may require a permit. Construction activities that are undertaken without a proper permit are violations and may result in citations, fines, the removal of the non-compliant construction, or other legal action.

If you refuse admittance to the inspectors, your address will be provided to the *Community* Attorney for processing of a formal legal request to inspect the structure during normal business hours.

Questions regarding the inspection process may be directed to *Name* of the *Community* Building Department at (###) ###-#### between the hours of 8:00 AM and 5:00 PM, Monday through Friday, or emailed to *email address*.

Sincerely,

*Signature Block*

## 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 they are required to obtain 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% 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) at (###)###-#### for more information on repair and reconstruction permits.

## SAMPLE SUBSTANTIAL DAMAGE DETERMINATION LETTER

*Community Letterhead*

*DATE*

*Name(s) of property owner*

*Address*

*Town, UT ZIP-Code*

RE: Substantial Damage Evaluation - *Address*

Dear *Property Owner*,

After the recent flooding event, a damage assessment has been completed on the property referenced above. This is a part of the *Community's* floodplain management responsibilities in order to maintain the availability of flood insurance and disaster assistance to residents. The *Community* Building Department had determined that this structure is located within a mapped Special Flood Hazard Area on the Flood Insurance Rate Map, Panel *XX*, with an effective date of *DATE*.

The following information relates to the address referenced above:

Flood Damage Timeframe:	<i>DATE</i>
Parcel Zone Information:	Zone <i>XX</i>
Total Damages:	<i>\$XX,XXX</i>
Fair Market Value of Damaged Structure:	<i>\$XXX,XXX</i>
Percent Damaged:	<i>XX.X%</i>

As required by our floodplain management ordinance, we have evaluated the proposed repairs and determined that the damage constitutes **Substantial Damage**<sup>1</sup> for the structure and must be brought into compliance with the *Community's* Floodplain Ordinance prior to repair and reoccupation.

We would be pleased to meet with you and your designated representative (architect/builder) to discuss the requirements and potential options for bringing the structure into compliance. This structure may NOT be occupied until corrections are made. Please contact this office at your earliest convenience to make an appointment to discuss your upcoming project, *(###)###-####* or email at *email address*.

Sincerely,

*Signature Block*

---

<sup>1</sup> This determination is based on a comparison of the cost estimate of the proposed cost of repairs to the pre-damage market value of the structure (excluding land value). When the cost of repairs equals or exceeds 50% of the pre-damage market value of the structure, the damage is considered to be Substantial Damage under the requirements of the National Flood Insurance Program and the *Community* Floodplain Management Ordinance #, dated *DATE*.

## SAMPLE NOT SUBSTANTIALLY DAMAGED DETERMINATION LETTER

*Community Letterhead*

*DATE*

*Name(s) of property owner*

*Address*

*Town, UT ZIP-Code*

RE: Substantial Damage Evaluation - *Address*

Dear *Property Owner*,

After the recent flooding event, a damage assessment has been completed on the property referenced above. This is a part of the *Community'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:

Flood Damage Timeframe:	<i>DATE</i>
Parcel Zone Information:	Zone <i>XX</i>
Total Damages:	<i>\$XX,XXX</i>
Fair Market Value of Damaged Structure:	<i>\$XXX,XXX</i>
Percent Damaged:	<i>XX.X%</i>

As required by our floodplain management ordinance, we have evaluated the proposed repairs and determined that this structure is declared **NOT Substantially Damage<sup>2</sup>**.

Please be advised that we may need to make another determination if you elect to perform work other than that described and defined in your current permit application, including additional renovations or upgrades or the building of an addition. Construction activities that are undertaken without a proper permit are violations and may result in citations, fines, the removal of the non-compliant construction, or other legal action.

If you have any additional questions, feel free to call (*###*) *###-####* or email me at *email address*.

Sincerely,

*Signature Block*

---

<sup>2</sup> This determination is based on a comparison of the cost estimate of the proposed cost of repairs to the pre-damage market value of the structure (excluding land value). When the cost of repairs equals or exceeds 50% of the pre-damage market value of the structure, the damage is considered to be Substantial Damage under the requirements of the National Flood Insurance Program and the *Community* Floodplain Management Ordinance #, dated *DATE*.

## 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 flood maps and associated flood risk information adopted by *Community*. 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*, Utah, 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 *Community's* Ordinance/Resolution *Number*.

I, the undersigned, do hereby grant the *Community*, 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*, in said substantial damage/improvement determinations, I, the undersigned, do hereby release and forever discharge the *Community* 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 all requirements of the *Community's* Ordinance/Resolution *Number*.

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



## **Information Regarding Cleanup of Damaged Structures Within the Floodplain**

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

1. You **MUST** have a Substantial Damage Assessment determination and obtain a Floodplain Development Permit from *Community* before you repair, alter, or replace any of the following items:
  - Roof
  - Walls
  - Siding
  - Plaster
  - Cabinets
  - Flooring
  - Electrical systems
  - Plumbing
  - Heating
  - Air conditioning units
  - 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 floodplain development 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 floodplain development 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 SUBSTANTIAL DAMAGE ESTIMATE DETERMINATION AND A FLOODPLAIN DEVELOPMENT PERMIT FROM THE YOUR FLOODPLAIN ADMINISTRATOR.**

*Add Floodplain Administrator Name, Phone Number, and Email*

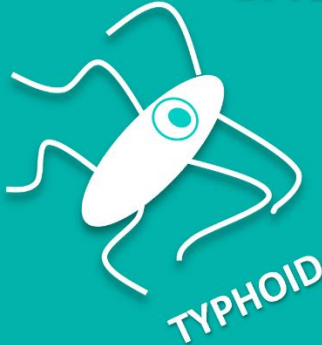
## What Hazards are Hidden in Floodwaters?

BITING

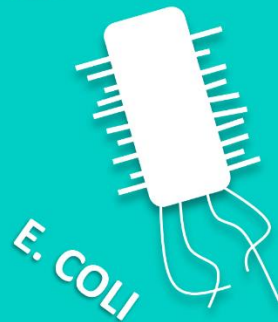


INSECTS

BACTERIA

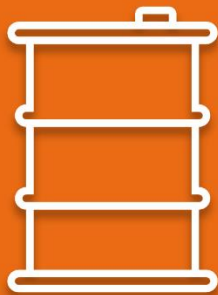


TYPHOID

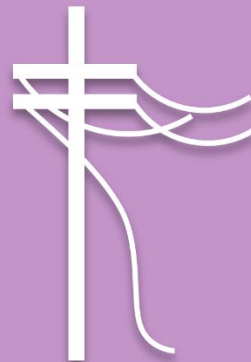


E. COLI

HAZARDOUS MATERIALS & IRRITANTS



DEBRIS & ELECTRIC LINES



# STAY OUT OF FLOODWATERS



*Floodwaters hide dangers that can cause sickness, injury or even death.*



Animals & insects



Dangerous chemicals



Live wires



Sewage



Harmful bacteria



Sharp objects & debris



weather.gov



## Flood Cleanup & the Air in Your Home

**Flood water can make the air in your home unhealthy.**



This is because when things get wet for more than 2 days they usually get moldy. There may also be germs and bugs in your home after a flood.



Portable Generator

**Use portable generators OUTSIDE and far away from the building.**

The exhaust, or fumes, from a portable generator could kill you in minutes if you breathe it in!



**When cleaning wear**

- ✓ An N-95 respirator (Hardware stores usually sell them.)
- ✓ Goggles
- ✓ Gloves
- ✓ Long pants, long-sleeved shirt, and boots or work shoes

**Clean and dry your house and everything in it.**

Clean and dry hard surfaces. Throw away anything that was wet with flood water and can't be cleaned.

