Substantial Improvements / Substantial Damages Toolkit






Prepared for:
Pennsylvania Emergency Management Agency
Emergency Management, Mitigation, Insurance, and Resilient Communities (MIRC) Office
1310 Elmerton Avenue
Harrisburg, Pennsylvania 17110

Prepared by:
PG Environmental and ERG
14555 Avion Parkway, Suite 125
Chantilly, VA 20151

APRIL 2023

Contents

Introduction

Purpose and Intended Audience

Substantial improvement and substantial damage (SI/SD) provisions in a floodplain management ordinance improve resiliency and help communities reduce damages, losses, costs, and time required to recover from flood damage when a disaster occurs. The Federal Emergency Management Agency (FEMA) created the National Flood Insurance Program (NFIP) to decrease risk and damages through flood hazard identification, floodplain management, and flood insurance.

The NFIP helps to break the cycle of disaster damage, reconstruction, and repetitive flooding. Through implementation of the NFIP, SI/SD determinations can be utilized as tools and processes to help Pennsylvania communities increase resilience in response to more frequent and more intense flooding risks, which are projected to increase due to climate change (Sharma et al., 2021). Specifically, SI/SD provisions adopted within local ordinances are designed to bring non-conforming structures into compliance with the NFIP and a locality's floodplain management system.

NFIP at a Glance

- Since 1978, the NFIP has paid ~$75 billion in claims (FEMA: Federal Insurance and Mitigation Administration, n.d.).
- As of February 2023, there were 44,452 active NFIP policies in Pennsylvania.
- Flooding costs the U.S. an average of $4.8 billion per event (NOAA, 2022).
- There are more than 22,600 communities participating in the NFIP across the U.S. and its territories (Benefits.gov, n.d.).

This document will help local officials navigate the process of making SI/SD determinations and develop local plans and administrative procedures required to successfully conduct SI/SD determinations and administer flood management programs.

Document Organization

This toolkit is organized as a stepwise guide for communities making SI/SD determinations. Communities are encouraged to use this document to develop and implement standard procedures when making SI/SD determinations and reducing future costs associated with property damage. The toolkit is designed to be concise, clear, and actionable by localities. It is organized as follows:

Photo source: FEMA. (2020). SDE User Manual and Field Workbook.

- Introduction: provides an overview of the NFIP, key concepts, and key roles for administering SI/SD processes.
- Action Steps: outlines a sequence of actions that should be taken by communities when making SI/SD determinations.

- Hazard Mitigation Projects: describes funding sources that may assist in successfully executing those projects. Links to helpful resources, templates, tools, and attachments with more information, as applicable, are available throughout.

Introduction to NFIP and Key Concepts

Participation in the NFIP requires communities to adopt rules, regulations, and standards that meet or exceed the requirements of the program. FEMA developed SI/SD provisions with the recognition that there were many existing buildings and structures in flood hazard areas prior to the adoption of NFIP policies. **SI/SD provisions adopted within local ordinances are designed to bring non-conforming structures into compliance with the NFIP and a locality's floodplain management plan.**

Requirements for Flood Resistant Design and Construction
Many communities refer to the American Society of Civil Engineers Flood Resistant Design and Construction standards (ASCE 24).

The NFIP defines **substantial damage** as "damage to a structure in a Special Flood Hazard Area–or floodplain–for which the total cost of repairs is 50 percent or more of the structure's market value before the disaster occurred, regardless of the cause of damage" (44 CFR § 59.1). Certain communities have adopted provisions for lower SD percentages. Refer to the applicable local floodplain ordinance for different definitions of SI/SD, remembering that the most stringent regulations apply.

Defining Substantial Damage
Regulating RECONSTRUCTION and REPAIRS to structures that have been severely damaged.

Photo sources, left to right: FEMA. (2019). SDE Module 5; PEMA

Most structure damage occurs in a single, sudden event. However, damage may also result from deterioration associated with age, soil settlement, pests, vandalism, and exposure to the elements. SD can occur from any cause (e.g., flood, fire, earthquake) and applies to structures in a flood hazard area, regardless of the structure's insurance status. If damage to a structure is determined to be "substantial," NFIP regulations require the reconstruction/rehabilitation of that structure to be compliant with the locality's floodplain management plan. The SD determination must be made based on the costs required to restore the structure to pre-damage condition, despite whether an owner elects to perform less than the work necessary to repair the damage completely. Refer to

Appendix A: Key Terms, Appendix B: Introduction to the NFIP and Key Concepts, and Appendix C: Substantial Damages Additional Information and Examples for more information. A general overview of the SD process is depicted in Figure 1.

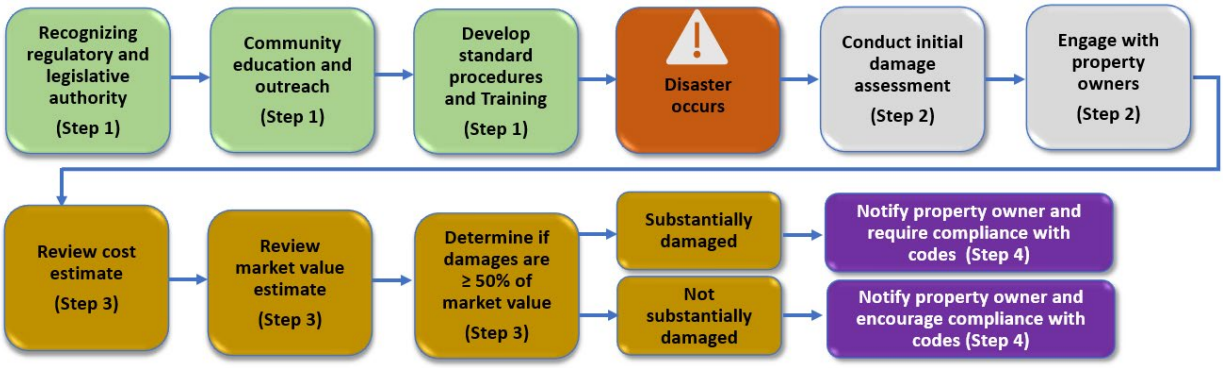


Figure 1. Depiction of Substantial Damage Process. Adapted from the State Floodplain Management Office's *Florida Post-Disaster Toolkit for Floodplain Administrators* (2020).

Substantial improvement is inversely correlated to SD and is defined as "any reconstruction, rehabilitation, addition or other improvement to a structure, the total cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement" (44 CFR § 59.1). SI provisions apply to existing structures where improvements, additions, and alterations are being made. If a proposed project is determined to meet the definition of SI, the structure must become compliant with local floodplain regulations. Repairs to SI are included when SI determinations are made. Note that a disaster does not need to occur or be declared for SI to apply to a structure. Refer to Appendix D: Substantial Improvements and Additional Information for more information. A general overview of the SI process is depicted in Figure 2.

Defining Substantial Improvement
Regulating major ADDITIONS AND IMPROVEMENTS to structures within the floodplain.

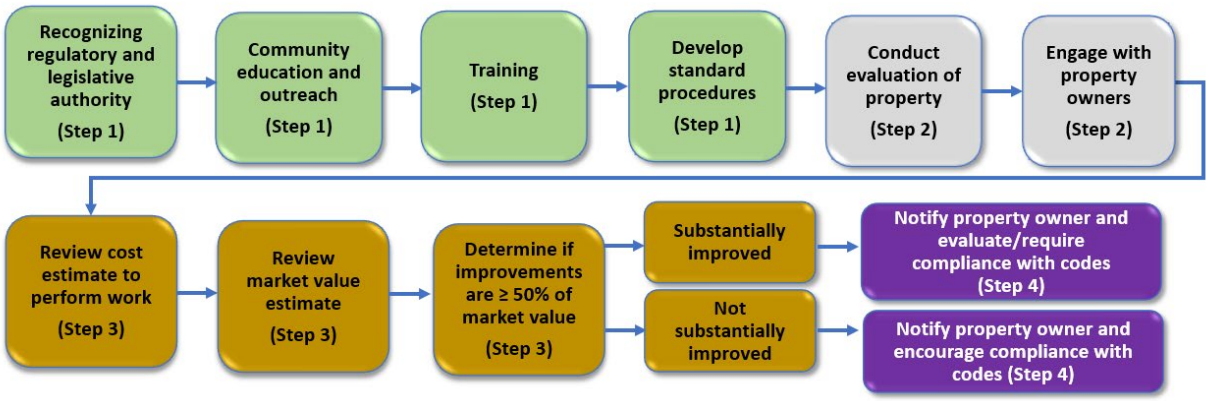


Figure 2. Depiction of Substantial Improvement Process. Adapted from the State Floodplain Management Office's *Florida Post-Disaster Toolkit for Floodplain Administrators* (2020).

Roles and Responsibilities

Timely and effective SI/SD determinations and disaster response depend on collaboration and communication between various partners, including the following (Figure 3).

FEMA. FEMA plays a supervisory role in implementing the NFIP. FEMA's main role is to manage the requirements the NFIP program. The Pennsylvania Emergency Management Agency (PEMA) is regulated by FEMA's Region 3 office, each with a Mitigation Division that oversees the NFIP within their jurisdiction. The Mitigation Division supports the state coordinating agencies, assesses NFIP compliance, advises local officials on enforcing/administering ordinances, and assists design professionals on specific regulations. Additionally, FEMA develops, revises, and adopts **Flood Insurance Rate Maps (FIRMs)**—a critical component of floodplain management and SI/SD determinations. FIRMS are the official local flood maps on which FEMA has identified the special flood hazard area (SFHA), base flood elevation (BFE), and the risk premium zone applicable for the locality.

PEMA. PEMA's role is to facilitate coordination between the federal government and localities within Pennsylvania. PEMA encourages localities to participate in the NFIP program. Once a locality agrees to participate, PEMA helps create, execute, and preserve minimum floodplain management regulation requirements in line with the NFIP and confirms that the local government has the legal authority to enforce these regulation requirements.

Local Governments. Local governments are responsible for implementing the NFIP within their communities, including making SI/SD determinations. There are four major actions local governments take when administering SI/SD requirements:

1. **Ensure upgrades to the property are made according with local codes and regulations.** Local governments that are part of the NFIP require that property owners obtain a permit for developing within SFHAs and ensure the building modifications are conducted in accordance with floodplain management regulations. To ensure construction is in coordination with the permit, the local governments perform periodic construction inspections.
2. **Determine the costs to repair or improve a building in the SFHA**. Local governments work with property owners to identify the costs for repairs or improvements, which will help to make the SI/SD determinations.
3. **Determine the building's market value**. Market value for SI and SD differ. For SI, market value is the estimated worth of the house "before improvements are made." For SD, market value is the estimated worth of the house "before the damage occurred."
4. **Determine whether the repairs/improvements meet the requirements to be considered an SI/SD.** To complete this step, the value of the structure at market value, either before damages or before improvements, is compared to the cost estimates for the proposed repairs or improvements, respectively. Local officials then decide and issue a subsequent letter on official letterhead to the property owner. Local governments should maintain the determination letters on file.

Helpful Resources to Assess Flood Risk

- PA Flood Risk Tool
- Flood Map Service Center

Local governments must retain FIRMS and permit files pertaining to new development and improvements to existing development within the SFHA. The current FIRM is used by design professionals and engineers to ensure they design new development to the current floodplain management regulations. During the permitting process, local officials can help residents obtain flood hazard information, FIRMs, and floodplain related construction regulations and building codes. Local governments also coordinate with insurance companies and property owners to facilitate NFIP insurance claims and Increased Cost of Compliance (ICC) coverage (FEMA, 2010).

Property Owners. Property owners within the SFHA have more responsibilities once the NFIP has been implemented in their locality. Most significantly, improvements or repairs generally greater than 50% of the market value of the property trigger floodplain management requirements. Property owners within the SFHA should check with local officials to determine if repairs or improvements require a floodplain management permit. Property owners provide local officials with information that will allow local governments to make an SI/SD determination, such as cost and scope of work, market value estimations, and others.

Photo source: PEMA.

During construction, for either SI or SD, the property owner must comply with the permit; however, if revisions to approved construction plans are made, they must be communicated to and reviewed by the local officials to ensure the changes do not jeopardize compliance with the floodplain management regulations. Throughout the construction process, inspections must be scheduled, and elevations must be submitted by the property owner. Following construction, the owner must provide as-built plans, which reflect the constructed elevations of key features. Owners must also maintain the specified use of enclosed areas below the elevated building mandated by the permit (FEMA, 2010).

Photo source: PEMA.

Others. Individuals not categorized by the entities listed above are necessary to ensuring that the NIFP and the SI/SD regulations are successful. These individuals may include, but are not limited to, real estate agents, private insurance agents, private insurance adjusters, professional appraisers, and contractors.

- **Private insurance agents** may sell the flood insurance to property owners within a locality that has joined NFIP (FEMA, 2023b).
- **Private insurance adjusters** help guide the policyholder through their NFIP flood insurance policy. They also hold jurisdiction over adjusting the claim to comply with the NFIP, the claims manual, and applicable FEMA regulations. In the case of a flood event, insurance adjusters may assist policy holders in generating cost estimates for repair and collecting information for claims purposes.
- **State-certified appraisers** help to determine the market value of a home. An accurate appraisal of the structure's market value is necessary to make SI/SD determinations.
- **Contractors** implementing the improvements can help property owners with the process by understating the regulations stipulated under the NFIP (FEMA, 2010). Contractors assist with determining an estimate for the improvements or repairs, and their input is important for the SI/SD determination process.

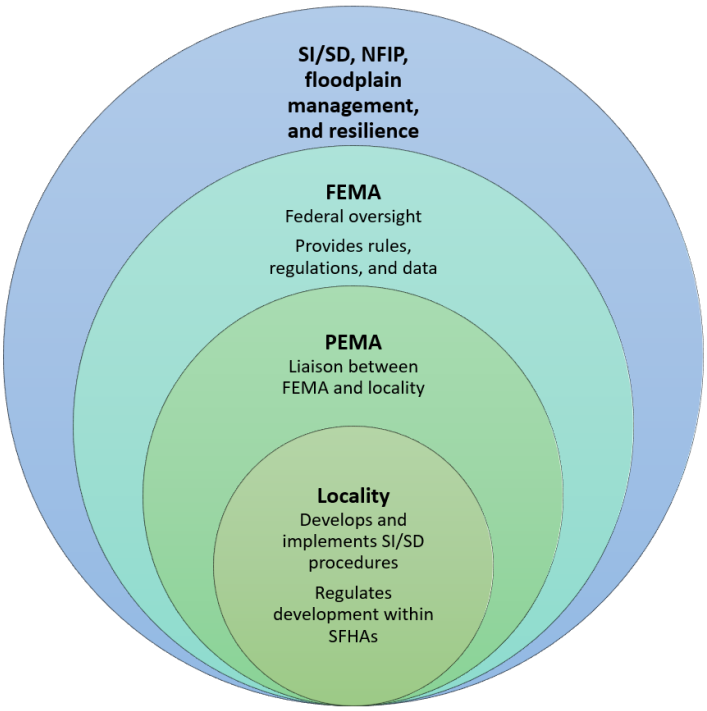


Figure 3. Depiction of Relationship between FEMA, PEMA, the Locality, and SI/SD

Action Steps

The following actions provide guidance for communities when developing and implementing standard processes and approaches regarding SI/SD determinations. If communities have questions regarding implementation of these actions, please contact PEMA's Floodplain Manager by emailing RA-EMFloodplainmgtin@pa.gov.

Photo sources: FEMA (2019). SDE Module 5 and FEMA. (2021). Individual Assistance Program and Policy Guide.

Step 1: Pre-Planning (Pre-Disaster)

Recognize Regulatory and Legislative Authority

NFIP communities are required to adopt provisions to regulate developments within SFHAs and enforce these requirements. Communities may choose to adopt regulations that are more stringent than the federal NFIP provisions. Where this occurs, the most stringent regulations apply. The community's floodplain ordinance provides local governments with the legal authority to implement the NFIP. Communities should review their ordinance to ensure they have the appropriate legal authority to regulate and enforce the NFIP. Refer to Appendix B: Introduction to the NFIP and Key Concepts for additional information.

Gather Data and Evaluate Locality Capacity

Communities should gather data and information prior to a disaster to help assess vulnerabilities to flood damage, particularly for making SD determinations. Gathering data has two main purposes: to identify vulnerabilities to flooding within a local jurisdiction and to aid in estimating the level of effort that may be involved when the local government responds to a disaster.

Types of data to be gathered in support of answering these questions and evaluating flood risk are presented in Table 1. The number of structures in the SFHA can be requested from the county GIS Department. State GIS workgroups may be able to assist with assessing flood risks and reporting high water marks. Licensed drone operators may also collect aerial data (LIDAR) that provides land elevations to identify areas of low elevation, assess flood risk, and determine potential flood damages.

Questions for Floodplain Managers:

1. How many buildings are likely to be damaged in a 100-year flood event?
2. Does the locality have the capacity to perform an initial damage assessment within a few weeks of a disaster?
3. Does the locality have the capacity to conduct in-depth damage assessments and make cost estimates of structures that are substantially damaged?
4. Are staff available to coordinate and provide outreach to property owners regarding rebuilding in accordance with local building codes within the SFHA?

Table 1. Type of Data, Purpose of Information, and Potential Data Sources in Preparation of Disaster Response for SI/SD Determinations.

Type of Data	Purpose of Information	Potential Data Sources
Current FEMA Flood maps	Identify flood zones.	• FIRMs
RL and SRL properties	Evaluate properties with repeated flood damage, indicating the flooding may occur again at these properties.	• PEMA • Local governments
Number of buildings likely to be impacted by flooding	Estimate of damage and loss due to flood events.	• FIRMs • Local governments
Claims data	Understand properties that have been damaged in previous flooding events.	• NFIP data from the ISAA
Flood depth grids	Depict variable flood depts throughout the SFHA to determine the flood extent associated with various flooding scenarios.	• FEMA
Building stock	Age, construction type, and condition of structures affect vulnerability to flooding.	• Local governments- age and condition of structures • Building codes
Hydrologic and soils data	Evaluate potential flood risk based on hydrologic conditions and soils data.	• United States Geologic Survey • Local governments

If an NFIP community does not have current information or data to assess potential flood risk and level of effort for implementing an SI/SD program, the local government may submit an **Information Sharing Access Agreement (ISAA)** application to FEMA. Once the ISAA is complete and approved, FEMA can provide requested NFIP information to communities to make sound decisions. The request must be submitted to and approved by FEMA before the locality can request NFIP data, which is valid for three years from the approval date of the ISAA.

Training Opportunities for Disaster Preparedness and Recovery

- FEMA's National Preparedness website
  - Trainings are tailored to different audiences, including first responders and emergency managers, individuals, and communities.
- Emergency Management Institute's training catalog
  - E0209: State Recovery Planning and Coordination
  - E0210: Recovery from Disaster: The Local Community Role

Community Education and Outreach

If the public, landowners, and local officials and governments are well-educated about the importance of reducing impacts from flooding, they are more likely to be amenable to floodplain regulations and requirements. Consistent and recurring community outreach is critical to build and maintain positive relationships. Local governments, including floodplain managers, local planners and engineers, and building code officers, should provide community education and outreach during the following:

Photo source: FEMA. (2021). Individual Assistance Program and Policy Guide.

- **Pre-disaster event.** Provide outreach to elected officials, property owners, and community managers to raise awareness about the NFIP and the process for conducting SI/SD inspections and determinations.
- **Post-disaster event.** Conduct assessments of damaged structures and begin the process of making SI/SD determinations. The local government should be prepared to interact with property owners, request information on costs of repair, and provide the final determination letter for SI/SD decisions to the property owner.
- **Recovery activities.** Ensure that construction is conducted in accordance with the SI/SD determination and with local building codes, floodplain management ordinances, and other local regulations that may apply.

Templates and example handouts for conducting community education and property owner outreach are presented in Attachment 1.

Develop a SI/SD Determination Process and Standard Procedures/Processes

Local officials who administrator regulations and codes are responsible for making SI/SD determinations for structures. Communities should develop and implement guidelines and standard operating procedures to ensure efficient and standardized approaches for SI/SD determinations and should provide training to staff on implementing these approaches. Communities should also work collaboratively to develop and distribute emergency procedures to

execute after a disaster has occurred, to ensure efficient, effective, and standardized processes for emergency response. Property owners will likely have questions about how and when determinations are made, and local officials should be prepared to answer those questions via standard procedures and processes.

General steps for conducing standard procedures and processes may include:

- Creating a plan based on the number of structures within the floodplain or at risk from a flood event for the appropriate number of teams to conduct initial damage assessments. Consider the number of damaged structures, time per inspection, and the total number of hours needed to complete the damage assessments.
- Developing standard procedures and methods for documenting damages. This may include guidance for taking photographs or thresholds for making quick estimates for damage percentages.
- Developing steps/processes for initiating SI/SD determinations by providing guidance on how to estimate damages, costs, and market value.
- Establishing an appeals process.

Refer to Attachment 2 for SI/SD procedural documents and standard operating procedures. PEMA may be able to provide training and other forms of assistance to communities creating SD/SI procedures. Contact the state NFIP coordinator for more information, and refer to FEMA's *Substantial Improvement/Substantial Damage Desk Reference* for guidance.

Step 2: Conduct Damage Assessment (Post-Disaster)

After a disaster occurs within a community, the local officials will conduct an **initial damage assessment** (i.e., windshield assessment) to evaluate the degree and scale of damage. It is important for communities to conduct these assessments as soon as possible, at least within 72 hours of a disaster occurring, to evaluate the degree of damage and determine building safety. Importantly, initial damage assessments are not the same as preliminary damage assessments, which are typically followed by a windshield assessment and are conducted by FEMA and PEMA. Initial damage assessments may occur before or independently of a preliminary damage assessment.

A damage assessment should generally consist of the following:

Photo source: FEMA. (2019). SDE Module 5.

1. Tour the flooded/damaged portions of the SFHA and identify structures damaged or lost due to flood event.
2. Identify and document initial damage based on the conditions, such as high-water marks in areas of flooding and roof damage from high wind events. In the case of flooding, localities should aim to understand how far the water got into structures, how deep the water was, and how long the water remained within the structures.
    - Based on the extent of the disaster, local officials may want to conduct a **representative structure evaluation** to assess the relative extent of the damages caused within the area. Local governments should generally understand the number of structures damaged and percent of damaged sustained for each structure.
    - Local officials should evaluate if damages occur between the following intervals: 0%, 40-60%, and 60–100%. Local officials should then prioritize evaluation of structures that are categorized as 40-60% damaged. Refer to Attachment 3 for additional information regarding the methodology for 40-60% damaged structures.
3. Document the location of damaged structures by:
    - Taking videos and photographs in accordance with procedures presented in Attachment 4.
    - Identifying building locations on a map.
4. Complete SI/SD checklists, as applicable. Example checklists are presented in Attachment 4.

Documenting High Water Marks
High water marks should be documented as soon as floodwater recedes. A quick response helps ensure that water levels will not be obscured by cleanup or subsequent precipitation. The immediate benefits of recording high water marks include:

- Identifying the most severely affected areas to facilitate relief appropriately
- Requesting a disaster declaration
- Evaluating the extent of damage
- Making the initial substantial damage determination

Documenting high water marks may also help to evaluate the accuracy of floodplain maps and can be used to create more accurate maps during flood map revisions.

More information is available here: High-Water Marks and Flooding.


Photo sources, left to right: FEMA. (2018). Answers to Questions about SI/SD Buildings; PEMA

FEMA's Substantial Damage Estimator (SDE) Tool can be used by NFIP communities to evaluate whether properties within the SFHA are substantially damaged after a disaster event. The tool provides a method for collecting data and enables users to add photos, coordinates, and other pertinent information regarding damaged structures. The SDE tool makes initial determinations based on initial construction quality, the depreciation rating of the structure prior to the damage, and the percent damaged to a set of standard construction elements for both residential and non-residential structures.

Photo source: FEMA. (2021). SDE Tool.

The SDE tool is not required; however, it can be useful for communities trying to build a database of damaged structures for each flood event because it allows them to manage data pertaining to the event that most recently occurred and provides a method for adding information for future events. By using the SDE tool, communities can inform structure owners of SD determinations based on the data gathered in the database by means of a one-page summary or a five-page detailed report. The

tool may also be used to develop a replacement cost value to help inform an estimated market value.

It is advantageous to help property owners obtain financial assistance to meet the additional costs of complying with floodplain regulations and codes. Based on the type of disaster declaration, various sources of funding may become available, such as those listed in Table 2.

Refer to Appendix F: Emergency Declarations and Disaster Response for additional information on damage assessments

Table 2. Potential Sources of Financial Assistance for Property Owners

Funding Source	Brief Description
Individuals and Households (IHP) Program	Provides federal awards to individuals, households, states, local governments, tribes, and territories to support individual disaster survivors after a presidentially declared disaster.
Public Assistance (PA) Program	Provides federal assistance to support communities' recovery from major disasters by providing them with grant assistance for debris removal and life-saving emergency protective measures and for restoring public infrastructure after a presidentially declared disaster.
Hazard Mitigation Grant Program (HMGP)	Helps communities implement hazard mitigation measures after a major disaster declaration to reduce the risk of loss of life and property from future disasters.
Small Business Administration Disaster Loan Assistance	Provides low-interest disaster loans to property owners to assist with physical and economic recovery after declared disasters.
Increased Cost of Compliance Coverage	One of several resources for flood insurance policyholders who need additional help rebuilding after a flood. ICC can provide up to $30,000 to help cover the cost of mitigation measures that will reduce flood risk. Refer to Appendix E. Increased Cost of Compliance (ICC) Coverage for additional information.

Disaster Recovery Reform Act (DRRA) Section 1206

A policy enacted by FEMA to provide communities with resources to effectively administer and enforce state and local building codes and floodplain management ordinances for a period of up to 180 days after the date of a major disaster declaration.

Communities looking to receive this assistance must submit applications for reimbursement and required associated documentation.

Engaging with Property Owners

Local officials that are conducting the damage assessments should be transparent with property owners and share information using various forms of media (Table 3). Depending on the level of damage, homeowners may be distraught and have questions about the process for conducting damage assessments and when help will be available for them.

Table 3. Methods for Disseminating Information to Property Owners

Communication Methods for Local Officials	
	Social media posts
	Local emergency notification networks
	Posting flyers around the community
	Press releases
	Cable TV
	Door hangers
	Information letters
Keep things simple for property owners and ensure that Floodplain Development Application Forms are handy. Refer to Attachment 1 for outreach templates and forms.	

Communication with property owners takes place throughout disaster recovery and may include answering questions from home and business owners regarding the process. The local government needs to advise property owners to inspect damaged buildings to evaluate damages. Local officials work with property owners to begin the trash/debris cleanup process and to stabilize their buildings (if necessary) so that they are safe to re-enter. Local officials should also inform property owners that they will be unable to begin major construction/repair that requires a permit until they are able to attain one. It is important that local officials communicate with property owners about having their buildings inspected prior to the initiation of repair work. It is also imperative that local officials delineate which activities will require a permit and which do not. A homeowner handout template is provided in Attachment 1.

Photo source: FEMA. (2021). Individual Assistance Program and Policy Guide.

Step 3. Make SD/SI Determinations

The locality's Floodplain Administrator or Local Building Official is responsible for making the SI/SD determination based on the comparison of cost estimates and market value of the structures.

FEMA and New Hampshire Office of Strategic Initiatives Trainings on Making SI/SD Determinations

- Resilience Through Compliance: FEMA's Post-Disaster Substantial Damage Initiatives
- SDE Module 2—Substantial Damage Basics
- An Introduction to Substantial Improvements and Substantial Damage
- Making Substantial Damage Determinations
- Making Substantial Improvement Determinations

Review Cost Estimates

To determine the costs of all work necessary when making improvements (in the case of SI) or to restore a building to pre-damage condition (in the case of SD), local officials will need to obtain information from property owners. The cost estimate should reflect the costs associated with material, labor, and anything else associated with completing the improvement or repair. The determination must also include the costs necessary to bring the building or structure in question into compliance with all relevant building code requirements and regulations. The information that must be included in coast lists cannot be exhaustively detailed here; however, the following list characterizes the types of costs that must be included:

- Materials and labor
- Site preparation,
- Demolition and debris removal,
- Structural elements and exterior finishes (foundations, bearing and non-bearing walls, joists, ceilings, and framing),
- Interior finishes (cabinetry, flooring, wall finishes, hardware, and insulation), and

Photo source: FEMA. (2010). SI SD Desk Reference.

- Utility and service equipment (electrical wiring, plumbing, heating and cooling, ventilation, and built-in appliances).

Refer to Appendix G: Cost Estimations for additional information regarding allowable and unallowable costs.

Comprehension Check when Reviewing Cost Estimates

- ✓ Is the cost estimate reasonable?
- ✓ Does the cost estimate accurately reflect the proposed work, including requirements to repair/restore buildings to pre-damage conditions?

Review Market Value

To make SI/SD determinations, a structure's market value must be assessed by local officials. **Market value refers to the price that a seller can expect to receive from a buyer in a fair and open negotiation.** The NFIP does not define market value; rather, it is interpreted as the price at which a seller is willing accept, and a buyer is willing to pay. Localized definitions of market value may be found in zoning codes, property taxation codes, and real estate transactions.

The market value must be based on the condition of the structure prior to the improvement or before damage has occurred. Generally, property value assessments are determined by the state, local taxing or assessment authority, or those who have access to historic land and tax documents. There are four primary methods for determining market value:

- **Independent appraisal** prepared by a qualified and licensed professional.
- **Adjusted assessed value**, as determined by the state or local tax assessor.
- **Actual cash value** estimates, including depreciation.
- Additional **qualified estimates** such as values from NFIP claims data or best professional judgement by staff in the Tax Assessor's and Building Department's offices.

Refer to Appendix H: Determining Market Value for additional information about market value estimates.

Compare Costs and Market Value

After evaluating if the cost and market value estimates are reasonable, local officials compare the prices to evaluate if the proposed work meets the definition of SD/SI. Figures 4 and 5 depict a simplistic formula for SD and SI determinations, respectively.

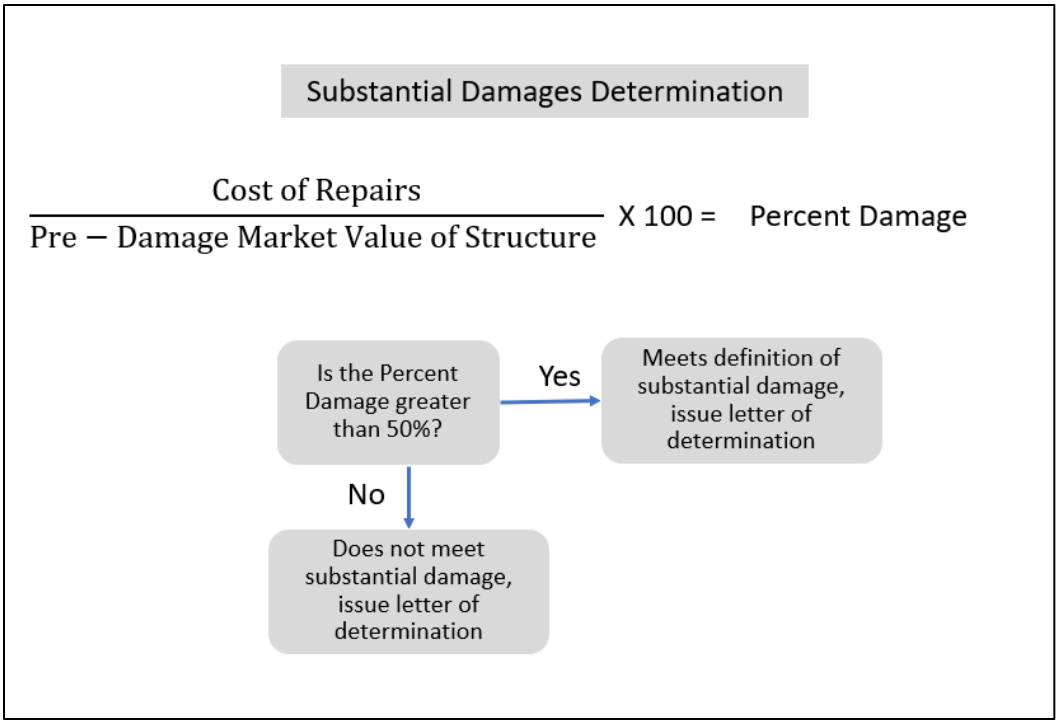


Figure 4. General Formula for making SD Determinations.

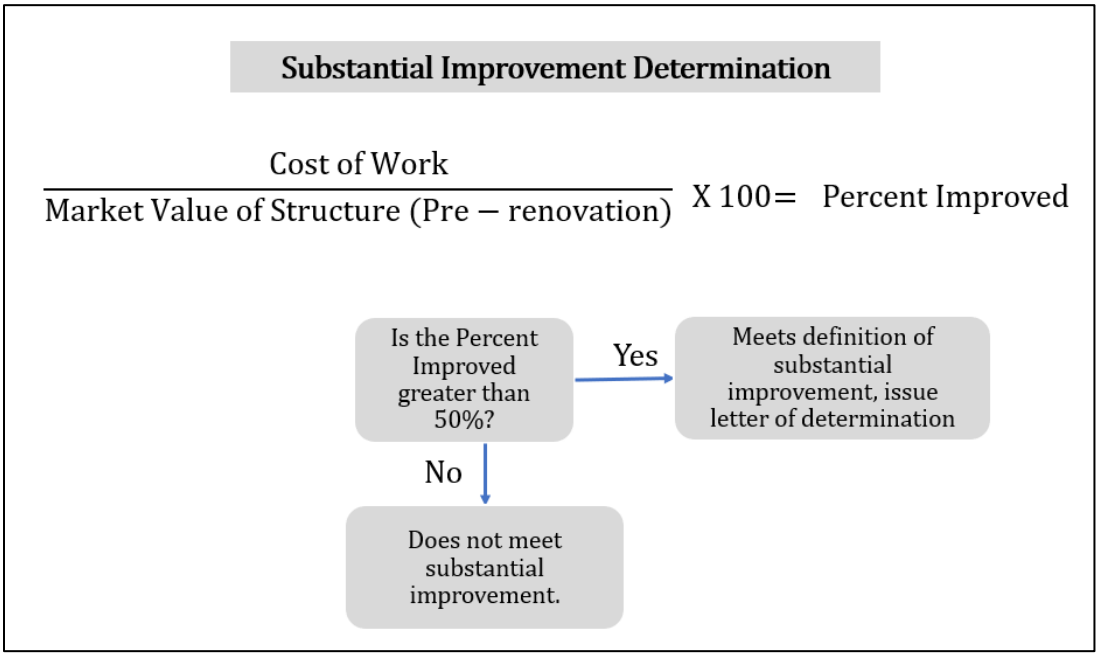


Figure 5. General Formula for making SI Determinations.

Step 4. Issue Determination Letter and Work with Property Owner

After conducting an evaluation to determine if the modifications to the structure meet the definition of SD/SI, the local official issues a formal letter with this determination to the property owner, including a reminder that they need to adhere to all required building codes and obtain permits prior to making repairs. Local officials should issue final determination letters on municipal letterhead and maintain these documents in perpetuity. Following the issuance of the letters, local officials must be prepared to answer property owners' questions about bringing their buildings into NFIP compliance and how they can appeal determinations made regarding SD. Templates for issuing determination letters to property owners are provided in Attachment 5.

Remember!
Property owners should be reminded that permits are required prior to making repairs to their structures.

Local governments may waive permit fees but not requirements.

Localities should also develop standard inspection, documentation, and enforcement procedures to ensure that affected structures are rebuilt in a manner that complies with NFIP provisions and floodplain management regulations.

Appeals Process

Homeowners may be disappointed with the SI/SD determination and want to appeal the determination. Local governments should develop and implement community education and outreach processes and standardized procedures for collecting data and making SI/SD determinations. In doing so, local governments can increase the transparency of the decision-making approach and reduce the likelihood of appeals. Additionally, local governments are encouraged to develop an appeals process that is congruent with the community floodplain ordinance to handle disagreements in determinations made by property owners.

Property owners may submit an appeal under the following conditions:

- Perceived errors in valuation of costs for repairs/improvements,
- Methodology to determine market value of the property,
- Inclusion or exclusion of repair/improvement costs, and
- Utilization of insufficient information.

Depending on the reason for the appeal, the locality will need to review the original estimates of the percent damage, review evidence for amending the estimate provided by the property owner, and determine the final estimate of damages. To conduct these steps, the homeowner must provide the

local official with a professional appraisal or estimated improvement/repair costs from a state-licensed and qualified professional, engineer, contractor, or insurance agent, regarding the discrepancy (FEMA, n.d.). The property owner is responsible for covering the cost of the professional valuation. Depending on the result of the valuation, the information will be presented to a local government board designated to hear these cases (FEMA, 2010). If the board determines the original determination was correct, the property owner must make the improvements/repairs to meet floodplain regulations. If the initial determination was incorrect, the property owner will be encouraged, but not required, to make the repairs to meet floodplain regulations.

Planning Ahead
FEMA estimates that every $1 spent on mitigation saves up to $7 on future disaster losses. Learn more from the **2019 Natural Hazard Mitigation Saves Report**.

Hazard Mitigation Projects

FEMA defines hazard mitigation as "any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards, like flooding" (2023c). Therefore, mitigation projects help to increase resilience and reduce potential damages to property owners and communities.

Did You Know?
PEMA has administered over 3,000 acquisition projects to remove structures from the floodplain.

Examples of mitigation projects are included in Figure 6 and those listed below, including:

- **Acquisition and Demolition.** The goal of an acquisition and demolition project is to permanently remove homes, structures, buildings, and impervious surfaces from the floodplain and restore natural floodplain function, which improves public health and safety by minimizing potential loss of life and property and reduces future flooding impacts. Communities apply for FEMA funding through PEMA to purchase damaged properties from flooding. After the local government has acquired the property, a permanent title is placed on the property that restricts land use and development of the property. Acquisition projects are particularly effective at mitigating risk because residents and entire structures are removed from the floodplain. Through floodplain restoration, flooding risk is removed for homeowners, communities, and first responders in the event of an emergency.
- **Relocation.** The goal of a relocation project is to physically move a structure from flood-prone areas to another location outside of the 100-year floodplain and outside of regulatory erosion zones to prevent future loss of life and property.
- **Mitigation Reconstruction.** Mitigation reconstruction projects involve constructing an improved, elevated building on the same site where an existing building or foundation had been partially damaged or completely lost due to a flood event. These activities include either partial or total demolition of the remaining structure

Figure 6. Examples of Mitigation Projects. *Graphic source: FEMA. (2020). Increased Cost of Compliance Coverage.*

and the construction of hazard-resistant and code-compliant structures on elevated foundations.

- **Elevation and Floodproofing**. The goal of elevation and floodproofing projects (Figure 7) is to reduce potential flooding damage by taking methods such as:
    - Retrofitting structures to raise the floor level above the BFE
    - Basement infill
    - Abandoning the lowest level floor
    - Building with materials that are resistant to flood damage, including non-paper-faced gypsum board and terrazzo style flooding.

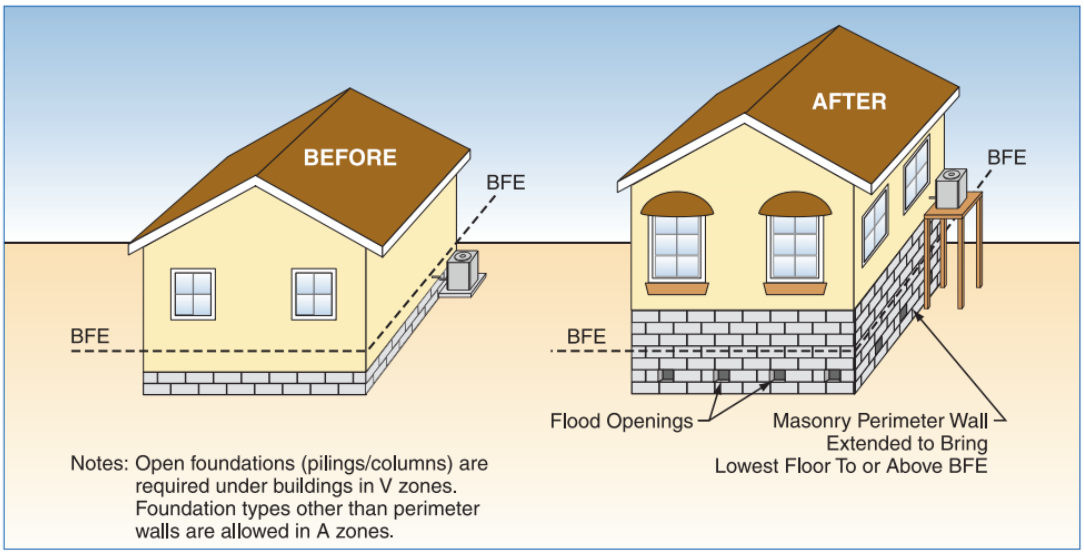


Figure 7. Depiction of Elevation and Floodproofing as part of Substantial Improvements.
Graphic source: FEMA. (2010). SI SD Desk Reference.

Communities can apply for funding from FEMA through PEMA and provide grants to eligible projects/property owners to conduct elevation and floodproofing activities. Refer to Appendix I: Additional Funding Information.

Helpful Resources

- Substantial Improvement/Substantial Damage Desk Reference
- FEMA Substantial Damage Estimator Video Modules
- FEMA Substantial Damage Estimator Software, Workbooks, and Forms
- Answers to Questions About Substantially Improved/Substantially Damaged Buildings
- IS-284: Using the Substantial Damage Estimator 3.0 Tool
- IS-285: Substantial Damage Estimation for Floodplain Administrators
- PA Flood Risk Tool
- Flood Map Service Center
- High-Water Marks and Flooding
- Disaster Recovery Reform Act (DRRA) Section 1206
- 2019 Natural Hazard Mitigation Saves Report

References

Benefits.gov, (n.d.). *National Flood Insurance Program (NFIP)?* *https://www.benefits.gov/benefit/435*

Department of Homeland Security (DHS), (n.d.). *FEMA Flood Map Service Center: Welcome!* https://msc.fema.gov/portal/home

FEMA, 1997. *National Flood Insurance Act of 1968 – FEMA.* https://www.fema.gov/sites/default/files/2020-07/national-flood-insurance-act-1968.pdf

FEMA, 2005. *National Flood Insurance Program (NFIP) Floodplain Management Requirements: A Study Guide and Desk Reference for Local Officials.* https://www.fema.gov/sites/default/files/documents/fema-480_floodplain-management-study-guide_local-officials.pdf

FEMA, 2010. *Substantial Improvement/Substantial Damage Desk Reference*. FEMA P-758. Washington, DC. May 2010

FEMA, 2012. *National Flood Insurance Program: The Benefits of Flood Insurance Versus Disaster Assistance. https://insurance.ky.gov/ppc/Documents/NFIP3.pdf*

FEMA, 2014. *Variances and the National Flood Insurance Program*. https://www.fema.gov/sites/default/files/2020-08/FEMA_P-993_FPM-Bulletin_Variance.pdf

FEMA, 2018. *Answers to Questions About Substantially Improved/Substantially Damaged Buildings*. https://www.fema.gov/sites/default/files/2020-07/fema_p213_08232018.pdf

FEMA, 2021. *Disaster Assistance vs. Flood Insurance: Do You Know the Difference?* https://community.fema.gov/PreparednessConnect/s/article/Disaster-Assistance-vs-Flood-Insurance-Do-You-Know-the-Difference#:~:text=Flood%20insurance%20does%20not%20require,immediately%20after%20any%20flood%20event.v

FEMA, 2021. *National Flood Insurance Program Claims Manual.* https://www.fema.gov/sites/default/files/documents/fema_nfip_claims-manual_2021.pdf

FEMA, 2022. *Letters of Map Revision and Conditional Letters of Map Revision.* https://www.fema.gov/flood-maps/change-your-flood-zone/lomr-clomr

FEMA, 2023a. *Community Rating System.* https://www.fema.gov/floodplain-management/community-rating-system#discounts

FEMA, 2023b. *For Real Estate, Lending & Insurance Professionals*. https://www.fema.gov/flood-maps/products-tools/know-your-risk/realtor-insurance-lenders

FEMA, 2023c. *Hazard Mitigation Assistance Grants*. https://www.fema.gov/grants/mitigation

FEMA, (n.d.) *What impacts flood insurance policy costs?* National Flood Insurance Program (NFIP). https://www.floodsmart.gov/what-impacts-my-premium-and-policy-costs

FEMA: Federal Insurance and Mitigation Administration, (n.d.). *National Flood Insurance Program Fact Sheet.* https://www.fema.gov/sites/default/files/2020-07/fema_NFIP_National-Flood-Insurance-Program-Fact-Sheet_May-2016.pdf

National Oceanic and Atmospheric Administration (NOAA), 2022*. Billion-Dollar Disasters: Calculating the Coasts: 7 things to know about NCEI's U.S. Billion-Dollar Disasters Data.* https://www.ncei.noaa.gov/access/monitoring/dyk/billions-calculations#:~:text=Drought%2C%20with%20an%20average%20cost%20of%20%2410.9%20billion%20per%20event&text=Wildfires%2C%20with%20an%20average%20cost%20of%20%246.3%20billion%20per%20event&text=Flooding%2C%20with%20an%20average%20cost%20of%20%244.8%20billion%20per%20event

Pennsylvania Department of Environmental Protection, 2021. Act 167 Stormwater Management Frequently Asked Questions. https://www.dep.pa.gov/Business/Water/CleanWater/StormwaterMgmt/Pages/Act-167.aspx

Pennsylvania Emergency Management Agency (PEMA), (n.d.). National Flood Insurance Program. https://www.pema.pa.gov/Floodplain-Management/Pages/NFIP.aspx

Pennsylvania Governor's Center for Local Government Services (GCLGS), 2010. Floodplain Management Regulations. https://www.fema.gov/sites/default/files/2020-07/fema_p213_08232018.pdf

Sharma, S. et al., 2021. Regional Flood Risk Projections Under Climate Change. American Meteorological Society. *Journal of Hydrometeorology, 22*(9). https://doi.org/10.1175/JHM-D-20-0238.1

Appendix A: Key Terms

- **Base Flood**: A flood which has a one percent chance of occurring in any given year. The base flood is the national standard used by the NFIP and all federal agencies for the purposes of requiring the purchase of flood insurance and regulating new development.

- **Base Flood Elevation (BFE)**: The elevation of surface water resulting from a flood that has a one percent chance of equaling or exceeding that level in any given year. BFE is determined by FEMA and shown on FEMA's FIRM. The computed elevation to which floodwater is anticipated to rise during a base flood event.

- **Building Codes**: A set of rules and regulations that specify the standard of constructed objects. In Special Flood Hazard Areas, building codes are enforced to promote the resiliency of structures by meeting the minimum requirements outlined in the NFIP. Pennsylvania building codes are defined in the state's Uniform Construction Code (refer to municipality for more localized regulations) (Pennsylvania Department of Community and Economic Development, 2016).

- **Enclosed Area**: A walled-in space below the lowest floor of an elevated building and below the BFE (FEMA.gov, 2022).

- **Floodproofing**: Any combination of structural and non-structural additions, changes, or adjustments to structures which reduce or eliminate flood damage to real estate or improved real property, water and sanitary facilities, structures, and their contents (FEMA.gov, 2020).

- **Flood Insurance Rate Maps (FIRMs)**: Official map of a community on which FEMA has delineated the Special Flood Hazard Areas, BFEs, and the risk premium zones applicable to the community (FEMA.gov, 2020).

- **Freeboard**: An additional amount of height above the BFE used as a factor of safety (e.g., two feet above the Base Flood) in determining the level at which a structure's lowest floor must be elevated or floodproofed to be in accordance with state or community floodplain management regulations (FEMA.gov, 2020).

- **Increased Cost of Compliance (ICC) coverage**: One of several resources for flood insurance policyholders who need additional help rebuilding after a flood. ICC can provide up to $30,000 to help cover the cost of mitigation measures that will reduce flood risk. In order to be eligible for ICC coverage, a building must meet one of two criteria:
    - Determined to be "substantially damaged"
    - Determined to be a "repetitive loss structure" (FEMA.gov, 2022).

- **Individual Assistance Program**: FEMA's Individuals and Households Program (IHP) provides financial and direct services to eligible individuals and households affected by a disaster, who have uninsured or underinsured necessary expenses and serious needs (FEMA.gov, 2022).

- **Lowest Floor**: The lowest floor of the lowest enclosed area (including basement) (FEMA.gov, 2020).

- **New Construction**: Buildings for which the "start of construction" commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, including any subsequent improvements (FEMA.gov, 2020).
    - *For Floodplain Management Purposes*: Structures for which the start of construction commenced on or after the effective date of a floodplain management regulation adopted by a community and includes any subsequent improvements to such structures.
    - *For Determining Insurance Rates*: Structures for which the start of construction commenced on or after the effective date of an initial FIRM or after December 31, 1974, whichever is later, and includes any subsequent improvements to such structures. Flood insurance rates for new construction are based on the elevation of the lowest floor (including basement) in relation to the BFE.

- **Public Assistance Program**: Provides funds to assist communities responding to and recovering from major disasters or emergencies declared by the President. The program provides funding for emergency assistance to save lives and protect property and assists with funding for permanently restoring community infrastructure affected by a federally-declared incident (FEMA, 2019).

- **Rehabilitation**: An improvement made to an existing structure which does not affect the external dimensions of the structure.

- **Repetitive Loss (RL) Property**: A RL property is any insurable building for which two or more claims of more than $1,000 were paid by the NFIP within any rolling ten-year period, since 1978 (FEMA.gov, 2020).

- **Special Flood Hazard Area (SFHA)**: An area with a special flood or mudflow, and/or flood related erosion hazard, as shown on a flood hazard boundary map or flood insurance rate map, as identified by FEMA (FEMA.gov, 2020). The SFHA is shown as the base floodplain and is designated as Zone A, AE, A1-30, AO, AH, V, VE or V1-30 depending on the flood data available and the age of the flood map. The SFHA is the area where the NFIP's floodplain management regulations must be enforced by the community and the area where the mandatory flood insurance purchase requirements apply.

- **Severe Repetitive Loss (SRL) Property**: Any building that has incurred flood damage for which:
    - Four or more separate claim payments have been made under a Standard Flood Insurance Policy issued pursuant to this title, with the amount of each such claim exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or
    - At least two separate claims payments have been made under a Standard Flood Insurance Policy, with the cumulative amount of such claim payments exceed the fair market value of the insured building on the day before each loss (FEMA.gov, 2020).

- **Substantial Damage**: Applies to a structure in a SFHA for which the total cost of repairs is 50 percent or more of the structure's market value before the disaster occurred, regardless

of the cause of damage. This percentage rule can vary among jurisdictions (44 C.F.R. § 59.1 2013).

- **Substantial Improvement**: Any reconstruction, rehabilitation, addition or other improvement to a structure, the total cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement (44 C.F.R. § 59.1 2013).

Appendix B: Introduction to the National Flood Insurance Program and Key Concepts

National Flood Insurance Act of 1968

The National Flood Insurance Act of 1968 created the National Flood Insurance Program (NFIP). As a result of flood disasters creating personal and economic hardships, congress determined the NFIP necessary to preventative flood measures and to reduce the resource burden on taxpayers for repairing flood-related damages. By passing the National Flood Insurance Act of 1968, and subsequently the NFIP, Congress created programs to minimize future losses and provide insurance for property owners to recover from flood damage (Federal Emergency Management Agency (FEMA),1997).

The NFIP works to identify flood risks in communities and install better floodplain management approaches to prevent or mitigate damage from future flooding events. Using floodplain mapping to create Flood Insurance Rate Maps (FIRMs), FEMA helps communities to identify areas that pose a high risk of flooding. FIRMs depict Special Flood Hazard Areas (SFHAs), which is the floodplain regulated by the community. A SFHA is a location that is within the one percent annual chance floodplain and has a one in 100 chance of flooding every year. To qualify for flood insurance, new buildings must be constructed to comply with the NFIP requirements while existing structures may need to be retrofitted or renovated to meet NFIP requirements and codes after the initial construction of the structure.

Pennsylvania Floodplain Management Act of 1978

The Pennsylvania Floodplain Management Act requires all flood-prone municipalities to enroll in the NFIP and meet associated minimum flood protection requirements. The act also requires the community to comply with additional state floodplain management requirements in addition to the federal floodplain management requirements. The Commonwealth's floodplain management requirements may be stricter than the federal standards. For example, at the federal level, main structures need must be built so that the lowest floor is to or above the 100-year flood line. State-specific flood precautions when building jails, hospitals, nursing homes, etc. require these buildings to be built at least a foot and a half higher than the 100-year flood level (Pennsylvania Governor's Center for Local Government Agencies, 2011).

Pennsylvania Stormwater Management Act of 1978

The Pennsylvania Stormwater Management Act of 1978 was created to reduce the impact of stormwater runoff from new land developments (Pennsylvania Department of Environmental Protection, 2021). Counties must have a stormwater management plan (SWMP) for each watershed within their county. The management plan must be approved by the Department of Environmental Protection (DEP). Once approved, the SWMP will need to be reviewed every five years. Implementing an SWMP helps to reduce local flooding issues within the counties and assists with mitigating future flooding created by new developments.

Purpose and Overview of the NFIP

Did You Know?
The NFIP covers approximately five million policyholders in more than 22,000 participating communities nationwide.

The NFIP is a federal program in which communities can voluntarily participate and property owners can purchase insurance protection against damage caused by flooding. The NFIP is based on an agreement between the federal government and the community in which the federal government agrees to provide flood insurance if communities regulate development within their regulated floodplains. Communities that participate in the NFIP provide their residents with an opportunity to purchase federal flood insurance through a licensed insurance agent. The goal of providing federally-backed insurance is to allow property owners to financially recover faster from flood damage through insurance in comparison to disaster relief loans.

The three main components of the NFIP are mapping, insurance, and regulations.

- **Mapping:** FEMA publishes Flood Insurance Rate Maps which depict the anticipated flood risk for properties.
- **Insurance:** Each structure within a community participating in the NFIP may be covered by a flood insurance policy, even those outside the regulated floodplain.
- **Regulations:** NFIP only underwrites flood insurance coverage for communities that adopt and enforce regulations at least consistent with NFIP. Floodplain regulations are usually found in one of the following: zoning ordinances, building codes, subdivision regulations, sanitary regulations, or standalone ordinances.

Many disaster relief assistance plans do not include flood protection so property owners, renters, and businesses must procure this protection elsewhere (Benefits.gov, n.d.). Flood insurance provides the insured with protection even when a disaster is not declared by the president, unlike coverage under disaster relief assistance. Protection under the NFIP does not require payback after a flood and ensures that the policy will not be canceled or non-renewed after repeat losses. The average cost of a flood insurance policy is $766 annually (for FY 2023) and costs are reduced as flood hazard decreases, when compared to the amount of reimbursement. For residential occupancies flood insurance covers up to $250,000 for building losses and $100,000 for content coverage. For businesses these values increase to $500,000 for both building losses and content coverage (FEMA, 2012).

NFIP Minimum Requirements

Communities participating in NFIP must comply with the regulations at 44 CFR Parts 59 and 60. NFIP communities must adopt floodplain management regulations/ordinances that meet or exceed the minimum requirements of the NFIP. The ordinances are meant to regulate development within the floodplain to reduce loss of life and property and protect against flooding. The ordinance should at least include the following provisions:

- A defined purpose, including why the ordinance was adopted and its primary objectives.
- Technical definitions, such as “development,” “building,” “base flood elevation,” etc. so that the regulations can be clearly understood by localities.
- An adoption/collection of pre-existing flood data, such as flood maps, profiles, and other regulatory flood data.

- A development permit process, to require that development within the floodplain be covered by a permit and be inspected to ensure it complies with NFIP requirements and more strangely floodplain management regulations, as applicable.
- Construction standards, including:
    - Building protection standards (e.g., elevation, floodproofing, anchoring)
    - Mobile and manufactured home standards
    - Construction standards for each community flood zone (i.e., V, AO, AH, and A99)
    - Construction in the floodway and standards for structures in areas where floodways are not mapped
    - Standards for subdivisions
    - Standards for water and sewer services
    - Standards for water course alterations, including rivers, streams, and drainageways
- A designated administrator who is responsible for administering the ordinance, potentially listing the designated person's duties.
- A standardized appeals process, which must provide community members methods for appealing or requesting a variance if they feel that the development standards are too restrictive. The appeals process should be executed by a third party rather than the designated administrator.
- Enforcement procedures outlining penalties for violations, such as fines and orders to correct violations of floodplain management ordinances or standards.
- Abrogation and greater restriction, or similar provisions outlining that the ordinance takes precedence over less restrictive requirements.
- Severability, i.e., the individual provisions of the ordinance can be separated and if any are ruled invalid, it doesn't affect the other provisions.

In addition to adopting ordinances that are consistent with the NFIP, communities are also responsible for enforcing the ordinance and standards (FEMA, 2005). Communities should develop standard enforcement response procedures to ensure noncompliant structures align with floodplain management regulations and related ordinances, standards, and codes.

State Model Floodplain Ordinance Provisions

Pennsylvania has developed the Pennsylvania Floodplain Management Ordinance to help municipalities meet the minimum requirements of the NFIP and the Pennsylvania Floodplain Management Act (1978-166). The model ordinance is meant to be a toolkit or framework for municipalities to use and customize during the development of their own floodplain management ordinance. Each community should modify their ordinance based on their unique floodplain hazards population, policies, and goals.

Benefits of NFIP

There are several benefits that NFIP provides to participating communities, including:

- Reducing negative impacts to communities from flooding.
- Reducing premium for flood insurance.
- Improving resilience and improving flood management approaches.

The NFIP is complimentary to FEMA's voluntary Community Rating System (CRS) program. Depending on the actions of the community, additional flood insurance cost savings may be available through CRS. Current or prospective CRS program participants can join CRS User Groups—ad-hoc groups that facilitate regional collaboration and networking to help increase preparedness for flooding events. For example, CRS User Groups may discuss adaptation strategies for worsening flooding impacts and risks.

The Three CRS Goals:

1. Reduce and avoid flood damage to insurable property.
2. Strengthen and support the insurance aspects of the NFIP.
3. Foster comprehensive flood management.

The CRS practices are broken down into 19 creditable activities and sorted into four categories, "Public Information", "Mapping and Regulations," "Flood Damage Reduction," and "Warning and Response." Depending on how many activities the community fulfills, the receive credit points that are associated with a specific class and associated reductions on insurance premiums. The more CRS activities a community performs, the greater their insurance premiums are reduced. Table B-1 depicts the ranking system and the associated premium reductions (FEMA, 2023a). Communities interested in joining the CRS program should contact the state NFIP coordinator for additional information.

Table B-1. CRS Reductions by Class (FEMA, 2023a).

Credit Points	Class	Premium Reduction SFHA	Insurance Premium Reduction Non-SFHA
4,500+	1	45%	10%
4,000-4,499	2	40%	10%
3,500-3,999	3	35%	10%
3,000-3,499	4	30%	10%
2,500-2,999	5	25%	10%
2,000-2,499	6	20%	10%
1,500-1,999	7	15%	5%
1,000-1,499	8	10%	5%
500-999	9	5%	5%
0-499	10	0	0

Many disaster relief assistance plans do not include flood protection, so property owners, renters and businesses must procure this protection elsewhere (FEMA, n.d.). Flood insurance provides the insured with protection even when a disaster is not declared by the president, unlike coverage under disaster relief assistance (FEMA, 2021). Protection under the NFIP does not require payback after a flood and ensures that the policy will not be canceled or non-renewed after repeat losses. However, NFIP insurance premiums vary depending on flood risk, type of coverage (e.g., building or building and content), location of the property, age of the structure, and structure layout (e.g., location of utilities). The average cost of flood insurance is approximately $738 annually and costs are reduced as flood hazard decreases, when compared to the amount of reimbursement. For residential occupancies flood insurance covers up to $250,000 for building losses and $100,000 for content coverage. For businesses these values increase to $500,000 for both building losses and content coverage (FEMA, 2012).

Noncompliance with NFIP

If a community does not uphold its responsibility and fails to adequately enforce its floodplain management regulations, FEMA can take enforcement action through probation or suspension from the NFIP. If NFIP communities also participate in CRS, they may receive reclassification which could result in increased premiums for policy holders. In addition to being prohibited or suspended from the NFIP, communities are likely to have an increased public health and safety risk associated with the increased probability of flooding.

NFIP Probation (FEMA 480, 2005): A community will receive a formal notification from FEMA regarding their floodplain management program's non-compliance with NFIP criteria. FEMA will issue a 90-day notice of a community's impending probation and lists specific deficiencies and violations in its program. This notice will be distributed to all flood insurance policy holders informing them of the impending probation and notifying them that a surcharge will be added to policies sold or renewed during the probation period. The goal of this is to bring policy holder's attention to the issue and apply public pressure on local officials to correct their deficiencies. The community will have 90 days to correct its violations and deficiencies and probation may be continued for up to one year after corrections have been made to ensure communities are committed to maintaining NFIP compliance.

NFIP Suspension (FEMA 480, 2005): If a community fails to rectify their flood management deficiencies following a probationary period, a community may be subject to suspension from the NFIP. FEMA grants a community 30 days to appeal its suspension and a written or oral hearing may occur prior to suspension. A community may apply for re-instatement by submitting the following: a local legislative or executive measure outlining the community's intent to comply with NFIP criteria, evidence that all program deficiencies have been corrected, and evidence that all violations have been corrected to the fullest extent possible. FEMA reserves the right to re-instate a community back into the NFIP, elevate a community to a probationary period, or withhold a community from re-instatement for up to one year following a satisfactory submission of compliance.

CRS Reclassification (FEMA 480, 2005): If a CRS community is noncompliant with NFIP regulations then the community may be reclassified, resulting in property owners not receiving discounts on their flood insurance premiums.

Sanctions for Non-Participation (FEMA 480, 2005): A community that refuses to join the NFIP, is suspended from the program, or has withdrawn from the program is subject to the following enforcement actions:

- Flood insurance will not be available to a community and property owners will not be able to purchase flood insurance policies.
- If a community has been suspended or withdrawn from the program, existing flood insurance policies will not be renewed.
- Federal assistance in acquisition of properties or construction of buildings in SFHAs may not be available.
- Federal disaster assistance for damages incurred on insurable buildings in identified flood hazard areas will not be available.

Community Types and FIRMs

There are several different types of communities regulated under the NFIP, as depicted in Table B-2.

Table B-2. Types of Communities Regulated under the NFIP.

Community Type/44 CFR Reference	Community Type Description
60.3(a)	FEMA has not provided any maps or data
60.3(b)	FEMA has provided a map with approximate A Zones (or approximately 100-year flood zones, do not contain specific BFEs)
60.3(c)	FEMA has provided a Flood Insurance Rate Map (FIRM) with base flood elevations and a depiction of the floodway
60.4(e)	FEMA has provided a FIRM that shows V Zones (coastal high hazard areas)

NFIP aims to regulate development within the floodplain, including adding fill or other material, as the addition of fill modifies the floodplain function. Permits are required for all development within the SFHA shown on a community's FIRM. If a community is classified as a 60.3(a) community without a FIRM, the community must require a permit for all development projects throughout the community. The regulations at 44 CFR 60.3(a)(2) requires that NFIP communities obtain all required federal and state permits to proceed with projects. Communities may choose to develop a list of permits required for their respective jurisdictions.

The regulations at 44 CFR 60.3(c)(2) requires that new construction and substantial improvements of residential structures within Zones A1-30, AE, and AH on the community's FIRM have the lowest floor (including the basement) elevated to or above the base flood level. Elevation is typically performed by elevating on fill, elevating on piles, posts, or columns, or elevation on walls or a crawlspace.

Appendix C: Substantial Damages Additional Information and Examples

The cost to repair a structure is calculated based on conducting a repair to the building's pre-damage condition, even if the property owner elects to do less, in addition to the cost of any improvements to be realized during the repair project. The substantial damage includes the true cost of bringing the building back to its pre-damaged condition using labor and materials set at market prices.

- To aid in an accurate cost estimate, localities should consider the following:
    - Obtain cost estimates from a professional third party, such as:
        - Licensed general contractor
        - Construction estimator
        - Insurance adjustment documentation
        - Damage assessment field surveys conducted by building inspectors or tax assessment agencies.
    - When reviewing the cost estimate, consider:
        - Do these numbers seem correct?
        - Are the costs reasonable?
- **Examples of Substantial Damages:**
    - **Reconstruction of a building that was entirely destroyed, damaged, or demolished.** In this scenario, a new building is built on the old structure's foundation or slab. This term can also refer to a building that has been moved to a new site. Regardless, reconstructions must be treated as new buildings. The reconstructed structure is built on the existing foundation, which must be raised above the BFE. Openings must be installed in the foundation below the BFE for floodproofing. (Note, this example only applies to buildings in A Zones. B Zone buildings must be elevated onto piles or columns).
    - **Repairing substantially damaged structures.** In this scenario, it must be determined that a building has been "substantially damaged," (i.e., the cost to repair the damage is equal or greater than 50% of the building's market value before the damage). Examples of costs that are considered when determining substantial damage include wallboard and insulation replacement, new paint, carpeting and flooring replacement, new cabinets, new built-in appliances, new hollow-core interior doors, new furnaces and water heaters, duct cleaning and disinfection, porch flooring and step repair, plumbing cleaning and testing, and outlet/switch replacement.

Appendix D: Substantial Improvements and Additional Information

SIs may occur in several different ways. The following provides a description of the most common types of improvements.

- **Lateral Additions:** Improvements that increase the square footage of a structure. If one building is attached to another through a covered breezeway (or similar) it is considered as a separate building and not an addition. Examples of additions for residential structures may include attachment of a bedroom, den, or recreational room. In a non-residential structure, if the addition meets the definition of SI, it must be elevated or floodproofed. Depending on the flood zone and project approach, the existing building may or may not have to be elevated.
- **Vertical Additions:** When the improvement is a full or partial second floor, the entire structure must be elevated. Examples of vertical additions in residential structures typically include demolishing the roof of the existing structure, elevating the bottom of the lowest horizontal structure member above the BFE using piles/columns, and adding the vertical addition along with the roof on top of the existing structure. Examples of vertical additions in non-residential structures include dry-floodproofing any part of the existing structure that is below the BFE, adding a watertight flood barrier to any doors or openings on the ground level, and finally adding second story walls on top of the existing first story.
- **Rehabilitation:** An improvement made to an existing structure which does not affect the external dimensions of the structure.
    - **Minor rehabilitation:** If the cost to complete the rehabilitation project is less than 50 percent of the structure's market value, then the rehabilitation project is not considered as substantial and does not have to be elevated or protected, although it is advisable to do so when possible, even during minor rehabilitation projects.
    - **Major rehabilitation:** If the cost to complete the rehabilitation project is equal to or greater than 50 percent of the structure's market value, the existing structure must be elevated or have the basement filled to meet the elevation standard. The new structure would benefit from post-FIRM flood insurance rates.

Remember!
All additions to post-FIRM buildings are defined as new construction and must comply with the requirements of the local floodplain ordinance, regardless of the size or cost of the addition. A small addition to a residential structure that is not a SI must be elevated at least as high as the BFE in effect when the structure was built. If the FIRM is revised and results in an increased BFE, only additions that are considered SIs are required to be elevated or flood-proofed to the new BFE.

Appendix E: Increased Cost of Compliance (ICC) Coverage

Definitions and Regulations

- Substantial damage: A determination made by the community that damage due to flooding is equal to or has exceeded 50 percent of the value of the building. If the estimated cost is less than 50 percent of Fair Market Value for the building, ICC is not available.
- Coverage D, ICC, is part of the Standard Flood Insurance Policy, codified as 44 CFR Part 61, Appendix A.
- FEMA defines ICC coverage as "One of several resources for flood insurance policyholders who need additional help rebuilding after a flood. It provides up to $30,000 to help cover the cost of mitigation measures that will reduce flood risk. ICC coverage is part of most standard flood insurance policies available under FEMA's NFIP.

Process and Important Notes

- In 1997, NFIP began offering additional coverage to structural flood insurance policyholders.
- There are some limitations to ICC, including:
    - It only covers damage caused by flooding.
    - It is only available if there was a flood insurance policy applicable to the structure before it was flooded.
    - There is a cap of $30,000 per structure.
    - Claims must be accompanied by a substantial damage determination by the floodplain management or appropriate representative.
- If a home or business is substantially or repetitively damaged by a flood, specific building updates may need to be conducted to meet local regulations and reduce future flooding before structure repair occurs.
- To receive ICC, property owners must have a Standard Flood Insurance Policy through the NFIP.
- The NFIP offers ICC coverage to assist homeowners meet the improved building requirements and can be utilized for mitigation projects, including demolition. Buildings considered to be substantially damaged from FLOODING will be eligible to receive up to $30,000, which could be a source of funding utilized for acquisition projects.
- ICC is filed separately from the normal flood insurance claim, only applies to buildings, and only covers the cost of the compliance measures performed.
- In accordance with CFR 44 Part 61, ICC will **not** pay for:
    - The cost to comply with any floodplain management law or ordinance in communities participating in the Emergency Program.
    - The cost associated with enforcement of any ordinance or law that requires any insured or others to test for, monitor, clean up, remove, contain, treat, detoxify or neutralize, or in any way respond to or assess the effects of pollutants.
    - The loss in value to any insured building due to the requirements of any ordinance or law.

Did You Know?
ICC may be used for mitigation projects, including demolition. Community members who have standard flood insurance and have experienced flood damage could receive up to $30,000 for mitigation projects.

- The loss in residual value of the undamaged portion of a building demolished as a consequence of enforcement of any State or local floodplain management law or ordinance.
- Any code upgrade requirements (e.g., plumbing or electrical wiring) not specifically related to the state or local floodplain management law or ordinance.
- Any compliance activities needed to bring additions or improvements made after the loss occurred into compliance with state or local floodplain management laws or ordinances.
- Loss due to any ordinance or law one was required to comply with before the current loss.
- Any rebuilding activity to standards that do not meet the NFIP's minimum requirements. This includes any situation where the insured has received from the state or community a variance in connection with the current flood loss to rebuild the property to an elevation below the base flood elevation.
- ICC for a garage or carport.
- Any building insured under an NFIP Group Flood Insurance Policy.
- Assessments made by a condominium association on individual condominium unit owners to pay increased costs of repairing commonly owned buildings after a flood in compliance with state or local floodplain management ordinances or laws.

Additional Resources

- FEMA ICC Brochure: https://www.fema.gov/sites/default/files/2020-05/Increased_Cost_Compliance.pdf
- FEMA ICC Fact Sheet: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiw3eLPgqj2AhW9mHIEHUQ6AhsQFnoECAQQAQ&url=https%3A%2F%2Fwww.fema.gov%2Fsites%2Fdefault%2Ffiles%2F2020-08%2Ffema_increased-cost-of-compliance_fact-sheet.pdf&usg=AOvVaw3ZecCesImYzfknaLMGJnwd
- FEMA ICC Proof of Loss: https://www.fema.gov/sites/default/files/2020-07/FEMA-Form_086-0-10_ICC-POL.pdf
- National Flood Insurance Program's Increased Cost of Compliance Coverage: Guidance for State and Local Officials, FEMA 301.
- FEMA NFIP ICC Policyholder's Processing Checklist: https://www.fema.gov/sites/default/files/2020-11/fema_icc_policyholders_processing_checklist.pdf
- FEMA P-1080, Answers to Frequently Asked Questions About ICC: https://www.fema.gov/sites/default/files/2020-11/fema_p1080_icc_faq_20170817.pdf

Appendix F: Emergency Declarations and Disaster Response

Process and Important Notes

- Pennsylvania authorizes state, county, and local municipal governments to declare a disaster emergency when a disaster has occurred or is imminent. All responses to emergency declarations in Pennsylvania start at the lowest tier (local subdivisions) and may warrant a higher level of response (county, state, federal) based on the scope and severity of the emergency.
- Communities may conduct initial damage assessments after a disaster, which can help to inform the larger Preliminary Damage Assessment (PDA) conducted by state and federal agencies. Agencies collect information and data on the impacted area which is utilized to document the initial extent of damages. If the response needed for the disaster is beyond the capacity of the state and localities, a Presidential Emergency or Disaster Declaration may be made. Additional information about PDAs, including Level I, Level II, and Level III Assessments are presented in Section 4 of the Main Handbook: *Presidential Emergency or Disaster Declaration*. Evaluations include:
    - The extent of the disaster
    - The disaster's impacts on facilities
    - Types of federal assistance that may be needed in response to the disaster
- The governor, through the regional administrator, submits a request to the President for a major disaster declaration, which must be submitted within 30 days of the disaster (unless the due date is extended). In the event the disaster is so severe that it meets the definition of a major disaster declaration, funding from the Individual Assistance (IA), Public Assistance (PA), and HMGP become eligible (FEMA, 2021).
- FEMA and PEMA coordinate with local governments.
    - Coordinate with local emergency managers to conduct public assistance applicants' briefing. During this meeting, PEMA explains the types of Public Assistance that is available, eligibility, application procedures, and deadlines.
- Initial Damage Assessments are typically followed by a more formal PDA. During a PDA, various levels of government work together to conduct comprehensive damage assessments. Initial damage assessments are typically conducted by individual homeowners and communities while PDAs are conducted by local, state, and federal emergency management agencies. Information collected during a PDI or PDA is used to make determinations of the type of declaration, which impacts the type and amount of assistance provided to communities and property owners.
- FEMA provides several FEMA Disaster Assistance programs to assist governments and survivors respond to and recover from federally declared disasters.
    - Individual Assistance (IA): Provides federal awards to individuals, households, states, local governments, tribes, and territories to support individual disaster survivors. Joint PDAs allow impacted governments to identify and assess disaster damages to determine whether jurisdictions will request an IA major disaster declaration.
    - Public Assistance (PA): Provides federal assistance to support communities' recovery from major disasters by providing them with grant assistance for debris removal and life-saving emergency protective measures and for restoring public

infrastructure. Joint PDAs are conducted to identify disaster-related damage and determine whether jurisdictions are eligible for PA.
    - Hazard Mitigation Grant Program (HMGP): Helps communities implement hazard mitigation measures after a major disaster declaration in the areas of the state to reduce the risk of loss of life and property from future disasters.
- When assessing damages, entities may use a scale similar to Figure 6 to evaluate the level of flood damage.

Figure F-1. Summary of Flood Damage Levels.

Flood Damage Impact Ratings	
Affected	• Any waterline in the crawl space or an unfinished basement when essential living space or mechanical components are not damaged or submerged. • Damage to a porch, carport, garage, and/or an outbuilding, etc.
Minor	• Waterline at 1 to 3 inches in an essential living space. • When waterline exceeds 3 inches but is below 18 inches, damage may be major or minor depending on the flowing factors: duration of the flood; contaminants in the water; if waterline reached outlets; and number of essential living spaces flooded. • Any waterline in a finished basement.
Major	• Waterline above 18 inches or the electrical outlets in an essential living space. • Waterline on the first floor (regardless of depth) of a residence when basement is completely full. • When waterline exceeds 3 inches but is below 18 inches, damage may be major or minor depending on the following factors: duration of the flood; contaminates in the water; if waterline reached outlets; and number of essential living spaces flooded.
Destroyed	• Waterline at the roofline or higher, or complete failure of two or more major structural components (e.g., collapse of basement walls, foundation, walls, or roof)

Preparing for Post-Disaster Recovery

Communities should proactively follow a general sequence of activities before disasters strike to help distribute workloads and ensure that plans are in place for rebuilding and mitigation activities to ensue. However, because each disaster has unique effects, post-disaster recovery is not standard, and local officials face compounding challenges that need to be assessed and prioritized. For example, communities in floodplains with many susceptible buildings may require additional support after disaster events to make SD/SI determinations and address permit applications.

Support may come in the form of state or FEMA assistance, but communities can also leverage resources from, or enter agreements with, other communities, associations (e.g., floodplain management, building code), and engineering and architectural organizations to help build capacity (FEMA, 2010). Ultimately, local officials in the community affected by disaster needs to make final SD/SI determinations and permit-related decisions.

The following actions can help Floodplain Administrators and community managers understand their roles and responsibilities and enhance disaster resilience.

Table F-1. Roles and Responsibilities of Floodplain Administrators and Community Managers

Action item	Affected parties	Pre-disaster	Post-disaster
Create and distribute a communications plan that delineates typical post-disaster activities, such as issuing permits for reconstruction/repair, making SD determinations for buildings located in the mapped Special Flood Hazard Area (SFHA), articulating how to bring a SD building into compliance with floodplain management standards, and describing Increased Cost of Compliance (ICC) insurance coverage under the National Flood Insurance Program (NFIP) (FEMA, 2010).	Local officials, media, elected officials	✓	
Organize records to categorize buildings according to whether they have been inspected. Also note those with pending permit applications, SD determinations, and permits.	Building owners	✓	✓
Establish regular community walk throughs to report construction work that is unpermitted.	Building owners	✓	✓
Inform elected officials about post-disaster community duties.	Elected officials		✓
Request that utility companies and departments turn services on only if a building permit is provided by the owner, where permits are required.	Utilities, building owners, homeowners		✓
Issue a full or partial moratorium for issuing permits until SD determinations have been made.			✓

Additional Resources

- FEMA's Disaster Declaration Fact Sheet: https://www.fema.gov/pdf/media/factsheets/dad_disaster_declaration.pdf
- FEMA's Effective Coordination of Recovery Resources for State, Tribal, Territorial, and Local Incidents: https://www.fema.gov/sites/default/files/2020-07/fema_effective-coordination-recovery-resources-guide_020515.pdf
- FEMA's Guide to the Disaster Declaration Process and Federal Disaster Assistance: https://www.fema.gov/pdf/rrr/dec_proc.pdf
- FEMA's How a Disaster Gets Declared: How a Disaster Gets Declared | FEMA.gov
- FEMA's Preliminary Damage Assessment Guide: https://www.fema.gov/sites/default/files/2020-07/fema_preliminary-disaster-assessment_guide.pdf
- FEMA's Disaster Recovery Reform Act (DRRA) Section 1206 policy: Disaster Recovery Reform Act (DRRA) Section 1206 policy - YouTube

Appendix G: Cost Estimations

There are several **Methods for Determining Costs** in support of SI/SD Determinations.

Acceptable methods for determining the **costs** are identified by FEMA as:

> 1) Itemized costs of materials and labor or estimates of materials and labor that are prepared by licensed contractors or professional construction cost estimators.
>
> 2) Building valuation tables published by building code organizations.
>
> 3) "Qualified Estimates" of costs that are prepared by the local official using professional judgment and knowledge of local and regional construction costs.
>
> 4) Cost estimates submitted by building owners that they have prepared themselves.

Local officials should require owners to provide as much supporting documentation as possible, including pricing information from lumber companies and hardware stores when builders develop cost estimates themselves.

Items to be included and excluded from costs

- **The following items should <u>be included</u> in the project cost estimates:**
  - Spread/continuous foundation footings and pilings
  - Monolithic concrete slabs (or other types of concrete slabs)
  - Bearing walls, tie beams, and trusses
  - Floors and ceilings
  - Decks and porches that are attached to the building
  - Interior partition costs
  - Exterior wall finishes including painting and moldings
  - Windows and doors
  - Roofing, including re-shingling and retiling
  - Hardware (interior and exterior)
  - Tiling, linoleum, stone, or carpet over subflooring
  - Bathroom tiling/fixtures
  - Interior wall finishes including drywall, painting, stucco, etc.
  - Cabinets (kitchen, utility, bathroom)
  - Built-in bookcases, cabinets, and furniture
  - HVAC equipment
  - Plumbing and electrical
  - Light fixtures/ceiling fans
  - Security systems
  - Built-in kitchen appliances
  - Central vacuum systems
  - Water filtration, conditioning, or recirculation systems
  - Demolition costs
- **The following items should be <u>excluded</u> from project cost estimates:**
  - Plans/specifications
  - Survey costs
  - Permit fees

- Post-storm debris clean up
- Landscaping (including irrigation systems)
- Sidewalks
- Fences
- Yard lights
- Swimming pools
- Screened pool enclosures
- Garages, sheds, gazebos (detached structures

Appendix H: Determining Market Value

Once the costs of improvement or repair have been calculated, these costs must be divided by the market value of the building. If the result of this calculation is greater than or equal to 50% (i.e., if the cost to repair is greater than 50% of the market value of the building), then the damage meets the definition of substantial. Communities may make SI/SD determinations based on data provided by building owners who are trying to obtain a permit or based on market values obtained by the community itself.

For SI/SD determinations, only the market value of the building or structure is to be taken into consideration. It is understood that land value, land improvements, and accessory structures can increase the value of a property, thus these factors must be excluded.

There are four principal methods in determining the market value of a structure. It is the responsibility of local officials to determine the method in which permit applicants must use to accurately determine the value of their structure.

- It is common for communities to require permit applicants to obtain appraisals of market value **prepared by state licensed qualified professionals** to perform appraisals in the State or community where the structure is located. The appraisal must exclude value of the land and not use an approach that bases the value on the use of the property but instead, the structure.
- Additionally, market values can be taken from **values developed for property tax assessment purposes** which are adjusted to approximate market value. The information from tax assessments may need to be adjusted recommended by the tax appraiser to reflect current market conditions.
- **Estimates of a structure's actual cash value**, which may include the cost of replacement for the building, minus a depreciation percentage based on the age and condition of the structure.
- Local officials may need to use other methods to estimate market value after disaster events that damage many structures, when it is important to quickly and efficiently focus attention on those structures most likely to have sustained substantial damage. Other methods include values from NFIP claims data or qualified estimates based on sound professional judgement by staff within the tax assessor's office or the building department.

The main factors in determining market value include:

- **Square footage** of the structure.
- The **base cost per square foot** or the cost of current labor and materials needed to replace the structure to the functional equivalent, size, style, and quality of construction.
- The **geographic adjustment factor** is used to equalize the cost of structure replacement across the country. Labor and material costs vary throughout the United States, so a base cost multiplier (above or below 1.0) is applied.
- **Cost adjustments** include extraneous, improvements not related to meeting flood regulation requirements, upgrades that increase the structure's value.
- The structures condition prior to the flood event determines the **depreciation** rating. The ratings range from **Very Poor Condition** to **Excellent Condition**, lowest to highest respectively.

- **Very Poor Condition** – 88.9%
- **Requires Extensive Repairs** – 66.55%
- **Requires Some Repairs** – 38.8%
- **Average Condition** – 24.2%
- **Above Average Condition** – 13.4%
- **Excellent Condition** – 2.9%
- **Other** – Decided by an inspector. This determination must include an explanation for why the structure does not fit within the above categories.

For more information regarding the determination of market value, consult the FEMA Substantial Improvement/Substantial Damage Desk Reference.

Appendix I: Additional Funding Information

State and local/county funding sources are often available to help communities respond to and recover from disasters, but they may not sufficiently address all community needs or be available for long-term recovery projects. After a presidentially-declared disaster, additional sources of federal funding become available that can help communities see through long-term projects, such as those to help mitigate impacts of future flooding events or restore buildings and homes that are substantially damaged. Community officials should be aware of such opportunities to help property owners decide how to approach recovery and/or proactively plan to eliminate hazards.

Pennsylvania's Hazard Mitigation Plan qualifies the state to be eligible for federal mitigation funds, and the Stafford Act provides PEMA with discretionary authority to manage funds for mitigation activities under presidentially declared disasters.

HMGP Eligibility Checklist

Your community may be considered for FEMA HMGP funding if the requirements are met below.

- ✓ The President declared a major disaster
- ✓ Your state has an authorized hazard mitigation plan
- ✓ Your community is a member of the NFIP and is in good standing
- ✓ The proposed project is cost-effective, technically feasible, environmentally sound, and FEMA-approved

The table below includes both pre- and post-disaster funding options and other disaster-related resources. Communities may leverage pre-disaster mitigation grants to address issues related to buildings that are experiencing repeated flooding and have high likelihood of sustaining substantial damage in the future. Mitigation activities that may be eligible for mitigation grants may include property acquisition and demolition, structure elevation, building relocation to areas outside of SFHAs, and floodproofing. Post-disaster projects typically include structures that are deemed substantially damaged, where substantial improvements are planned. Please note that federal guidance is subject to change. Communities that are interested in funding programs and availability should contact PEMA for more information.

Table I-1. Sources of Disaster Mitigation Funding

Website Link	Description	Support type
FEDERAL LEVEL		
Federal Emergency Management Agency (FEMA)		
Public Assistance (PA) Program	• Goal: Funds permanent work for flood related damages to help communities respond and recover quickly from major disasters. May fund trained professionals to help with damage assessments. • Eligible activities: Removal of debris, emergency protection, and disaster-damaged building repair, replacement, or restoration. • Eligible applicants: States, local, tribal, and territorial (SLTT) governments, and certain private non-profits that are in good standing with the NFIP.	Post-presidentially declared disaster grant

Website Link	Description	Support type
Individuals and Households (IHP) Program	• Goal: Provides direct and financial assistance to those affected by a disaster to meet basic needs and serve as an addition to disaster recovery efforts. • Funds for: Temporary housing, personal property/home/vehicle repair or replacement, hazard mitigation assistance, and other items approved by SLTT governments. • Eligible applicants: Individuals and households who have uninsured or under-insured necessary expenses and needs.	Post-disaster grant
Hazard Mitigation Grant Program (HMGP)	• Goal: Provides funding to develop hazard mitigation plans and rebuild in ways that reduce and mitigate future disaster losses to communities. FEMA may fund up to 75 percent of the mitigation project, the remainder of funding may be covered by state/local sources, individuals, loans, or insurance policy increased cost of compliance funds. • Eligible activities: Assessing fair market value of property, appraisals, lot surveys, title searches, closing, demolition, elevation, floodproofing, legal fees related to contract review and settlement. • Eligible applicants: SLTT governments.	Post-presidentially declared disaster grant
Disaster Case Management Program (DCMP)	• Goals: Support disaster survivors as Individual Assistance to help communities achieve pre-disaster function. • Eligible activities: Partner integration, provider capacity building, state program development within 24 months from the disaster declaration. • Eligible applicants: Disaster survivors, including states, localities, and non-profit organizations.	Post-presidentially declared disaster grant
Flood Mitigation Assistance (FMA) Grants	• Goal: Used to reduce/eliminate long-term flood damage risk to NFIP-insured buildings. FMA grants fall under FEMA's Hazard Mitigation Assistance (HMA) Program, which encourages proactive planning. • Eligible activities: Buyout, demolition, elevation, floodproofing. • Eligible applicants: SLTT governments and communities.	Pre-disaster mitigation grant
Building Resilient Infrastructure and Communities (BRIC) Program	• Goals: Fund implementation of hazard mitigation projects to reduce risks to future hazards and reliance on federal post-disaster funding. BRIC falls under FEMA's HMA Program, which encourages proactive planning. • Eligible activities: Projects that help build capacity and partnerships, support innovation, provide consistency, and remain flexible. • Eligible applicants: SLTT governments.	Pre-disaster mitigation grant

Website Link	Description	Support type
U.S. Department of Agriculture (USDA)		
USDA/Natural Resources Conservation Service (NRCS) Disaster Recovery	• Assistance for farmers, ranchers, and landowners • Environmental Quality Incentives Program can help landowners plan and implement conservation practices to improve land health and increase resilience to hazards through both funding and technical assistance.	Funding and technical assistance
USDA/NRCS Watershed and Flood Prevention	• Assists federal and STLL entities protect and restore watersheds through projects aimed to prevent flooding, protect watersheds, provide spaces or public recreation and habitat, and improve water quality and public safety.	Funding and technical assistance
U.S. Department of Housing and Urban Development (HUD)		
HUD Community Development Block Grants (CDBG)	• Goal: Issue grants to approved cities and counties for suitable living environments and expand economic opportunities, specifically for low-medium income individuals. • Eligible activities: Property acquisition, demolition and relocation, structure rehabilitation, construction for public facility improvements.	Pre-disaster grant
HUD CDBG-Disaster Recovery Funds	• Goal: Help communities recover from extraordinary disaster impacts with additional Congressionally-appropriated funding. • Eligibility: Areas that are deemed the "most impacted and distressed" after a major disaster.	Post-disaster grant
HUD Community Development Block Grant Mitigation Program	• Goal: Provide funding for the development and implementation of disaster risk and hazard mitigation plans. The program also strives to foster public/private partnerships and community risk reduction, including decreasing future disaster costs. • Eligible activities: Grantees must develop a CDBG-MIT Action Plan as part of the application process. The Action Plan must include a risk-based Mitigation Needs Assessment that identifies and analyzes all significant current and future disaster risks and provides a substantive basis for the activities proposed.	Pre-disaster grant
Pennsylvania Grants and Resources		
First Responder Mental Health Toolkit	• Phycological first aide • Emergency behavioral health responder • Low Income Home Energy Assistance Program • Replacement SNAP overview	Recovery training and grant funding
Disaster Human Services and Emergency Management	• Crisis Counseling Assistance Grant (Program Specific) • Disaster Case Management (Program Specific)	Grant funding, outreach, emergency

Website Link	Description	Support type
		recovery support
Mass Care Task Force	• Feeding Task Force • Sheltering Task Force • Disabilities Integration Task Force	Emergency recovery support
H2O PA – Water Supply, Sanitary Sewer and Storm Water Projects	• Single-year or multi-year grants to municipalities to assist with the construction of drinking water, sanitary sewer, and stormwater projects. • New funding has been appropriated ($205.4 million) through the American Rescue Plan Act.	Grant funding, construction and improvement projects
Flood Mitigation Program (FMP)	• Provides statewide funding for flood mitigation projects. • Eligible partners include municipalities, councils of government, authorized organizations, institutions of higher education, watershed organizations, and for-profit businesses.	Funding, construction, and improvement projects

References

FEMA. (2018). Answers to Questions About Substantially Improved/Substantially Damaged Buildings. https://www.fema.gov/sites/default/files/2020-07/fema_p213_08232018.pdf

FEMA. (2023). Assistance for Governments and Private Non-Profits After a Disaster. https://www.fema.gov/assistance/public

FEMA. (2022). FEMA Hazard Mitigation Grants: 404 and 406. https://www.fema.gov/press-release/20220328/fema-hazard-mitigation-grants-404-and-406#:~:text=Section%20406%20%E2%80%93%20Public%20Assistance%20Program&text=The%20406%20funding%20provides%20discretionary,counties%20and%20eligible%20damaged%20facilities.

FEMA. (2022). Flood Mitigation Assistance (FMA) Grant. https://www.fema.gov/grants/mitigation/floods

FEMA. (2023). Hazard Mitigation Grant Program (HMGP). https://www.fema.gov/grants/mitigation/hazard-mitigation

FEMA. (2022). Individuals and Households Program. https://www.fema.gov/assistance/individual/program

PEMA. (2023). State Hazard Mitigation Plan. https://www.pema.pa.gov/Mitigation/Planning/State-Hazard-Mitigation-Plan/Pages/default.aspx

Attachment 1:
Handouts and Templates for Community Education, Outreach, and Property Owner Engagement

Example Press Release

RESIDENTS IN [JURISDICTION] WITH DISASTER DAMAGE REMINDED OF PERMIT REQUIREMENTS

As property owners in [jurisdiction] contemplate clean up and repairs following the recent [disaster], the [jurisdiction permit office] is reminding residents to obtaining local permits before repairing or rebuilding damaged structures in the special flood hazard area.

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

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 a disaster.

Repairs to damaged buildings can be permitted, however, special conditions apply to substantially damaged buildings (those in which the total cost of repairs is ≥ 50% of the structure's pre-disaster market value). If a building is found to be substantially damaged, regulations require that repairs include bringing the structure into full compliance with the local floodplain ordinance. In some cases, doing so 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. If damage is caused by a flood, flood insurance may also provide up to $30,000 to protect a structure from future flooding through a claims process known as ICC (Increased Cost of Compliance). The property owner must have had flood insurance for ICC to become available.

Property owners and residents with [disaster]-damaged buildings should contact [local building, zoning or floodplain administrator] for more information on repair and reconstruction permits.

Example Press Release

RESIDENTS IN [COMMUNITY] WITH FLOOD DAMAGE REMINDED OF PERMIT REQUIREMENTS

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

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

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

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

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

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

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

Sample Handout for Residents

INFORMATION REGARDING CLEANUP OF DAMAGED STRUCTURES WITHIN THE FLOODPLAIN

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

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

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

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

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

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

[Add Floodplain Administrator's name]

[Floodplain Administrator's Phone number]

Sample Letter for Damage Inspections

[Community Letterhead]

Dear property owner or persons residing at this address,

The [community's name] is requesting your cooperation to assist us with expediting the recovery of our community from the impacts of [insert name of event]. As you should be aware, before we can issue building permits for repair, reconstruction, or other improvements, we must inspect properties in the high-risk flood zones shown on our flood maps that were damaged by wind, water, fallen trees, or other hazards must be inspected before we can issue building permits for repair, reconstruction, or other improvements. In accordance with the [community's name] building code and our flood damage prevention regulations, we must determine whether the damage meets the definition of "substantial damage."

The process we've developed to achieve an efficient, orderly, and responsive permit review begins with damage inspections. Therefore, please allow our staff, or staff from state, FEMA, or private contractors working on our behalf, to access and inspect your damaged building. These authorized staff carry a "right of entry" document and their agency identification. They must show you those documents before you let them access your property.

The preliminary damage inspections are limited to evaluating the extent of damage to foundations, roofs, windows and doors, siding, installed appliances, electrical and plumbing, heating and air conditioning, and walls and floors. These inspections are required to assess the condition of the building and determine the work required to repair the building to its pre-damaged condition. The period of inspections is limited to daylight hours only, between [insert anticipated period of inspections]. Once we have inspected your property and recorded the results in our database, we will send you a letter with the results and explain any requirements that may apply.

We greatly appreciate your willingness to allow our community's inspectors to assess the condition of your property. This will help you and the community move forward as quickly as possible with the permitting and repair of your building.

If you have any questions about this process or the inspectors, please contact us immediately by calling [insert local contact].

Thank you for your cooperation and support to help our community recover from [insert name of event].

Sincerely,

[City Manager/County Administrator]

Sample Substantial Improvement/Substantial Damage Notice to Property Owners

Repairing your building after damage? Adding to, renovating, or remodeling your building? Here's what YOU need to know about the "50% Rule."

If the lowest floor of your home or business is below the base flood (100-year) elevation or the required freeboard elevation established by your community, floodplain management requirements in the {community name} building code may affect how you repair, renovate, or remodel the building. These codes also allow non-residential buildings to be dry-floodproofed rather than elevated. These requirements are consistent with the requirements of the National Flood Insurance Program, which support public safety and protect the structures we invest in from future flood damage.

Save yourself time, aggravation and money. Please read the following information:

SUBSTANTIAL DAMAGE refers to a building that is damaged by any hazard to the extent that the cost of restoring the building to its condition before the damage would equal or exceed 50% of the building's market value before the damage occurred. (Note: This assessment must include all costs necessary to fully repair the building to its pre-damaged condition).

SUBSTANTIAL IMPROVEMENT means any alteration, rehabilitation, addition or other improvement of a building that will cost at least 50% of the market value of the building before the improvement is begun.

If a building is substantially damaged or substantially improved, it must be brought into compliance with the floodplain management requirements in the [community's name] building code. These requirements may include raising the building to or above the elevation required by the community. Following the National Flood Insurance Program requirements, communities have the responsibility to determine whether buildings are substantially damaged or will be substantially improved, as described here:

1. Your community may estimate market value by using the tax assessment value of your building (excluding the land and accessory structures), plus about 15% to 20%. If you disagree with this estimate, you may hire a state-licensed real estate appraiser and submit documentation of the actual case value (replacement cost less depreciation) or a market value appraisal of the building.

2. You must obtain and submit to your building official a detailed and complete cost estimate for the addition, remodeling, reconstruction, and/or repair of all damage to your building. The cost for construction must be prepared and signed by a licensed general contractor. Your community may require the contractor to sign an affidavit indicating that the cost submitted includes repairs of all damage or all improvements to your building, not just structural work. See below for a list of items that must be included.

   Your community will evaluate the cost of improvements or cost of repairs and determine if they are fair and reasonable. For repair of storm or flood damage, pre-storm prices and rates will be used. The cost of improvements or repairs does not include items not considered a permanent part of the building (plans, surveys, sidewalks, pools, screens, sheds, gazebos, fences, etc.).

3. If your community determines that your damaged building incurred substantial damage or is proposed to be substantially improved, you must submit an Elevation Certificate to your community to identify the existing building's elevations. Elevation Certificates must be prepared by a licensed professional surveyor.

4. If the existing lowest floor is below the base flood elevation, the building must be elevated to or above that level plus 1 foot (or higher, if required by your community). Garages and carports are not considered to be the "lowest floor." Likewise, all electrical and mechanical equipment (heating and cooling, etc.), bathrooms, and laundry rooms must be elevated to or above that level. Only parking, building access and limited, incidental storage are allowed below an elevated building, and only if the walls enclosing those areas comply with code requirements, including flood openings. If engineering analyses indicate that dry floodproofing is feasible, non-residential buildings may be dry floodproofed instead of elevated.
   If the building conforms with the building code requirements for its flood zone, repairs and improvements may be performed if they maintain conformance with the floodplain management requirements. This means that if the lowest floor, electrical and mechanical equipment, laundry, and bathroom are already above the required elevation; if the type of foundation is permitted in the flood zone; if enclosures below the elevated building comply; and if all other aspects of the building conform to the building code requirements, no additional flood-related requirements will be imposed.

5. Building plans must be prepared to show how the building is to be elevated and brought into compliance with all flood-related requirements. If the building is in Zone V (a Coastal High Hazard Area) or seaward of a line delineating the Limit of Moderate Wave Action (LiMWA) or Coastal Zone A (if designated), or if the building is to be dry floodproofed, the plans must be prepared and certified by a registered professional engineer or architect. Blank certificates for this purpose are available from the building official.

6. Following a Presidential disaster declaration, the Small Business Administration may make loans available for both home and business owners to bring buildings into compliance. Proof that your community determined the building incurred "substantial damage" is required.

BUILDING REPAIRS OR IMPROVEMENTS SUBJECT TO A DETERMINATION OF SUBSTANTIAL DAMAGE/ IMPROVEMENT

All structural elements including:

- Spread or continuous foundation footings and pilings
- Monolithic or other types of concrete slabs
- Bearing walls, tie beams and trusses
- Wood or reinforced concrete decking or roofing
- Floors and ceilings
- Attached decks and porches
- Interior partition walls
- Exterior wall finishes (e.g. brick, stucco or siding), including painting and decorative moldings
- Windows and doors
- Reshingling or retiling a roof
- Hardware
- Chimneys or flue pipes

All interior finish elements, including:

- Tiling, linoleum, stone or carpet over subflooring
- Bathroom tiling and fixtures
- Wall finishes (e.g. drywall, painting, stucco, plaster, paneling, marble or other decorative finishes)
- Kitchen, utility and bathroom cabinets
- Built-in bookcases, cabinets and furniture
- Hardware

All utility and service equipment, including:

- HVAC equipment
- Repaired or reconstructed plumbing and electrical services
- Light fixtures and ceiling fans
- Security systems
- Built-in kitchen appliances
- Central vacuum systems
- Water filtration, conditioning or recirculation systems
- Fireplaces, inserts, and wood heaters

Also:

- Labor and other costs associated with demolishing, removing, or altering the building
- Components
- Overhead and profit

SDE Residential Worksheet

Inspector Name _____

Inspection # _____ Photo # _____ Date _____

PROPERTY LOCATION

Latitude: _____ Longitude: _____

Street Address _____

City, State, Zip _____

County _____

STRUCTURE ATTRIBUTES

Residence Type:
- ◯ Single Family Residence
- ◯ Town or Row House
- ◯ Manufactured House

Foundation:
- ◯ Continuous Wall w/Slab
- ◯ Basement
- ◯ Crawlspace
- ◯ Piles
- ◯ Slab-on-Grade
- ◯ Piers & Posts

Superstructure:
- ◯ Stud-Framed
- ◯ Common Brick
- ◯ ICF
- ◯ Masonry

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

Exterior Finish:
- ◯ Siding or Stucco
- ◯ Brick Veneer
- ◯ EIFS
- ◯ None – common brick, structural

HVAC System:
- ◯ Heating and/or Cooling
- ◯ None

Story:
- ◯ One Story
- ◯ Two or more Stories

Quality:
- ◯ Low
- ◯ Budget
- ◯ Average
- ◯ Good
- ◯ Excellent

Year of Construction: _____

Date Damage Occurred: _/___/_____

Cause of Damage:
- ◯ Fire
- ◯ Flood
- ◯ Flood and Wind
- ◯ Seismic
- ◯ Wind
- ◯ Other

Duration of Flood: _____
- ◯ Hours
- ◯ Days

Depth of Flood Above Ground: _____

Depth of Flood Above 1st Floor: _____

1 inch	0.0833
2 inches	0.167
3 inches	0.250
4 inches	0.333
5 inches	0.417
6 inches	0.500
7 inches	0.583
8 inches	0.667
9 inches	0.750
10 inches	0.833
11 inches	0.917

DIAGRAM w/ MEASUREMENTS and NUMBER OF STORIES:

ELEMENT PERCENTAGES

Foundation	____%	Cabinets & Countertops	____%
Superstructure	____%	Floor Finish	____%
Roof Covering	____%	Plumbing	____%
Exterior Finish	____%	Electrical	____%
Interior Finish	____%	Appliances	____%
Doors and Windows	____%	HVAC	____%

Notes:

SDE Non-Residential Worksheet

Inspector Name _____

Inspection # _____ Photo # _____ Date _____

PROPERTY LOCATION

Latitude: _____ Longitude: _____

Street Address _____

City, State, Zip _____

County _____

STRUCTURE ATTRIBUTES

Story:
- ◯ One
- ◯ Two thru Four
- ◯ Five or more

Structure Use : Description: Apartments, Courthouse, Dept. Store, High School, Hospital, Industrial, Long-Term Care Facility, Motel, Municipal Building, Office Building or Police Station.

Sprinkler System: ◯ Yes ◯ No **Conveyance (Elevator/Escalator):** ◯ Yes ◯ No

Quality: ◯ Low ◯ Good ◯ Average ◯ Budget ◯ Excellent

Year of Construction: _____

Date Damage Occurred: _/_____/_____

Cause of Damage:
- ◯ Fire
- ◯ Flood
- ◯ Flood and Wind
- ◯ Seismic
- ◯ Wind
- ◯ Other

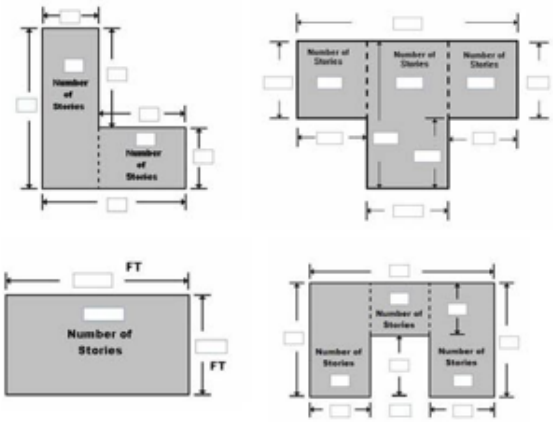
Duration of Flood: _____ ◯ Hours ◯ Days

Depth of Flood Above Ground: _____

Depth of Flood Above 1st Floor: _____

◯ No Physical Damage

DIAGRAM w/ MEASUREMENTS and NUMBER OF STORIES:



ELEMENT PERCENTAGES

Foundation	_____%	**Plumbing**	_____%
Superstructure	_____%	**Electrical**	_____%
Roof Covering	_____%	**HVAC**	_____%
Interiors	_____%		

MISC NOTES:

Sample language: Local Floodplain Management Ordinance – Substantial Damage Regulations

Substantial Damage Determinations

For applications for building permits to improve buildings and structures, including alterations, movement, enlargement, replacement, repair, change of occupancy, additions, rehabilitations, renovations, substantial improvements, repairs of substantial damage, and any other improvement of or work on such buildings and structures, the floodplain administrator, in coordination with the building official, shall:

1. Estimate the market value, or require the applicant to obtain an appraisal of the market value prepared by a qualified independent appraiser, of the building or structure before the start of construction of the proposed work; in the case of repair, the market value of the building or structure shall be the market value before the damage occurred and before any repairs are made;
2. Compare the cost to perform the improvement, the cost to repair a damaged building to its pre-damaged condition, or the combined costs of improvements and repairs, if applicable, to the market value of the building or structure;
3. Determine and document whether the proposed work constitutes substantial improvement or repair of substantial damage; and
4. Notify the applicant if it is determined that the work constitutes substantial improvement or repair of substantial damage and that compliance with the flood-resistant construction requirements of local building code and this ordinance is required.

Attachment 2:
SI/SD Background Documents and Standardized Procedures

FEMA

RiskMAP
Increasing Resilience Together

SUBSTANTIAL IMPROVEMENT/SUBSTANTIAL DAMAGE (SI/SD)

Substantial Damage Fundamentals

For communities participating in the National Flood Insurance Program (NFIP), structures located in the Special Flood Hazard Area (SFHA) that are substantially modified (either damaged or improved) more than 50 percent are required to comply with local building and floodplain requirements. Local community officials (typically floodplain administrators) are responsible for substantial damage and improvement (SI/SD) determinations. These determinations are required to be in compliance for participation in the NFIP.

This document is meant to serve as a quick resource for Substantial Improvement/Substantial Damage (SI/SD) requirements and opportunities. There is also a Guided Community Self- Assessment and Administrative Procedure Template that accompany this document.

1 	RECOGNIZING REGULATORY & LEGISLATIVE AUTHORITY	This section is for identifying what regulatory authority your community has and may need to complete the SI/SD process.
2 	COMMUNITY ENGAGEMENT & THE CURRENT STRUCTURE	You may already have structures in place for permitting and outreach; this section is to review what you have.
3 	DETERMINING IMPACT AREA	The purpose of this step is to think about what you will use as a base (maps, list of addresses in the floodplain, or otherwise) to figure out the extent of the impact.
4 	IDENTIFYING AVAILABLE PERSONNEL	This is a critical step to think through for any size disaster: who can manage the teams, complete the assessments, input the data, and analyze for consistency. Do they have the training and contracts in place to do so?
5 	DETERMINING TIMEFRAMES	Based on the people, training, and extent of damage, this section includes guidance about how to estimate how long the process will take and what thresholds you will use to maximize efficiency and get your residents information quickly.
6 	ESTABLISHING SUBSTANTIAL IMPROVEMENT/SUBSTANTIAL DAMAGE DETERMINATION PROCESS AND METHODOLOGY	Whether you use FEMA's Substantial Damage Estimator (SDE) Tool or some other process, this section is to look at how you can consistently set up and implement an SI/SD determination process in your community.
7 	COMMUNICATING DAMAGE TO PARTNERS (LOCAL/STATE/FEDERAL)	This section includes guidance on when and how your community will coordinate with Federal, State, and other local partners.
8 	COMMUNICATING SUBSTANTIAL IMPROVEMENT/SUBSTANTIAL DAMAGE INFORMATION TO PROPERTY OWNERS	It is important to identify how your community will communicate SI/SD information to property owners.
9 	MONITORING & REINTEGRATION	This is the last part of the "emergency permitting and development" process and includes guidance on how your community can return to the day-to-day after disaster support demobilizes.

OVERVIEW

When a structure in the SFHA is more than 50% modified (damaged and repaired or improved), the structure must be brought into compliance with NFIP requirements and local floodplain ordinance standards. Modifications can come after disasters such as floods or wildfires or they can happen when a structure undergoes general repairs or improvements. Any modification to a structure in the SFHA is an opportunity for structure owners and floodplain management programs to reduce future risk of flooding or otherwise.

How a community and FEMA assess the structure owner's compliance with these requirements is part of the process referred to as Substantial Improvement (SI) and Substantial Damage (SD). After a disaster, communities are required to complete damage assessments for structures in the SFHA. The goal of this document is to provide a brief overview to the SI/SD process, as well as the steps and resources that a community can use to conduct the SI/SD determination process.

In addition to decreasing long term flood risk, communities are required to execute the SI/SD process to remain in compliance with the minimum NFIP requirements. Within the NFIP, one of the primary mechanisms a community can use to ensure risk reduction is including an SI/SD provision in their floodplain management ordinance. According to this provision, when the cost to repair or improve a structure equals or exceeds 50 percent (or less, if specified by the community) of the structure's pre-damage value (market, assessed, or otherwise), the structure must be brought into compliance with current NFIP standards, local building codes, and other requirements. Additional information on the NFIP regulations can be found online: http://www.fema.gov/national-flood-insurance-program/laws-and-regulations.

Additional FEMA SI/SD documents that will be referenced throughout this SD Fundamentals document, the Guided Community Self-Assessment, and the Administrative Procedures Template include the following:

- FEMA 758: Substantial Improvement/Substantial Damage Desk Reference This Desk Reference provides practical guidance and suggested procedures to implement the NFIP requirements for SI/SD. It is the principal source of guidance for how to define and regulate SI/SD and provides detailed information about the inspection and determination process.
- FEMA 784 (The Substantial Damage Estimator Tool - 2017) FEMA developed the Substantial Damage Estimator (SDE) Tool to assist State and local officials in estimating SD for residential and non-residential structures in accordance with the requirements of the NFIP. The tool can be used to assess flood, wind, wildfire, seismic, and other forms of damage. It provides a standardized approach to data collection management and the determination of substantially damaged structures for local officials and helps communities provide timely SD determinations so that reconstruction can begin quickly following a disaster. This tool also includes template determination letters communities can utilize.
- National Incident Management System (NIMS)/Incident Command System (ICS) Resource Center For integrating SI/SD inspectors into the response and recovery operations, it is helpful to review ICS. In large events, this guidance can also assist the SI/SD field inspection lead in determining team structure.

1 RECOGNIZING REGULATORY & LEGISLATIVE AUTHORITY

As outlined in NFIP regulations, local officials are required to identify the limits of the SFHA, issue floodplain development permits for all development in the regulatory floodplain, and enforce SI/SD requirements for improvements and repairs of buildings. The process for ensuring that SI/SD structures are in compliance, or are brought into compliance, must be outlined and properly executed in a community's floodplain ordinance, building permit process, and anywhere else this information is formally captured. This will help ensure consistent and accurate information is provided to property owners, providers, volunteer agencies, local media, and elected officials during and after a disaster or incident.

Each community participating in the NFIP must formally document in the floodplain ordinance or otherwise the following:

- Communicate the floodplain management requirements clearly and uniformly to community members.
- Include a procedure for conducting SI/SD determinations that occur during and outside disasters or incidents.
- Include guidance for elected officials regarding their roles and responsibilities.

Following a disaster, a community may need to work with neighboring communities, counties, state, tribal authorities, and/or FEMA to identify what resources are needed and available. This coordination should be outlined in the SI/SD process.

The community is responsible for making SI/ SD determinations and notifying impacted property owners about those determinations, but a community also has the authority to delegate SI/SD responsibilities if in-house resources are not available. Memorandums of Understanding can be established with neighboring communities to step in and help after a disaster, third party contractors can be hired on an emergency, as-needed basis, and in the event of a large scale disaster, FEMA damage assessment teams may be asked to respond to local requests to assess the extent of disaster-caused damage to some structures.

By determining the SI/SD process before an event that requires Federal assistance, a community can work with FEMA through the State NFIP Coordinator and State Insurance Administration to determine staffing and technical needs that are available at the Federal level. When possible, FEMA may conduct a needs assessment prior to a disaster or event. This allows FEMA to understand a community's capabilities and challenges in advance of the formal requests for assistance. To conduct a needs assessment, FEMA typically works in concert with the community to identify critical gaps and potential areas for FEMA support.

It is important remember that Federal disaster assistance is available only after flood or other events have been declared a major disaster by the President through a Disaster Declaration. FEMA is available to advise local officials responsible for administering floodplain management regulations and can help assess NFIP compliance, but it is the community's responsibility to enforce the SI/SD process and NFIP regulations to ensure property owners are able to receive the assistance they need.

PRO-TIP: Communities providing SI/ SD determinations should complete the process as efficiently and effectively as possible so that property owners may receive information in a timely manner. Property owners want to return to normal as quickly as possible and may be frustrated when guidance is delayed or unclear.

2 COMMUNITY ENGAGEMENT & THE CURRENT STRUCTURE

Timely inspection and data collection are critical to facilitate recovery from a disaster. Communities should have a plan and procedure in place, outlined in existing floodplain ordinance standards, for identifying structures within their regulatory floodplain and monitoring development activities within the regulatory floodplain. Your community most likely has a structure in place for permitting and outreach. Responsible parties should revisit the community's current structure to make sure it is taking SI/SD into account. A critical component of the current structure is ensuring pre-disaster messaging is clear about post-disaster operations.

Most property owners understand that building permits are required when they want to have work done on their structures. However, they are rarely aware of the requirements that apply when buildings are located in SFHA. Informing the public about the requirements may alleviate some of the difficulties that can occur when uninformed owners invest in repairs or improvements, especially immediately following a disaster. Successful outreach methods employed by communities include:

- Permit staff and inspectors are trained and familiar with the SI/SD requirements and other requirements for development in the SFHA and they convey consistent, unified messaging when talking with property owners and contractors.
- Permit application forms or supplements to applications are designed specifically to capture information about work proposed for buildings in the SFHA.
- Information is posted online about permit requirements, including SI/SD requirements in the SFHA.
- Newsletters and brochures are used for periodic mailings, such as those described in guidance materials developed for the NFIP's Community Rating System.

The SI/SD team lead should be aware that an influx of permits may be requested following an event or disaster if a large number of structure owners were affected. The permit process does not stop after a disaster - it should be enforced just as carefully as pre-disaster to ensure homes are rebuilt in a way that decreases future risk.

Encountering structure owners or occupants is common during inspections. Even if property owners become familiar with a community's permitting process, they will be curious or possibly suspicious of the inspection objectives. Therefore, the inspector should set guidelines for interactions with residents and structure occupants. The SI/SD Manager should develop a written set of guidelines for contact with owners or occupants, review it with the inspectors prior to the start of inspections, and provide a hard copy of the guidelines to each team of inspectors.

PRO-TIP: Incorporate creative solutions in your community's SI/SD plan to better lend a hand for community members that have been affected by a disaster. For example, set up a permit tent in an heavily affected area within the SFHA post-disaster. This could alleviate one more headache for homeowners (who want to begin rebuilding their homes) by eliminating the need to travel to City Hall to request a permit. This approach also puts permit staff and inspectors nearby to monitor the work being done after a disaster.

3 DETERMINING IMPACT AREA

Knowing the area that will need to be evaluated prior to an event will make execution of the SI/SD process much quicker. For planning and evaluating purposes, communities often identify the damaged areas using property-specific information such as address or tax parcel information. The SI/SD process must be considered for any properties in the Special Flood Hazard Area (SFHA) to comply with the NFIP. Some communities have higher standards and may require properties that are close enough to the SFHA boundaries to follow similar procedures.

Determine the approximate percentage of damaged structures.

A preliminary evaluation of several representative structures may be necessary to determine the average interior flood depth and extent of damage to structures in that area. Evaluating the damage to structures before they are inspected allows communities to determine where inspection resources are needed most. This initial screening of structures is based on the following criteria:

- Structures damaged between 50 and 100 percent are considered substantially damaged and are required to be brought into compliance with both the local building code and the local floodplain development regulations.
- Structures damaged between 0 and 49 percent will not be subject to rebuilding requirements triggered by an SI/SD determination.
- Structures that are not substantially damaged are still subject to all repair and replacement requirements of the local building code.

Depending on the size of the event, community officials will undertake an initial "windshield survey" of the damage after a disaster. A community will be able to see approximately where the impacted structures are based on the preliminary damage assessment results. The initial Preliminary Damage Assessment is usually a precursor to a decision regarding whether to seek a declaration of the event as a major disaster. The SI/SD Manager may be able to use the PDA data to refine impact area and determine where in the SFHA resources should be devoted to further assessing substantially damaged structures.

4 IDENTIFYING AVAILABLE PERSONNEL

It is important to select an SI/SD Manager who is familiar with the community. The manager may be a local floodplain management official, chief building inspector, head of the permitting department, or other staff member.

To determine the number of inspection teams needed for data collection, the SI/SD Manager must estimate the size of the inventory, the number of inspections a team can complete per day, and the target date for completion of the fieldwork. The SI/SD manager must also keep in mind that staff allocated to the SI/SD team may have been affected by the disaster and should use sensitivity in assuming affected individual's availability.

If local staffing resources are insufficient to complete the required number of inspections by a specific date, the SI/SD Manager should obtain additional staff from neighboring communities or extend the completion date.

PRO-TIP: If staff resources allow, inspectors with damage assessment or construction experience should be paired with less experienced staff. Staff should be physically able to navigate from structure to structure and be able to make the assessments necessary for the SI/SD evaluation.

The SI/SD Manager should identify the local resources that will be needed to collect field data and prepare SI/SD determinations.

Identifying available resources includes:

- Designating the SI/SD inspection, non-field SI/SD data, and Quality Assurance review leads.
- Identifying the points-of-contact for police and local officials.
- Reviewing Flood Insurance Rate Maps and other maps for floodplain boundary, street, and structure locations.
- Compiling tax data (if available) and reviewing how to use it with the inspectors.

It may be necessary to provide training to staff on SI/SD plans and procedures. Training should be scheduled on a regular occurrence to account for any overturn in staff that may occur. Regularly providing training to SI/SD team members will also allow a community to evaluate the standards and procedures that are in place. Training is great for new recruits, but is also a way to reflect on what could be made better thanks to input from those with experience. There may be tweaks or changes to SI/SD procedures after staff have been through the SI/SD determination process due to a recent event or disaster.

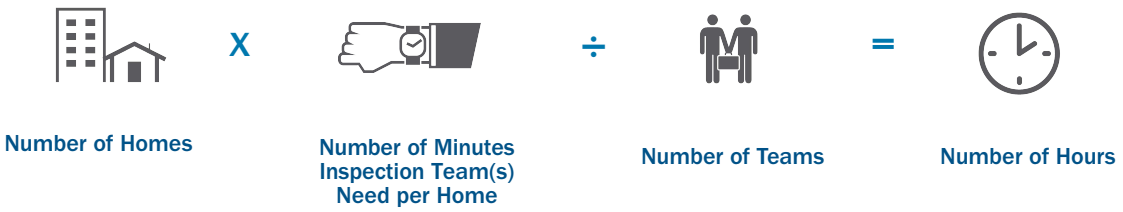
5 DETERMINING TIMEFRAMES

Local officials should initiate evaluations for SI/SD determinations as soon as possible after the disaster, and no later than 2 weeks after the disaster to ensure structure owners understand the procedures of SI/SD before they take action to rebuild or repair their structure. If this is not possible, officials need to alert structure owners in the impacted areas that permits must be obtained and SI/SD determinations must be made before repairs or reconstruction can begin. It may also be worthwhile to meet with the tax assessor as soon as possible to discuss the SI/SD data needs and determine time frames and level of involvement for data sharing.

Calculate the number of days it will take to collect the data based on the number of structures to inspect and the number of available inspectors. The inspection rate for non-residential structures is likely to vary depending on the size of the structures and the complexity of the structure.

PRO-TIP: A general estimate for the number of residential inspections per two-person team per day is 20 to 35 for areas where the inspectors can walk between structures.

It may be helpful to develop an equation to estimate how long it will take to conduct SI/SD determinations. A sample equation is included below:



Keep in mind that this simple equation does not take into account the specifics of your community - how many staff members will you have available per team, how large are the properties in your community and how long will it take to travel between properties, are properties still accessible after the disaster, etc. There are some of variables that may alter the results of this equation.

The initial screening should also identify areas that may either need to be prioritized later or require coordiarnation and approval for entrance into the area. Areas such as gated communities, industrial sites, schools, or State or Federal facilities will require advanced notice, coordination, and approval before the inspections can be started.

6 ESTABLISHING SUBSTANTIAL IMPROVEMENT/SUBSTANTIAL DAMAGE DETERMINATION PROCESS AND METHODOLOGY

Before the SI/SD inspections are conducted, planning for the inspections will help ensure that they are effective and conducted as efficiently as possible. The five steps involved in SI/SD inspection planning are as follows:

STEP 1: SELECT AN SI/SD MANAGER

The community should designate an SI/SD Manager before SI/SD data collection is initiated. The SI/SD Manager's seven key responsibilities are to:

- Identify available resources.
- Notify elected officials and community departments including fire, police, and emergency services, planning, and building code of the upcoming fieldwork.
- Plan the SI/SD field inspections.
- Organize and train the inspectors.
- Supervise field operations.
- Ensure follow-up coordination with structure owners is completed.
- Coordinate final storage of SI/SD files.

STEP 2: IDENTIFY GENERAL LIMITS AND SCOPE OF THE IMPACTED AREA

Delineate the general limits of the impacted area on a community map that has address information, tax parcel or property boundaries. Determine the appropriate teams that will work on SI/SD determinations and the required timeline to do so during and after a disaster. The SI/SD team should compare the impacted area with a community's SFHA. SI/SD standards are only required in the floodplain, unless a community has adopted higher standards.

STEP 3: PERFORM AN INITIAL SCREENING OF STRUCTURES IN THE IMPACTED AREA

The data collected in the initial screening will help define the scope of the field inspection and the number of days that are needed to complete the SI/SD inventory:

- Collect information about the natural hazard – duration and level of impact.
- Perform a curbside screening of damaged structures – number of structures and the percentage of damage.
- Determine whether representative inspections are appropriate – similar environment and structure type.
- Refine delineation of the SI/SD inventory area(s) – based on inventory results.

The local standards must be applied uniformly to all structures within a jurisdiction. Local officials determine if a building in their jurisdiction has been substantially damaged. FEMA damage assessment teams may be asked to respond to local requests to assess the extent of disaster-caused damage to structures. When FEMA assists communities in the collection of structure damage data to make an SI/SD determination, it is important to note that the data do not constitute a determination. FEMA provides the results to local jurisdictions. Communities are responsible for making SI/SD determinations (based on their own ordinances) and sharing that determination with the structure owner.

STEP 4: DEFINE STANDARDS TO DETERMINING SUBSTANTIALLY DAMAGED STRUCTURES

It is important to outline and document the process being used to identify substantially damaged structures during and after an event. With various staff members, third party vendors, and potentially volunteers, being delegated to assess damaged structures throughout the inventory area, detailed guidelines should be given to ensure consistency.

Here are a few considerations your community should reflect on while defining SI/SD standards:

- How will SI/SD team members be identified and trained?
- How soon after a disaster will teams be sent into the field to make substantial damage determinations?
- Will properties be assessed for substantial damage using value-added tax rate or market rate?
- If a structure is determined to be over 60 percent damaged and requires condemnation, how will the community enforce this?
- Structures that are less than 40 percent damaged and more than 60 percent damaged may be more easily identified by the SI/SD team. How will your team determine the less obvious 40 percent to 60 percent damaged structures?
- How will your community define restoration of a damaged building to its pre-damage condition as substantial improvement?
- How will your SI/SD team coordinate with property owners during an initial "windshield survey" if inspectors are unwanted on private property?

STEP 5: FINALIZE PLANNING

A well-planned data collection effort will increase the efficiency of the inspectors while ensuring the accuracy and consistency of the data. These four tasks should be followed to ensure that the data collection is accurate and complete:

Task 1. Determine whether the inspectors will utilize the SI/SD tool or SI/SD worksheets.

Task 2. Divide inspection areas among the teams and plan the approximate sequence of inspections.

Task 3. Prepare guidance and any training materials.

Task 4. Identify all tools and resources that are needed and assign someone to begin collecting.

7 COMMUNICATING DAMAGE TO PARTNERS (LOCAL/STATE/FEDERAL)

Communities that have extensive floodplains and significant numbers of flood-prone structures are encouraged to plan ahead to handle the workload. Thresholds should be set by the community to help determine when to enlist outside help.

Even with good planning, support may be necessary to handle large numbers of damage inspections and permit applications. In addition to support from the State and FEMA, resources may be available from other communities, State floodplain management associations, State building code associations, and organizations that represent engineers and architects. Some States and communities develop mutual aid agreements, inter-local agreements, or other mechanisms to facilitate this post-disaster support.

The SI/SD process begins and ends at the local level. While help may be offered to perform inspections and gather data, perhaps using the FEMA SDE, making final SI/SD determinations and permit decisions remain the responsibility of local officials in affected communities.

FEMA mitigation experts continue to coordinate with local State and local officials, especially floodplain managers, to provide detailed information and expert advice on repairing and rebuilding damaged homes in the floodplain. Bringing homes and businesses into compliance with local floodplain ordinances is not only required but may reduce individual flood insurance premiums.

8 COMMUNICATING SI/SD INFORMATION TO PROPERTY OWNERS

Communities must be prepared to explain to property owners how they make SI/SD determinations. Local officials should develop written procedures that can help them make and document consistent determinations and improve efficiency.

An official determination from a community serves as the catalyst for a broad range of mitigation programs and actions including the following:

- Requirement to bring a building into compliance.
- Insurance rating adjustment.
- Increased Cost of Compliance (ICC) coverage under the NFIP.

Posted signs, fliers, notices on damaged structures, press releases, and letters mailed to property owners can all be used to provide information on local floodplain ordinance and SI/SD requirements. The building inspector or local official should educate themselves on the damage assessment process, reconstruction methods, and available mitigation programs.

Officials should be aware that not every property or structure owner is going to be happy with a SI/SD determination. An owner may appeal the local official's finding or determination that the proposed work constitutes SI/SD. The owner may appeal an SI/SD determination on the basis of insufficient information, errors, repair/improvement costs that should be included/excluded, inappropriate valuations of costs for the proposed work, or an inappropriate method to determine the market value of the building.

Outreach regarding SI/SD *before* an event happens can help to reduce the number of appeals. Local officials should work to inform homeowners, who are located within the community's SFHA, that SI/SD determinations will apply to them. A process should be in place to communicate the permit process and inform structure owners that any and all improvements made to their structure counts towards the percentage of substantial modification. Once they hit the 50% mark, they will be required to comply with local building and floodplain requirements. Providing this information pre-disaster can help reduce confusion and frustration post-disaster.

The ultimate goal is to reduce risk to life and property. Determining a strong SI/SD process can help to reduce risk before an event happens. A great window of opportunity to ensure that flood damages do not occur again is after a flood. Federal or State mitigation programs may be available and there are experts on mitigation who can discuss recovery options and funding programs. Public meetings can be arranged to introduce impacted communities to all the options that are available.

9 MONITORING AND REINTEGRATION

Consistent record keeping and enforcement of SI/SD requirements is crucial. It is the community's responsibility to maintain records of issued permits, elevation data, inspections, and enforcement actions. If a property or structure owner is in violation of any SI/SD requirements, action should be to enforce ordinance codes and standards. The NFIP expects communities to attempt all reasonable actions to bring violations into compliance. When such attempts are unsuccessful, the community should contact the NFIP State Coordinator or the FEMA Regional Office for advice.

Once SI/SD determinations are made and communicated, and the appeals are complete, the community may be able to return to their standard permitting and ordinance procedures. FEMA will continue to work with the community on SI/SD activities to determine ongoing compliance with the NFIP.

Now that your community is back to pre-disaster operations, it is a good time to go back to Section 2 and re-evaluate your current structure. What worked? What could use some fine -tuning? Preparing now can help to reduce risk in the future.

FEMA

RiskMAP
Increasing Resilience Together

SUBSTANTIAL IMPROVEMENT/SUBSTANTIAL DAMAGE (SI/SD)

Administrative Procedures

The purpose of this document is to outline how {Name of Community} will administer and implement steps to fulfill the Substantial Improvement/ Substantial Damage (SI/SD) requirements.

HELPFUL HINTS FOR COMPLETING THE TEMPLATE

1. RECOGNIZING REGULATORY AND LEGISLATIVE AUTHORITY

A. Location of SI/SD Regulatory Language

Substantial Improvement/Substantial Damage (SI/SD) procedures in {Name of Community} are established and regulated as per {Name of Community}'s

_____
_____.

Other applicable authority is established through _____ _____
_____.

Additionally, SI/SD procedures and other information pertaining to the SI/SD can be found in {Name of Community}'s _____
_____
_____.

Your community identified its existing authority to establish an SI/SD process. Examples include your floodplain management ordinance, zoning/land use ordinance, and/or building codes.

See page 3 of the Guided Community Self-Assessment.

B. Ancillary SI/SD Authorities

{Name of Community} has established the following agreements that enable {Name of Community} to access external SI/SD resources in the event additional assistance is required:

- _____
- _____
- _____

Examples of these agreements include MOUs, Volunteer Contracts, State Emergency Management Assistance Compact.

See page 4 of the Guided Community Self-Assessment.

2. COMMUNITY ENGAGEMENT AND THE CURRENT STRUCTURE

A. Communication Methods

The following communication methods are employed pre- and/or post-event to communicate permitting and process information to the public:

- _____
- _____
- _____
- _____
- _____

Use the communication resources your community identified in the Guided Community Self-Assessment.

See page 6.

List where communication methods are documented, e.g., your Emergency Operations Plan, and identify your timeline for evaluating those methods.

B. Communication Pre-Event

Outreach information provided pre-event includes: _____
_____
_____.

C. Communication Post-Event

SI/SD information provided in post-event communication includes:_____
_____
_____.

D. Communication Process Location

The application of the above-listed methods in communicating SI/SD information is documented in _____
_____.

E. Effectiveness of Communication Process Implementation

The effectiveness of the above-listed methods is evaluated _____
_____.

HELPFUL HINTS FOR COMPLETING THE TEMPLATE

Consider what information you have already developed that could apply to SI/SD.

Consider how you would tailor the outreach post-disaster. For instance if the power is out, door knockers may be more useful than website updates.

Consider how your communication process will be evaluated, timeframe for review, and where it is documented.

3. DETERMINING IMPACT AREA

Immediately after an event, community officials will undertake an initial review of the extent of damage including a broad characterization of the number of buildings impacted and the level of anticipated damage.

In some cases, the initial survey is followed by an official Preliminary Damage Assessment (PDA) coordinated by the local emergency manager and performed by teams (may include representatives from local building officials, floodplain managers, and if there is a large enough impact, the State and/or FEMA as well). {Name of Community} will use the results of the PDA to help identify significant damage and coordinate SI/SD inspections.

List the available resource(s) to be used and the party(ies) responsible for the resource(s).

See page 8 of the Guided Community Self-Assessment.

A. Extent of Impacted Areas

To determine the extent of the impact area, {Name of Community} will use _____
_____
_____.

Please keep in mind the area surveyed for PDAs may be different from the structures impacted in the SFHA.

B. Resources to Make Extent Determination

This _____(map/table/other)
is available at _____ _____(location)
and updated by _____(position/department).

Emergency “just-in-time” training for the use of the resource(s) identified will be provided as needed. See section 4 for further information on personnel training.

The following steps outline how the resource(s) identified will be used to determine the impact area:

HELPFUL HINTS FOR COMPLETING THE TEMPLATE

In the box, include a detailed explanation of how your community will use its identified resources to determine the impact area.

Under the NFIP guidance for SI/SD determinations, only properties with boundaries that overlap with the Special Flood Hazard Area are required for inspection. {Name of Community} will estimate the number of damaged structures using the following steps:

During the initial post-event "windshield review" and when determining the impact area, your community should also determine the approximate percentage of damaged structures in the Special Flood Hazard Area.

In the box, include a detailed explanation of how your community will estimate this percentage.

It is also important to identify properties in the SFHA as they may have additional requirements and opportunities.

Remember, if your community has higher standard, the requirements may extend beyond the SFHA.

4. IDENTIFYING AVAILABLE PERSONNEL

People

Based on training and availability during an emergency, {Name of Community} will utilize the following staff and/or departments to conduct damage assessments:

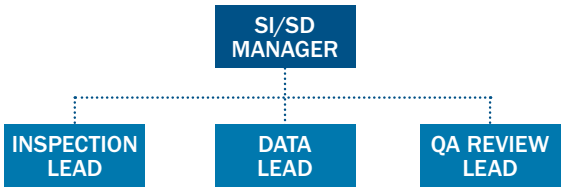
- _____
- _____
- _____
- _____

The SI/SD team comprises the following positions and associated responsibilities:

- _____
- _____
- _____
- _____

The following chart defines the {Name of Community}'s scalable organizational structure for the SI/SD team.

Sample Organizational Chart:



HELPFUL HINTS FOR COMPLETING THE TEMPLATE

List all staff and/or departments identified to complete damage assessments.

List all SI/SD team positions, assigned staff, and each position's responsibilities.

As part of the Guided Community Self-Assessment, your community identified these roles and responsibilities. *See page 11.*

In the box, capture your community's SI/SD organizational structure. Please note, this may be different than your day to day structure.

This can be the organizational chart as referenced on page 13 of the Guided Community Self-Assessment.

As part of {Name of Community}'s agreement(s) identified in section 1 of this procedure document, {Name of Community} will also utilize available personnel from outside resources to conduct damage assessments as needed. These individuals/agencies will be included in the organizational chart here.

HELPFUL HINTS FOR COMPLETING THE TEMPLATE

In the box, identify where third party contractors and other resources would plug into your community's SI/ SD organizational chart. For instance, will the contractors be split by role? Or perhaps all report to the SI/ SD Manager?

- {Name of Community} will utilize outside resources as provided through these agreements when an event impacts_____ _____ or if_____ _____ of {Name of Community}'s available staff are impacted by the disaster.

Define your community's thresholds for requesting external resources and assistance.

- Should an event impact_____ _____, {Name of Community} will request additional external support beyond existing agreements.
- *The equation developed in section 6 to determine the timeframe to complete the assessments influences these thresholds.*

Training

{Name of Community} will ensure that all internal and external personnel involved in the SI/SD process who require emergency "just-in-time" training will receive such training according to the following plan:

The process/procedure for getting these resources trained is documented in

_____.

The position/department responsible for updating the training documentation is

_____.

HELPFUL HINTS FOR COMPLETING THE TEMPLATE

In the box, identify how your community will provide emergency training when needed.

This may include a list of personnel and/or positions/roles and what training is required. For instance, some communities find that augmenting permitting staff would require more training than can be provided "just-in-time," while conducting SI/SD assessment training can be completed relatively quickly with the right materials.

If your personnel do not have the training, please include information on how you will bridge that gap. Please also consider what training the "just-in-time" trainers may need.

5. DETERMINING TIMEFRAMES

{Name of Community} will use the following inputs to estimate level of effort and duration. The process to estimate will be_____
_____
_____
_____.

{Name of Community} will calculate the time it will take to conduct SI/SD assessments using a variation on the below equation:

The position/department responsible for estimating this will be _____
_____.

For each structure type to be assessed, {Name of Community} will determine the amount of time necessary for completing all SI/SD assessments.

A. Threshold for Requesting Assistance

In addition to accounting for varying conditions related to structure types and land use patterns, when estimating timeframes, {Name of Community} will identify other obstacles that may prevent the timely completion of assessments, such as areas with heavy debris blocking access or gated communities.

If the timeline calculated using the equation identified above estimates that SI/SD assessment cannot be completed within _____ _____
_____, {Name of Community} will request external resources.

HELPFUL HINTS FOR COMPLETING THE TEMPLATE

As an example for the equation to the left, if a community has 200 damaged structures in the SFHA, and each takes 15 minutes to assess and 15 minutes to get to the next structure, and there are only 3 teams, the SI/ SD assessment would likely take 30- 35 hours.

Your community may find a different equation is preferable based on the data you will have available.

Calculating timeframes will vary by available staffing. Your community should revisit section 3 and consider any external resources and the time to get those resources activated when estimating timeframes.

Remember, most rebuilding work begins within the first seven days after an event!

6. ESTABLISHING A SUBSTANTIAL IMPROVEMENT/SUBSTANTIAL DAMAGE DETERMINATION PROCESS AND METHODOLOGY

Structures damaged between 50 and 100 percent are considered substantially damaged and are required to be brought into compliance with both the local building code and the local floodplain development regulations. A structure that is damaged to 55 percent (e.g., of its market value) is not treated differently than a structure that is 90 percent damaged in terms of floodplain development regulations. {Name of Community} will determine these percentages based on

_____

_____.

Preliminary Structure Determinations: Screening and Categorizing (All Damaged Structures)

A. Timeframe

{Name of Community} will conduct preliminary structure evaluations within _____

_____.

{Name of Community} will conduct preliminary structure evaluations to classify damaged structures into the following categories: 0 to 40 percent damaged, 40 to 60 percent damaged, and 60 percent or more damaged. This initial classification of damaged structures is based on the following criteria:

B. Initial Screening

This initial screening of the structures in an area(s) is based on the following criteria: _____.

After the preliminary evaluations, {Name of Community} will refine the delineation of the impact area and differentiate areas with structures that are between 40 and 60 percent damaged.

HELPFUL HINTS FOR COMPLETING THE TEMPLATE

How will your community determine these percentages? For example, will they be based on market value, tax assessed value, or otherwise.

Define the timeframe within which preliminary structure evaluations are conducted.

To classify damaged structures, community-defined indicators can be utilized. For example, some communities use high water marks to estimate damage in certain neighborhoods.

Identify the threshold percentage(s) your community will apply when determining where to conduct further assessments.

For example, "between 40 and 60% damaged."

C. Assigned Structures to Damage Percentage Categories

Zero to 40% Damaged

For structures that are less than 40 percent damaged, the process will be _____.

Greater than 60% Damaged

For structures identified as more than 60 percent damaged, the process will be _____.

Damaged 40%- 60%

For structures that are more likely to be controversial in the 40-60 percent damaged, the process will be _____.

HELPFUL HINTS FOR COMPLETING THE TEMPLATE

Some communities choose to conduct more detailed assessments for structures in the 40-60% (or even 30- 70%) damaged window to make sure the process is applied consistently.

Conducting Determinations (Structures Damaged 40-60%)

To conduct SI/SD assessments for structures damaged between 40 and 60 percent, {Name of Community} will utilize _____ _____.

The process is outlined as follows:

Identify tools and methodology your community will use to conduct assessments.

Refer to page 19 of the Guided Community Self-Assessment.

{Name of Community} will utilize the following data to conduct SI/SD assessments:

- _____
- _____
- _____
- _____

List the data item and source.

Refer to the list your community developed on page 20 of the Guided Community Self-Assessment.

7. COMMUNICATING DAMAGE TO PARTNERS (Local/State/Federal)

State Communications

A. Position Responsible

The position responsible for communicating SI/SD information to State partners is _____.

B. State Partnering Agencies

State partners include:

- _____
- _____
- _____
- _____

C. Communication Method

As determined in section 4, and based on the equation developed in section 6, State partners will be contacted if _____ _____.

D. Timeframe for Response to Support Request

In agreement with State guidance, State partners will be available to deploy and/or arrive within _____ hours/days.

Federal Communications

A. Position Responsible

The position responsible for communicating SI/SD information to Federal partners is _____.

B. Federal Partnering Agencies

Federal partners include:

- _____
- _____
- _____
- _____

C. Communication Method

As determined in section 4, and based on the equation developed in section 6, Federal partners will be contacted if_____ _____.

D. Timeframe for Response to Support Request

In agreement with Federal guidance for your region, Federal partners will be available to deploy and/or arrive within _____ hours/days.

HELPFUL HINTS FOR COMPLETING THE TEMPLATE

It may be helpful to develop a similar section for community to county communications, if that applies to your jurisdiction.

See page 22 of the Guided Community Self-Assessment for partners your community has identified.

Identify the circumstances through which State partners will be contacted.

Identify the circumstances through which Federal partners will be contacted.

Remember, federal partners may not be authorized to deploy until a Federal Disaster Declaration is issued.

8. COMMUNICATING SUBSTANTIAL IMPROVEMENT/SUBSTANTIAL DAMAGE INFORMATION TO STRUCTURE OWNERS

A. Determine Timeframe

Residents will be notified of the SI/SD determination within _____ _____of an SI/SD assessment as per the detailed process identified in section 5.

B. Determine Delivery Method

{Name of Community} will use the following means of communication for notifying structure owners of SI/SD determinations and the appeal process:

- _____
- _____
- _____
- _____

Appeals

A. Location of Appeals Language

The SI/SD appeals process is documented in {Name of Community}'s _____.

B. Appeals Review Body

{Name of Community}'s appeals process allows for structure owners to voice dissent and potentially change the process. The community will also work to ensure SI/SI determinations are accurate, consistent, and defensible. The process includes:

HELPFUL HINTS FOR COMPLETING THE TEMPLATE

See page 23 of the Guided Community Self-Assessment for the information your community collected on post-disaster outreach and the appeals process.

Identify the timeframe within which structure owners are notified of SI/SD determinations.

Identify the document that establishes your community's appeals process. List all requirements of the process in the box.

The following methods of determination are recognized as valid and legally sound:

- _____
- _____
- _____
- _____

The outcome of any appeal will be documented in _____
_____.

HELPFUL HINTS FOR COMPLETING THE TEMPLATE

Include the document(s) wherein which your community records appeals decisions.

9. MONITORING AND REINTEGRATION

Any external resources requested will be demobilized and the continuity of the SI/SD process will be maintained based on the following:

{Name of Community} will integrate SI/SD follow-up into the regular permitting and appeals process based on the following:

Federal Emergency Management Agency
Region VII
2323 Grand Boulevard, Suite 900
Kansas City, Missouri 64108-2670

MODEL GUIDE FOR DEVELOPING A POST-FLOOD DAMAGE STANDARD OPERATING PROCEDURE

INTRODUCTION

Your community has sustained a flooding disaster. What actions need to be taken? Many items need to be addressed during the critical first 72 hours, but after the immediate emergency needs are met, what floodplain management items need to be accomplished?

The biggest task facing the floodplain manager after the flood is making sure any post-disaster reconstruction is done in compliance with the community's floodplain management ordinance. These construction requirements apply to all structures located in the100-year floodplain. If the disaster event is large in scope, the demand for issuing the floodplain development permits will be tremendous. Communities that have limited staff resources are quickly overwhelmed.

Post-disaster reconstruction efforts are the top priority for most flood-impacted property owners. This is the critical time when community officials need to be especially aware of the extent of damage and types of repairs to be made. The National Flood Insurance Program (NFIP) requires participating communities to adopt ordinance provisions regulating construction and reconstruction in the 100-year floodplain.

Two of these provisions become very important during post-disaster reconstruction: substantial-damage and substantial-improvement. Local floodplain management ordinances require structures damaged 50 percent or more to meet all of the floodplain construction requirements. Usually this means the structure must be elevated or floodproofed (nonresidential structures only) to or above the 100-year base flood elevation. Some communities also have additional height elevation and/or floodproofing requirements.

One way to reduce the pressure on the local community officials is to develop a standard operating procedure (SOP) for conducting a post-disaster damage survey. The damage survey is a post-disaster task that must be accomplished as soon as possible in the recovery effort. Ideally, the community's overall emergency SOP also includes other emergency response and recovery issues. This guide is developed to assist communities in formulating a post-flood damage SOP. Since the damage survey is only one process during a post-disaster recovery, other functions or tasks are discussed briefly.

WHAT DO THE COMMUNITY PERMITTING OFFICIALS NEED TO KNOW?

Basically, the community permitting officials need to know:

- How far did the water get into the community and its structures?
- How deep was the water?
- How long did the water remain in the structures?

By answering these three questions, the community will have a fairly good preliminary feel for where the heaviest damage occurred. Major damage areas can be identified for priority survey and inspection efforts.

The best way to develop post-disaster documentation is to conduct a damage survey. By conducting a damage survey, the community will be able to determine the overall impact of the disaster, the extent of damage to specific structures, and establish documentation for issuance of floodplain development permits in compliance with the community's floodplain management ordinance. A damage survey can also be used by community officials to determine the need for additional resources to address the post-flood needs and the scope of the rebuilding effort.

This guide was written to outline suggested tasks to assist the community in preparing for a flood disaster. While the primary focus of the guide is the post-flood damage survey, a review of pre-flood planning and disaster response concerns relating to the damage survey are included. The sections are divided into pre-flood, during the flood, and post-flood to focus on the timing of the task. This guide is not intended to be all inclusive or meet all of the unique needs of each community. It should be used as a starting point for community-specific operating procedures.

PRE-FLOOD PLANNING TASKS

Routine daily tasks frequently capture all of the working time of local community officials. When disaster strikes, no time has been devoted to developing a standard operating procedure (SOP) and the community officials and staff become overwhelmed. If the community leaders recognize the advantage in pre-disaster planning and actually develop an SOP, disaster impacts can be lessened. The following pre-flood tasks are presented for consideration.

1) **Review your community's Flood Insurance Rate Maps and Flood Hazard Boundary Maps or the Flood Insurance Study and Flood Boundary and Floodway maps**
   - Become familiar with where the floodplain boundaries lie in the community
   - Identify potential impact areas

2) **Develop a floodplain structure data base**
   - Compare the community's property ownership maps to its floodplain maps
   - Develop a comprehensive listing of all structures located in the floodplain. At a minimum, the list should include:
     - Property owner information [name, address, and telephone number]
     - Assessed valuation or fair market value and the 50% threshold figure

[Pre-flood Planning Tasks – continued]

- Any existing information for each structure such as lowest floor elevation, date of construction, etc.
- Base flood elevation for each structure

This will serve as the data base for conducting any post-flood damage survey. Floodplain structures can be pre-identified to ensure compliant permitting under the community's floodplain management ordinance.

3) **Develop, discuss, and widely distribute to community officials and staff the emergency procedures to be put in place once a disaster is underway**
   - Establish an emergency chain-of-command and publicize it
   - Develop standard reporting procedures
   - Develop administrative policies that will become effective during the disaster recovery phase such as:
     - Combination of other health and safety officials as part of the inspection teams to limit exposure to special hazards
     - Establish conditions for declaring hazardous damaged buildings as public nuisances. [This may require an emergency ordinance.]
     - Refuse repair permits when property located in the floodplain is damaged more than 50% of its value
     - Overtime policies for inspectors
     - Requiring the owner's or representative's presence during inspections
     - Operating procedures should be in place before they are needed and should be understood and followed by everyone participating in the response/recovery effort.
   - Secure access to communication equipment, transportation support, and supplies to accomplish tasks
   - Establish the general damage categories that each building will be evaluated against
   - Coordinate with emergency service providers [police, fire, and health] to determine availability and extent of involvement
   - Determine utility safeguard procedures and secure agreements with local public utility service providers. Work with utility companies to delay power restoration until the community has inspected the structure.
   - Develop specific criteria for estimating the percent of damage to a building
   - Consider a temporary community-approved moratorium on the issuance of floodplain development permits, if required, to allow community personnel to complete the damage survey. This moratorium should only be temporary [30-60 days]. Emergency and critical facilities (hospitals, water and power plants, fire stations, etc.) cannot be included in the moratorium.
   - Research where additional building inspectors and other staff resources needed for floodplain development permit review and on-going inspections of buildings can be found

[Pre-flood Planning Tasks – continued]

- Determine where the engineering expertise to deal with structural engineering problems will be secured
- Develop inspection review sheets, reporting sheets, etc.
- Develop inspection team responsibilities and procedures
- Develop public service announcements

DURING THE FLOOD

While the disaster is actually unfolding, many community officials are involved in addressing the immediate flood protection needs of its residents. Well-planned SOPs can reduce the level of confusion and actually enable the community to anticipate needs. Limited staff will be available during this time. To reduce the potential for noncompliant post-flood reconstruction, the following items are suggested.

1) **Control access to flood-impacted areas**
   - Barricade areas of concentrated flooding need and control entry

2) **Conduct preliminary broad-scope disaster surveys (floodplain manager)**
   - View the flood-impacted area and make general notes on the extent, height/depth, and velocity of the floodwaters
   - Take pictures of the conditions
   - Make individual structure notes and take photographs (if possible) for damage documentation

3) **Post all flooded buildings**
   - Flooded structures should be posted with information advising property owners a safety inspection is required before reoccupancy is authorized and entry to any flood-damaged building requires approval by the community.

Control of entry to buildings in the more remote areas is very difficult. These buildings should be posted as soon as possible to prevent owners from reoccupying structures and initiating reconstruction prior to authorization.

POST-FLOOD TASKS

Exactly when this period occurs varies from event to event by community. Some of the suggested tasks can actually be initiated during the flooding disaster. If the community has accomplished the pre-flood planning tasks, some of the post-flood tasks will take much less time. Community officials should carefully consider these items, as they represent the bulk of the work effort to recover from a flood. **The post-flood damage survey is an item that must be accomplished to determine the extent of damage.** This documentation is necessary to ensure floodplain development permits are issued in compliance with the community's floodplain management ordinance.

[Post-flood Tasks – continued]

1) **Coordinate with local emergency management, police, fire department, rescue squad, and other community agencies or employees who may be involved in flood evacuation and response to identify specific areas that have flooded**

2) **Survey and inspect the flood-damaged areas to determine which structures have been damaged and take photographs for documentation**
   - Determine when each structure each structure was constructed
     - Pre-FIRM [built prior to the effective date of the Flood Insurance Rate Map (FIRM)]
     - Post-FIRM [built after the effective date of the FIRM]
     - If post-FIRM, is it compliant?
   - Determine extent of damage to each structure
   - Sample damage classifications:
     - Substantially damaged [more than 50% of fair market value]
     - Heavily damaged [may be more than 50% of fair market value]
     - Moderately damaged [less than 50% of fair market value]
     - Minimally damaged [only minor repairs necessary]

3) **Post each structure with the preliminary inspection findings and take photographs of any damage**
   - Make sure the posted notice includes:
     - Address of structure
     - Inspection date and inspector signature
     - Preliminary inspection classification [additional explanation in appendix]
       - ◊ WHITE: Building damaged, inspection required before re-entry
       - ◊ GREEN: Building inspected, no apparent hazards, minimum repairs
       - ◊ YELLOW: Building inspected, minor repairs
       - ◊ ORANGE: Building inspected, apparent damage in excess of 50%, repairs not authorized until damage extent verified
       - ◊ RED: Building inspected, apparent extensive damage, no re-entry
     - Major damage items
     - Requirements to reoccupy/repair [floodplain development permit, other permits, etc.]
     - Instructions for the property owner
     - Copy of preliminary inspection report

4) **Post a notice on each flood-damaged structure clearly indicating a floodplain development/building permit is required prior to the initiation of any repair of the flood-damaged structure**

5) **Determine the fair market value for each structure**
   The tax assessed value of the structure (excluding the land) may be used in place of the fair market value.

[Post-flood Tasks - continued]

6) **Allow the property owner to provide an appraisal of the property (at their own expense) that represents the fair market value of the structure**
   - For substantially damaged structures, the appraisal should reflect the value immediately prior to the damage
   - Only accept appraisals performed by trained, qualified, state-licensed real estate appraisers

7) **Review the property owner's appraisal prepared by an independent review appraiser, if the appraisal exceeds the tax assessed value of the structure by more than fifteen (15) percent**
   - Confirm the value established by the new appraisal represents the fair market value of the structure
   - If the review appraisal report supports a value greater than the tax assessed value, then the new appraised value may be used to determine if the proposed improvements or repairs to the structure constitute a substantial-improvement
   - Provide a copy of the new appraisal to the tax assessor's office

8) **Determine the fair market value of the proposed repairs/improvement**
   - Must represent the fair market value of the work to be performed
   - Total value of the damage must be determined, regardless of the extent of repairs
   - Can require the property owner to provide an itemized cost of all the proposed and required repairs/improvements
   - If insured, an itemized insurance adjuster's report can establish the value of damage
   - If not insured, the community must determine the total value of damage [can require property owner to provide an itemized breakdown of costs prepared by a local, licensed building contractor]
   - Must include any donated labor and materials and costs for any owner labor

9) **Inspect and review independent cost estimates to determine if it fairly represents the total damage and repair costs**
   - Hire a qualified building contractor to review the cost estimates

10) **Compare the value of the proposed repairs/improvements to fair market value of the structure**
   - If substantially damaged or improved, the structure must comply with all of the community's floodplain ordinance requirements
   - Substantial-improvement rule cannot be waived due to volume of floodplain development permits to be issued

11) **Issue a dated, numbered floodplain development permit, and require it to be posted at the building repair site at all times**
   - Other community officials [police, sheriff, public works employees, etc.] should be aware of the floodplain development requirements and report any violations

[Post-flood Tasks – continued]

12) **Make frequent (preferably daily) physical inspection of the flood-damaged area to ensure repair work is not being performed without a floodplain development permit**
- Make daily notes of any activities or changes [document with photographs]

13) **Make provisions for on-going building inspections and code enforcement**
- As reconstruction progresses, additional inspections may be required to ensure extent of repairs [document with photographs]

14) **Publish a notice in the local newspaper to remind property owners that a floodplain development permit is required to repair structural damage resulting from the flood**
- Direct property owners to the community building department for assistance and information concerning a floodplain development permit
- Explain that emergency repairs done with temporary materials (tarps, plastic sheeting, etc.) generally do not require floodplain development permits
- Include an easy to understand guide through the permitting procedure

15) **Publish articles and notices about the availability of flood insurance**
- Remind citizens the community is a participant in the National Flood Insurance Program and that structure and contents flood insurance coverage is available to any property owner, regardless of the property location
- Remind citizens that flood insurance is NOT just for properties located in the 100-year floodplain
- Flood insurance is available to any property owner in a community participating in the National Flood Insurance Program
- Remind renters they can purchase flood insurance coverage on their personal property contents
- Discuss availability of purchasing flood insurance coverage from any state-licensed property and casualty insurance agent
- Except for flood insurance purchased at the time of a real estate closing, there is a thirty day waiting period before the policy becomes effective

16) **Other suggestions**
- Expedite floodplain development permits for minor (nonstructural) repairs such as windows, doors, etc.
- Coordinate with public health officials to distribute important health and safety information
- Establish restricted access to damaged areas and curfews
- Ample supply of community street maps for contract inspectors and vendors

APPEALS

A system to review the inspection determination must be established. Frequently, property owners do not agree with the damage estimate or property valuation. The formal procedure for appealing flood damage estimates should be established per your community's appeals procedure.

One suggested procedure is:

1) **Review the original estimate of the percent of damage**
   - Review the estimate provided by the inspector as part of the preliminary damage inspection and any photographs
   - Original estimate is basis for subsequent action by the community

2) **Review evidence for amending the estimate provided by the property owner**
   - Copy of bona fide contract to repair the building
   - Estimate of repair costs prepared by a registered architect or engineer
   - A detailed list of required repair materials and labor prepared and certified by the owner or certified building contractor
   - Any other reasonable documentation, photographs, etc.

3) **Determine a "final" estimate of damages**
   - Include all evidence that documents the reason for the modification

4) **If owner still disagrees, owner can appeal to the community's Board of Appeals**
   - Provide appeal form consistent with the provisions of the community's ordinances

5) **Present the appeal to the Board of Appeals**
   - Completed form to be processed by community

6) **Schedule public hearing before Board of Appeals**
   - Additional meetings may be required during the post-flood period

7) **Require the property owner or the owner's agent to attend the public hearing**
   - Owner should present case for appeal
   - Community documentation should be available for review by the Board

8) **Board of Appeals hears the request and decides the issue**

9) **All Board of Appeals' decisions are subject to judicial review**

SUMMARY

Typically, flood disaster events are very unpredictable, but the damages resulting from a flood do not have to be. Proper floodplain management and construction has consistently resulted in reducing losses to life and property. Communities that take time to develop a standard operating procedure gain more than that time back during a disaster. Samples of various forms and suggested wording are attached to this SOP. **Please review each sample carefully and adapt it to your community. Any SOP or community form should be reviewed by the community's legal counsel, adopted by the community, and incorporated in the floodplain management administrative procedures for that community.**

The Regional Office of the Federal Emergency Management Agency in Kansas City is available to work with your community to further refine these suggested procedures. If you have any questions concerning this or any other aspect of your floodplain management program, please contact the Regional Office National Flood Insurance Program staff at (816) 283-7003.

APPENDICES

DAMAGE LEVELS AND CONDITIONS

INSPECTION TAG COLOR	DAMAGE LEVEL	SAMPLE CONDITIONS
WHITE [Inspection Required before reentry]	Undetermined	Damage apparent
GREEN [Preliminary inspection conducted]	Minimum repairs needed	Broken windows, damage to landscaping, porch/deck damage, carpets soaked on first floor, chimney damage, business signs damage, parking lot damage
YELLOW [Building inspected]	Minor repairs needed	Interior floor and wall damage, minor damage to exterior walls, shingles/roofing removed or missing, small trees fallen on structure, business inventory destroyed, fleet/vehicle damage, fire escape not usable
ORANGE [Building inspected]	Major repairs needed; apparent damage in excess of 50%; repairs not authorized until damage extent verified	Water above first floor, moved off of foundation, walls collapsed, exterior frame damage, roof off or collapsed, foundation damage, insulation damage, exterior wall damage, one room destroyed, exits blocked, utilities damage [furnace, water heater, well, septic system], accessory/service buildings damage, production/office equipment damage
RED [Building inspected]	Destroyed; apparent extensive damage; no re-entry allowed	Structure leveled, foundation/ basement damage, water above the eaves, second floor missing

PRELIMINARY INSPECTION: DAMAGE LEVELS AND CONDITIONS

As soon as possible after the water has receded so that buildings are accessible, and after clearance by emergency officials, any flood-damaged structure should be inspected. The property owner or representative should be present for the interior inspection. The primary purpose is to verify safety for entry. The secondary purpose is to estimate the percent of damage that has occurred. Photographs of the damage should be taken. At the conclusion of the preliminary damage inspection, the structure should be tagged with its building status.

WHITE: No inspection was made. Building was damaged and an inspection is required before reentry can be authorized.

GREEN: This building was inspected. No obvious safety hazards were found. Flood damage was apparently insignificant, no repairs beyond clean-up were required, and continued use and occupancy is authorized immediately.

YELLOW: This building was inspected. Flood damage repairs are needed before occupancy can be approved, but no significant life-safety hazards were apparent. Entry to the building for purposes of personal property retrieval, clean-up, and inspection for repairs is authorized. A floodplain development permit and any other building permits are required before electrical, plumbing, mechanical, or building repairs are started.

ORANGE: This building was inspected. Damage to the building was apparently in excess of 50% of the building value and repairs cannot be authorized unless the structure can comply with all of the community's floodplain management requirements.

RED: This building was inspected. There was apparent serious damage or a hazardous condition which makes reentry unsafe. Entry may result in injury or death. Use or occupancy of the structure is prohibited and entry for any purpose requires special arrangements approved through the inspecting official.

Completeness and accuracy of information on the preliminary damage inspection forms is vital. Missing or incorrect information results in delays.

PRELIMINARY DAMAGE INSPECTION REPORT

Date inspection requested: _____ Date of inspection: _____

Floodplain status: Fringe _____ Floodway _____

Owner(s)/business name(s): _____

Owner(s) telephone #: _____ Work (if different): _____

Property address: _____

	Date	Initials
Site access authorized – Emergency Operations:	_____	_____
Building approved for re-entry – Community:	_____	_____

Building Type: Residential [ ] Commercial [ ] Accessory [ ]

Condition: Structurally sound [ ] Apparently unstable [ ] Unsure [ ]

Does structure have basement? Yes [ ] No [ ]

Water level in building: At time of inspection: _____ At crest: _____

Roof damaged:	No [ ]	Yes [ ]	Repairable [ ]	Uncertain [ ]					
Walls damaged:	No [ ]	Yes [ ]	Repairable [ ]	Uncertain [ ]					
Floors damaged:	No [ ]	Yes [ ]	Repairable [ ]	Uncertain [ ]					
Foundation damaged:	No [ ]	Yes [ ]	Repairable [ ]	Uncertain [ ]					
Electrical power:	On [ ]	Off [ ]	Secured [ ]	Was submerged [ ]					
Gas service:	On [ ]	Off [ ]	N/A [ ]						
Gas piping:	Damaged [ ]	No apparent damage [ ]	Was submerged [ ]						
Propane:	On [ ]	Off [ ]	N/A [ ]						
Oil:	On [ ]	Off [ ]	N/A [ ]						
Water:	On [ ]	Off [ ]	Damaged [ ]	Was submerged [ ]					
Sewer:	Blockage [ ]	No apparent damage [ ]	Septic system [ ]						
Htg & AC sys:	Damaged [ ]	No apparent damage [ ]	Was submerged [ ]						
Fire prot sys:	Damaged [ ]	No apparent damage [ ]	Was submerged [ ]	N/A [ ]					

Estimated percent of total damage: _____%

INPECTOR'S RECOMMENDATIONS

Occupancy recommendation: Approved [ ] Limited entry [ ] Restricted entry [ ] UNSAFE [ ]

Color of placard used: Green [ ] Yellow [ ] Orange [ ] Red [ ]

Electrical service may be restored:	No [ ]	Yes [ ]	No action needed [ ]
Gas service may be restored:	No [ ]	Yes [ ]	No action needed [ ]
Water service may be restored:	No [ ]	Yes [ ]	No action needed [ ]
Telephone service may be restored:	No [ ]	Yes [ ]	No action needed [ ]

REINSPECTION required before completion of preliminary damage inspection: Yes [ ] No [ ]

INSPECTOR'S SIGNATURE: _____

Date of reinspection: _____ Comments: Passed [ ] Failed [ ]

INSPECTOR'S SIGNATURE: _____

AUTHORIZED

COMMUNITY NAME – PERMITTING OFFICE
COMMUNITY ADDRESS

A BUILDING PERMIT WAS ISSUED FOR THIS STRUCTURE AND IT IS AUTHORIZED TO BE CONSTRUCTED IN ACCORDANCE WITH APPROVED PLANS ON FILE.

PERMIT NO. _____

_____

PROPERTY ADDRESS

THIS NOTICE IS NOT TO BE REMOVED

[WHITE BACKGROUND]

COMMUNITY NAME – PERMITTING OFFICE
ADDRESS

NOTICE

RE-ENTRY INSPECTION REQUIRED

ARRANGEMENTS MUST BE MADE FOR AN INSPECTION OF THIS STRUCTURE BEFORE ANY RE-ENTRY CAN BE ALLOWED.

FOR FURTHER INFORMATION CONTACT: COMMUNITY PERMITTING OFFICE

[GREEN BACKGROUND]

COMMUNITY NAME – PERMITTING OFFICE
ADDRESS

SAFE FOR OCCUPANCY

PROPERTY ADDRESS

INSPECTOR SIGNATURE **DATE**

[YELLOW BACKGROUND]

COMMUNITY NAME – PERMITTING OFFICE
ADDRESS

NOTICE

INHABITABLE

USE CAUTION UPON ENTERING

PROPERTY ADDRESS

NOTE: This structure can be repaired with proper permits. Contact the Community Permitting Office at (###-####) to discuss your options.

Permitting Official **Date**

[ORANGE BACKGROUND]

COMMUNITY NAME – PERMITTING OFFICE ADDRESS

DANGER

UNINHABITABLE

USE CAUTION UPON ENTERING

PROPERTY ADDRESS

NOTE: This structure cannot be repaired without proper permits. Contact the Community Permitting Office at (###-####) to discuss your options.

Permitting Official **Date**

[RED BACKGROUND]

COMMUNITY NAME – PERMITTING OFFICE
ADDRESS

CONDEMNED

DANGER

USE CAUTION UPON ENTERING

PROPERTY ADDRESS

ANY PERSONS WILLFULLY DESTROYING, MUTILATING, OR REMOVING THIS CARD WILL BE PUNISHED TO THE FULL EXTENT OF THE LAW.

This structure has sustained flood damage greater than 50% of it's market value. A letter will follow within 30 days advising you of your options or you can call ###-#### for details.

Permitting Official **Date**

Attachment 3:
40 and 60 Percent Damages Methodology

FEMA

RiskMAP
Increasing Resilience Together

SUBSTANTIAL IMPROVEMENT/SUBSTANTIAL DAMAGE (SI/SD)

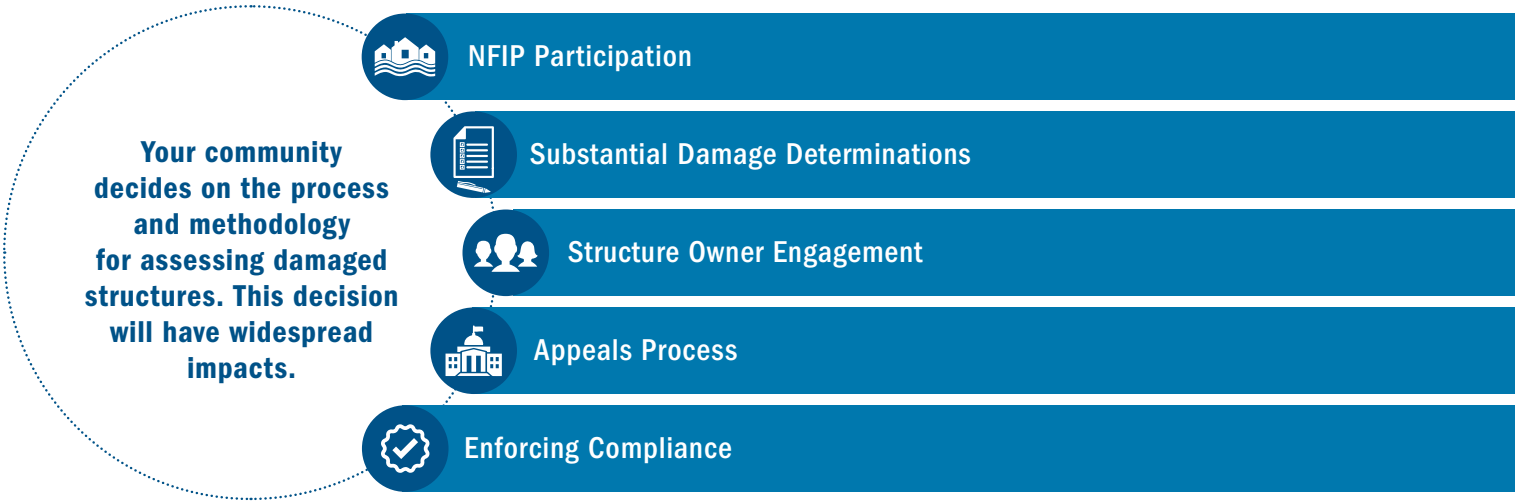
Process & Methodology For 40- to 60-Percent Damaged Structures

Structures located in Special Flood Hazard Areas (SFHAs) that are substantially modified (either damaged or improved) more than 50 percent are required to comply with local building and floodplain requirements. Local community officials (typically floodplain administrators) are responsible for substantial damage and improvement (SI/SD) determinations. These determinations are required for participation in the National Flood Insurance Program (NFIP).

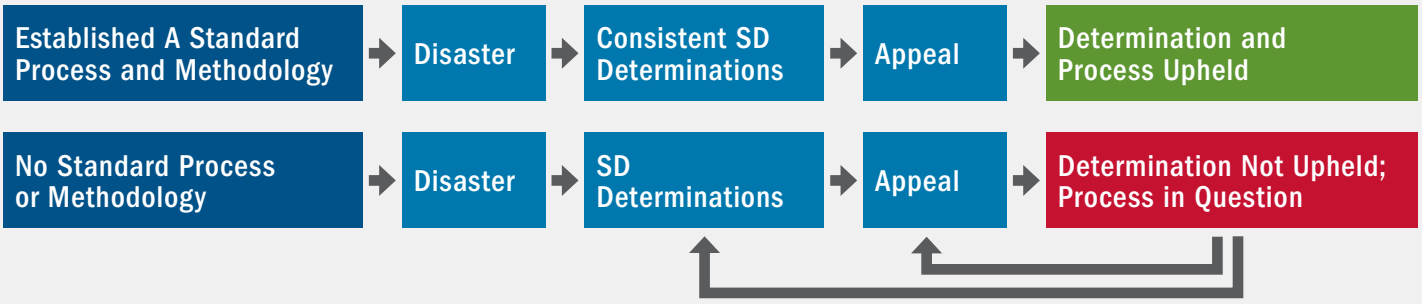
After an event, substantial damage determinations are made by assessing damaged properties. Typically, preliminary evaluations are first completed to estimate the extent of damage to structures in the impacted area. Communities should have a process for making determinations for structures damaged between 0 and 40 percent, 40 and 60 percent, and 60 and 100 percent. After preliminary evaluations, communities should focus on inspecting structures estimated to be 40- to 60-percent damaged.

WHY FOCUS ON 40 TO 60% DAMAGED?

Substantial damage determinations can affect homeowners and communities in different ways. Structures estimated to be between 40 and 60% damaged may be controversial because they straddle the line of a determination. It is essential that your community has a standard assessment process in place. This will provide for defensible determinations.



Having a standard process for assessing 40- to 60-percent damaged structures will help your community manage these impacts.



CONSIDERATIONS WHEN DETERMINING YOUR PROCESS AND METHODOLOGY

CONSIDER...	HOW CAN THIS AFFECT YOUR DECISION?
Defensible Processes	The SI/SD determinations must be consistently applied with the same process and methodology to structure owners before and after a disaster. The consistency of the process and how it is implemented impacts the number and validity of appeals.
Determining Values	Determining home values can be tricky. It is important to decide on the basis for assessments (market-rate value, tax assessed value, or otherwise) before the determinations begin. Assessments must be uniformly applied. This decision can significantly impact the validity of determinations. *Example: if property values have not been recently reassessed, using tax assessed values may not produce an accurate determination.*
Compliance	Once structures are declared substantially damaged, they must comply with the NFIP, State regulations, and local building codes and floodplain requirements. Enforcing compliance may require public outreach, additional staff time, and community resources, which can be challenging. *Note: many communities have a cumulative clause for SI/ SD, accounting for investment over time. For instance, if a homeowner invests 30 percent of the home value one year and 25 percent the next, the community will determine the home to be more than 50 percent improved and the homeowner will need to bring the home into compliance.*
Elevation Certificates	Elevation Certificates are the basis for determining if a homeowner must elevate their home. Often, inspectors and contractors do not fill in the required forms correctly. This can affect an SI/SD determination and should be accounted for in any process. *Note: while Elevation Certificates are not required, they can be very useful.*
Varying Outcomes for Homeowners	While some homeowners may request a substantial damage determination, others may not. This could lead independent appraisers to cater to the requests of the homeowner. *Example: one homeowner may want a determination to qualify for Increased Cost of Compliance (ICC) coverage. Another homeowner may only have damage to a basement or porch, and a determination would require them to elevate their entire house.*
Foreclosure	If the costs of compliance are too high, there may be a possibility of home foreclosure. This is an important consideration when deciding how to determine home values.

Attachment 4:
SI/SD Worksheets and Checklists

Community Name

Floodplain Development Permit

(See Terms & Conditions)

Department Name

Contact Information

Issue Date:	Expiration Date:
Permit #	* Permit becomes void if there are changes to the effective Flood Insurance Rate Maps*

The **Floodplain Development Permit** is the mechanism by which our community evaluates any and all impacts of activities proposed within our regulated floodplains. All activities must be in compliance with the Floodplain Damage Prevention Ordinance of the presiding jurisdiction, whether local, regional or statewide. The National Flood Insurance Program provides flood insurance to individuals at much lower premiums than could otherwise be purchased through private insurers, and makes certain federal funds are available to communities. In order for citizens to be eligible for the national flood insurance rates, or for communities to receive certain kinds of federal funds, the community must agree to meet minimum floodplain standards. This application packet is a tool to ensure that the activities in our community comply with the Floodplain Damage Prevention Ordinance

Any party undertaking development within a designated floodplain must obtain a floodplain development permit prior to the work commencing. FEMA defines development in Title 44 of the Code of Federal Regulations part 59.1 as: *Any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filing, grading, paving, excavation or drilling operations or storage of equipment or materials.* Other human activities that are considered development include but are not limited to: alterations of a structure through additions, demolition and remodeling, fences, retaining wall, moving/placement of remanufactured or mobile homes, campgrounds, storage of equipment, vehicles or materials (storage yards, salvage yards).

1

Please Read

General Provision of the Floodplain Development Permit Terms

1. No work may start until a permit has been issued.
2. The permit may be revoked if:
   a. Any false statements are made herein;
   b. The effective Flood Insurance Rate Map has been revised;
   c. The work is not done in accordance with the Floodplain Damage Prevention Ordinance of the presiding jurisdiction or other local, state and federal regulatory requirements.
   d. The work is different than what is described and submitted to the community as part of the Floodplain Development Permit application.
3. If revoked, all work must cease until permit is reissued.
   a. If the permit cannot be reissued, applicant acknowledges that they will be responsible to correct the issue which may require removal of any development that may have occurred.
4. Development shall not be used or occupied until the project has received final inspection, a final elevation and approval by the community.
5. The permit will expire if no work has commenced within 3 months of issuance and by the expiration date noted on the permit.
6. Applicant is hereby informed that other permits may be required to fulfill local, state, and federal regulatory requirements and acknowledges that it is their responsibility to ensure that all necessary permits are obtained.
   a. This includes but is not limited to documentation showing compliance with the endangered species act.
7. Applicant hereby gives consent to the local Floodplain Administrator and his/her representative (including state and federal agencies) to make reasonable inspections required to verify compliance.
8. Applicant acknowledges that the project will be designed to minimize any potential drainage onto surrounding properties and will be responsible for any drainage issues that may arise.
9. I, the applicant, certify that all statements herein and in attachments to this application are, to the best of my knowledge, true and accurate. Furthermore, I have read and understand the relevant Floodplain Damage Prevention Ordinance for my community and will adhere to the ordinance and will or have already obtained all necessary state, federal and local permits for the proposed development.

Please Sign

APPLICANT'S NAME:

APPLICANT'S SIGNATURE:

DATE:

Community Name

Floodplain Development Permit

(See Terms & Conditions)

Department Name

Contact Information

Issue Date:	Expiration Date:
Permit #	* Permit becomes void if there are changes to the effective Flood Insurance Rate Maps*

2 Owner Information

Please Fill Out

OWNER:

ADDRESS:

CITY: | STATE: | ZIP CODE:

TELEPHONE #: | FAX #:

CONTACT NAME:

EMERGENCY TELEPHONE #:

E-MAIL:

Contractor/Developer Information

CONTRACTOR/DEVELOPER:

ADDRESS:

CITY: | STATE: | ZIP CODE:

TELEPHONE #: | FAX #:

CONTACT NAME:

EMERGENCY TELEPHONE #:

E-MAIL:

3 Project Overview

Please Fill Out

PROJECT ADDRESS:

LEGAL DESCRIPTION: | LATITUDE/LONGITUDE #:

DESCRIPTION OF PROJECT:

ESTIMATED COST OF PROJECT:

If work is on, within or connected to an existing structure:

VALUATION OF EXISTING STRUCTURE: | SOURCE OF VALUATION: | WHEN THE EXISTING STRUCTURE WAS BUILT:

* If the value of an addition, remodel or alteration to a structure equals or exceeds 50% of the value of the structure before the addition, remodel or alteration, the entire structure must be treated as a substantially improved structure and is required to comply with the relevant Floodplain Damage Prevention Ordinance. A relocated structure, including mobile homes, manufacture homes or cabins, must be treated as a new construction.

Please Check

CHANNEL IMPROVEMENTS

- ☐ Bank Stabilization
- ☐ Grade Control
- ☐ Drop Structure
- ☐ Outfall
- ☐ Fill
- ☐ Other _____

STRUCTURAL DEVELOPMENT

- ☐ New Construction
- ☐ Residential Building
- ☐ Non-Residential
- ☐ Manufactured Home
- ☐ Rehabilitation (< 50%)
- ☐ Substantial Improvement (≥ 50%)
- ☐ Other _____

MISCELLANEOUS

- ☐ Bridge
- ☐ Culvert
- ☐ Demolition
- ☐ Fence
- ☐ Grading / Parking Lot
- ☐ Other _____

TYPE

- ☐ Temporary
- ☐ Permanent
- ☐ Rehabilitation
- ☐ Emergency Repair
- ☐ Maintenance
- ☐ Other _____

Flood Hazard Data (TO BE COMPLETED BY FLOODPLAIN ADMINISTRATOR)

WATERCOURSE NAME: | EFFECTIVE FIRM PANEL NUMBER AND DATE:

IS THE DEVELOPMENT IN OR IMPACTS A FLOODPLAIN? ☐ No. ☐ Yes. | IS THE DEVELOPMENT IN THE FLOODWAY? ☐ No. ☐ Yes. *If yes, a No-Rise Certification is required.*

SPECIAL FLOOD HAZARD ZONE: | BASE FLOOD ELEVATION: | METHOD USED TO DETERMINE BASE FLOOD ELEVATION:

VERTICAL DATUM: MUST BE EITHER NGVD OR NAVD 88 AND THE SAME VERTICAL DATUM OF THE EFFECTIVE FIRM: | ELEVATION OF LOWEST FLOOR, INCLUDING BASEMENT OR CRAWLSPACE*: | ELEVATION OF LOWEST, HABITABLE FLOOR*:

ELEVATION OF FLOODPROOFING (NON-RESIDENTIAL STRUCTURES ONLY)*: | *SOURCE OF ELEVATION AND/OR FLOODPROOFING INFORMATION:

DOES THE PROJECT REQUIRE THAT A CLOMR BE PROCESSED? ☐ No. ☐ Yes. | IS A LOMR REQUIRED: ☐ No. ☐ Yes.

Community Name

Floodplain Development Permit

(See Terms & Conditions)

Department Name

Contact Information

Issue Date:	Expiration Date:
Permit #	* Permit becomes void if there are changes to the effective Flood Insurance Rate Maps*

THIS PAGE TO BE COMPLETED BY FLOODPLAIN ADMINISTRATOR

4 Floodplain Development Permit Checklist

Please Check

The following documents may be required at the discretion of the approving community official:

- ☐ Tax assessor map
- ☐ Maps and/or plans showing the location, scope and extent of development
- ☐ Floodproofing Certificate: Certificate and supporting documentation used to provide the certification
- ☐ Documentation showing compliance with the Endangered Species Act
- ☐ No-Rise Certificate: Certificate and supporting documentation used to provide the certification Elevation
- ☐ Certificate
  - ☐ Constructional Drawing
  - ☐ Building Under Construction
  - ☐ Finished Construction
- ☐ Grading plans
- ☐ Detailed hydraulic and hydrology model for development in a Zone A
- ☐ Conditional Letter of Map Revision (CLOMR)
- ☐ Structure valuation documentation
- ☐ Non-conversion agreement: Required for all structures that are constructed with an enclosure
- ☐ Wetland Permit from the U.S. Army Corps of Engineers
- ☐ Copies of all federal, local and state permits that may be required.
- ☐ Manufactured home anchoring certificate: Certificate and supporting documentation used to provide the certification
- ☐ Other documents deemed necessary by the Floodplain Administrator _____

5 Permit Action

Please Check

- ☐ **PERMIT APPROVED**: The information submitted for the proposed project was reviewed and is in compliance with approved floodplain management standards.
- ☐ **PERMIT APPROVED WITH CONDITIONS**: The information submitted for the proposed project was reviewed. In order for the proposed project to be approved, certain restrictions or conditions must be met. These restrictions or conditions are attached.
- ☐ **PERMIT DENIED**: The proposed project does not meet approved floodplain management standards (explanation on file).
- ☐ **VARIANCE GRANTED:** A variance was granted from the base (1%) flood elevations established by FEMA consistent with variance requirements of Title 44 of the Code of Federal Regulations part 60.6 (Variance action documentation is on file).

Please Sign

SIGNATURE OF COMMUNITY OFFICIAL:

PRINT NAME AND TITLE OF COMMUNITY OFFICIAL:

DATE:

Post Flood Damage Checklist:

This checklist is intended to provide community floodplain managers with a broad overview of some areas that he or she should address during the post-flood recovery process. This is by no means an all-inclusive list, but provides our recommendations of some major program areas and issues to consider after a flood. Step through the checklist items on **this page for all flood events**, regardless of a presidential disaster declaration.

When a presidential disaster is declared, additional resources may be available and the floodplain manager should **continue to the end** of this document.

Floodplain Management:

- ☐ Identify and coordinate with your local emergency management staff.
- ☐ Review floodplain management ordinance.
- ☐ Notify property owners of permit and building requirements.
- ☐ Require permits for all development, which includes any manmade change or improvement, in the Special Flood Hazard Area (SFHA). Permit requirement is not merely for substantial damage.
- ☐ Make SFHA determination for permitting using Flood Insurance Rate Maps (FIRMs) and Flood Insurance Study (FIS)
- ☐ Perform substantial damage determination (www.fema.gov/media-library/assets/documents/18562)
- ☐ Determine base flood elevations (BFEs) using Flood Insurance Study (FIS)
- ☐ Notify property owners of determination results and subsequent building requirements in writing
- ☐ Tour floodplain to ensure development/rebuilding is compliant with your ordinance.

Flood Insurance:

- ☐ Direct citizens with flood insurance questions to contact their flood insurance agent and to visit www.floodsmart.gov
- ☐ Notify citizens with flood insurance of the availability of the Increased Cost of Compliance (ICC) coverage that provides up to $30,000 in coverage if:
    1. The property owner has flood insurance through the NFIP, and
    2. The property is located within a Special Flood Hazard Area, and
    3. The property is substantially damaged
- ☐ Share that anyone can purchase flood insurance. (Renters & Owners, In & Out of SFHA)

Hazard Mitigation Assistance Grants:

- ☐ Review mitigation actions identified in your community's Hazard Mitigation Plan
- ☐ Pursue mitigation of at risk properties through Pre-Disaster Mitigation, Flood Mitigation Assistance Grant Programs or other federal, state and local grant programs.

When a presidential disaster is declared, additional resources, like those that follow, may be activated and the floodplain manager should take these further actions.

Hazard Mitigation Grant Program (HMGP):

- ☐ Gauge the interest in mitigation by local property owners – would some like to be elevated or have their structure acquired by the municipality? If so, contact your State Hazard Mitigation Officer about submitting a letter of intent from the community to participate in the HMGP if funds are available.
- ☐ Ensure that the community has an adopted Hazard Mitigation Plan (prerequisite for HMGP eligibility).
- ☐ Share with interested citizens that HMGP is long-term option for residents looking to reduce or eliminate their flood risks, typically through acquisition or elevation, following a presidentially declared disaster and that applications are submitted by the municipality, not the property owner.
- ☐ Encourage residents interested in this program to keep all receipts to avoid Duplication of benefits. (Duplication of Benefits Fact Sheet) www.fema.gov/pdf/government/grant/resources/hbf_ii_2.pdf
- ☐ Report any mitigation actions taken to county planners to be reflected in the Hazard Mitigation Plan and/or County Comprehensive Plan.

Individual Assistance:

- ☐ Notify citizens that Small Business Association (SBA) Loans (Small Business Administration Disaster Loans) are the key to open the door to all other funding sources during a presidentially declared disaster. www.sba.gov/category/navigation-structure/loans-grants/small-business-loans/disaster-loans
- ☐ Encourage citizens to apply for Individual Assistance to help them with short term housing needs and other services, if it is awarded following a presidentially declared disaster. www.fema.gov/recovery-directorate/assistance-individuals-and-households-fact-sheet

Public Assistance: (www.fema.gov/public-assistance-local-state-tribal-and-non-profit)

- ☐ Review potential funding sources for public and certain nonprofit facilities and activities including:
    - Emergency demolitions of unsafe structures
    - Repairing community-owned buildings/infrastructure
    - Private Nonprofit facilities may be eligible to receive disaster assistance

Post Flood Damage Recovery Resources:

The information below is intended to provide the community floodplain manager with additional details on each of the actions identified in the checklist. This information is intended as a quick reference guide for the most critical actions to be taken post flood. Please use the referenced documents provided in the table for more complete information or contact your State NFIP Coordinator. See www.fema.gov/region-iii-state-partners for a list of State NFIP contacts.

Floodplain Management:

☐ **Identify and coordinate with your local emergency management staff.**

Building a relationship with the local emergency management staff is vital to a successful recovery effort. Information sharing and coordination between emergency managers and the floodplain manager after an event will prove mutually beneficial in many ways. One of these benefits is the reinforcement of existing ordinance requirements to assure safer rebuilding.

☐ **Review floodplain management ordinance.**

Land use authority is at the local level. NFIP participation is voluntary, but in order to maintain the benefits of participation communities must adopt and enforce an ordinance with the minimum requirements for participation. Communities can and are encouraged to adopt higher regulatory standards.

☐ **Notify property owners of permit and building requirements.**

It is natural that citizens will want to get back to normal as quickly as possible. Notify citizens of the requirement to obtain a permit.

☐ **Require permits for all development in the Special Flood Hazard Area (SFHA) (not just in cases of substantial damage).**

The permit requirement for all development is a federal minimum requirement. Development is defined very broadly in the NFIP and includes any manmade change or improvement. Your community ordinance may regulate areas in addition to the SFHA; check the ordinance to see what has been adopted.

Permit fees may be waived, but permitting requirements may not.

☐ **Make floodplain determination for permitting using Flood Insurance Rate Maps (FIRMs)**

Ensure you are making floodplain determinations based on the Special Flood Hazard Areas (SFHAs) and any other community identified flood hazards that have been adopted by your ordinance.

View flood maps and studies at the Map Service Center, www.msc.fema.gov, or preliminary maps and studies at *www.riskmap3.com/maps*.

☐ **Perform substantial damage determination. (FEMA P-758)**

Determining Cost Information (See FEMA P-758 Chapter 4 for more details)

- *Itemized or estimated costs of materials and labor prepared by licensed contractors or professional construction cost estimators.*
- *Building valuation tables published by building code organizations and cost estimating manuals and tools available from professional building cost-estimating services.*
- *"Qualified Estimate" of costs that are prepared by the local official using professional judgment and knowledge of local and regional construction costs. This approach is most often used post-disaster when there are large numbers of damaged buildings and when permits must be quickly processed.*
- *Building owners may submit cost estimates that they prepare themselves. If the community is willing to consider such estimates, owners should be required to provide as much supporting documentation as possible (such as pricing information from lumber companies and hardware stores) and include the value of labor.*

Determining Market Value (See FEMA P-758 Chapter 4 for more details)

- *Appraisal of market value from a qualified professional who is licensed to perform appraisals in the State or community where the property is located*
- *Assessed value developed for property tax assessment purposes, adjusted to approximate market value*
- *Estimates of a structure's actual cash value, including depreciation*
- *"Qualified estimates" based on the professional judgment of a local official*

It is important to note two basic NFIP requirements related to market value:

1. *Market value must always be based on the condition of the structure before the improvement is undertaken or before the damage occurred.*
2. *Only the market value of the structure is pertinent. The value of the land and site improvements (landscaping, driveway, detached accessory structures, etc.) and the value of the use and occupancy (business income) are not included.*

Pros of a substantial damage determination:

- *Reduces exposure to future flood risk by bringing the building into compliance with local codes or by entirely removing the building from the flood plain*
- *Fulfills one of the prerequisites for Increased Cost of Compliance (ICC) eligibility*

- *Establishes that a property is cost-beneficial in a Hazard Mitigation Grant Program application*
- *Lower insurance premiums*

Cons of a substantial damage determination:

- *No guarantee that all applicants will be approved by a Hazard Mitigation Grant Program*
- *Increases the amount of time it takes to rebuild and increases construction costs due to requirement to elevate/dry floodproof lowest floor and utilities at or above the base flood elevation*
- *Higher insurance premiums for failure to comply with substantial damage requirements*
- *Jeopardizes municipal participation in the National Flood Insurance Program when there is failure to comply with substantial damage requirements*

☐ **Determine Base Flood Elevations (BFEs**) (www.msc.fema.gov)

The flood levels from a flooding event are likely not the same as the Base Flood Elevation. Regulations will apply based on the BFE and any additional freeboard that has been adopted in your ordinance.

Use the BFEs in the flood profile in the Flood Insurance Study for most accurate BFE. The BFEs on the FIRMs are rounded.

Can use simplified methods to determine BFEs in approximate A Zones. Reference the Zone A manual for information on the use of simplified methods (FEMA Quick-2).

☐ **Notify property owners of determination results and subsequent building requirements.**

Notification should go to those who were found to be substantially damaged and those who were not. Different building standards will apply based on the finding.

If property owner wants to refine determination, your community may accept additional documentation and re-evaluate.

☐ **Tour floodplain to ensure development/rebuilding is compliant with your ordinance.**

It may be necessary to tour the floodplain post-flooding event to ensure that all development is going through the permitting process.

Should unpermitted development be discovered, follow your community's ordinance enforcement procedures.

Resources and publications *can be found at FEMA's Resource and Document Library. The Library contains guidance and policy papers, program regulations, guidelines, brochures, and more. To order go to: www.fema.gov/media-library/assets/documents/17390*

Search Tip: *In your search browser enter "FEMA _____" (and title below).*

Suggested Helpful Resources and Publications	**FEMA Publication Number**
Floodplain Management 480	FEMA 480
Answers to Questions About Substantially Damaged Buildings	FEMA 213
Substantial Damage/Substantial Improvement Desk Reference	FEMA P-758
The Zone A Manual: Managing Floodplain Development in Approximate Zone A Areas	FEMA Quick-2
The Benefits of Flood Insurance Verses Disaster Assistance	F-217
Flood Insurance Requirements for Recipients of Federal Disaster Assistance	F-695
Myths and Facts About Flood Insurance	F-002
What You Need to Know about Federal Disaster Assistance and National Flood Insurance	F-001
Top 10 Facts for Every Consumer Needs to Know About the NFIP	F-301
Flood Claims Handbook	F-687
Increased Cost of Compliance	F-300
Hazard Mitigation Assistance Brochure	
Duplication of Benefits Fact Sheet	
Disaster Assistance Available from FEMA	
Small Business Administration Disaster Loans	
Apply for Disaster Assistance	
Public Assistance Grant Program	
Demolition of Private Structures	
Debris Management	
Private Nonprofit Facility Eligibility	
Disaster Assistance Available from FEMA	
	Updated 10.31.15

Checklist 2 - Field Preparations

	Need	Have	Item	Notes:
1.	_____	_____	Flood maps such as FIRMs, FIRMetts, clips of NeDNR Interactive Flood Maps, or other floodplain or flood risk maps.	
2.	_____	_____	Assessor's map or other address map with flood boundaries.	
3.	_____	_____	Route or area map showing proposed areas and sequence for data collection.	
4.	_____	_____	Tax data: structure owner name, structure address, mailing address, number of stories, and dimensions or habitable area.	
5.	_____	_____	Copies of blank SDE Damage Inspection Worksheets.	
6.	_____	_____	Copies of blank photo log sheets (if needed).	
7.	_____	_____	Photo ID badges for inspectors.	
8.	_____	_____	Letter of Introduction with community point of contact (name and telephone number).	
9.	_____	_____	Clip boards, pens/pencils, steno pad or notebook, highlighter.	
10.	_____	_____	100 ft tape measure (to obtain or verify structure dimensions).	
11.	_____	_____	Address board and dry erase markers.	
12.	_____	_____	Hard hat, gloves, safety glasses and vest, steel-toe and steel-shank shoes, safety vest, and flashlight.	
13.	_____	_____	Cell phones or walkie-talkies.	
14.	_____	_____	Digital camera, primary and alternate memory cards, and extra batteries.	
15.	_____	_____	Verification that police, fire, and emergency management agencies have been advised of SDE inspections.	
16.	_____	_____	Laptop computers or tablets with SDE tool installed and power cords with plug adaptors for use and re-charging in field vehicles.	
17.	_____	_____	Rain or cold-weather gear.	

Checklist 2 is adapted from "Checklist 2 - Field Preparations" found in FEMA P-784, Substantial Damage Estimator User Manual and Field Workbook.

Checklist 2 - Field Preparations

Need	Have	Item	Notes:

Review these procedures with your inspectors prior to collecting data:

1.	_____	_____	Field safety procedures for dealing with extreme temperatures, wild and domestic animals, driving, parking, and accidents.
2.	_____	_____	SDE data collection and recording requirements.
3.	_____	_____	Guidance for entering locked, occupied, or unoccupied structures.
4.	_____	_____	Guidance on identifying initial construction quality for both residential and non-residential structures.
5.	_____	_____	SDE inspection procedures for residential structures.
6.	_____	_____	SDE inspection procedures for non-residential structures. Guidance on
7.	_____	_____	selecting the depreciation rating.
8.	_____	_____	Data collection routes and sequence.
9.	_____	_____	Guidelines for interaction with structure owners and occupants.

SDA Damage Inspection Worksheet-Non-Residential

COMMUNITY	STRUCTURE	INSPECTION
NFIP Community ID (CID):	Structure Address:	Inspector Name:
NFIP Community Name:		Team #:
Latitude:	City:	Assessment Date:
Longitude:	Zip:	Date Damaged:
	County:	

PHOTOS

Photo #:	Direction facing:	○ Northwest	○ North	○ Northeast	○ East
		○ West	○ Southwest	○ South	○ Southeast
Photo #:		○ Northwest	○ North	○ Northeast	○ East
		○ West	○ Southwest	○ South	○ Southeast

STRUCTURE ATTRIBUTES

Year Constructed:

Story:	○ 1	○ 2 through 4	○ 5 or more
Use:	○ Apartments	○ Fire/Police Station	○ Mini-Warehouse
	○ Auditorium	○ Grocery Store	○ Motel
	○ Commercial Retail	○ High School	○ Municipal Building
	○ Convenience Store	○ Hospital	○ Office Building
	○ Courthouse	○ Hotel	○ Police Station
	○ Department Store	○ House of Worship	○ Restaurants Strip
	○ Elementary School Fast	○ Industrial	○ Mall
	○ Food Restaurant	○ Long-Term Care Facility	
Sprinkler System:	○ Yes ○ No	**Conveyance (Elevator/Escalator):**	○ Yes ○ No
Quality:	○ Low ○ Good	○ Budget ○ Excellent	○ Average
Cause of Damage:	○ Fire ○ Seismic	○ Flood ○ Wind	○ Flood and Wind ○ Other
Flood Duration:		○ Hours ○ Days	
Flood Depth Above Ground:		**Flood Depth Above 1st Floor:**	

Worksheet adapted from "Non-Residential SDE Damage Inspection Worksheet" found in Appendix B, FEMA P-784, Substantial Damage Estimator User Manual and Field Workbook.

SDA Damage Inspection Worksheet Cont.- Non-Residential

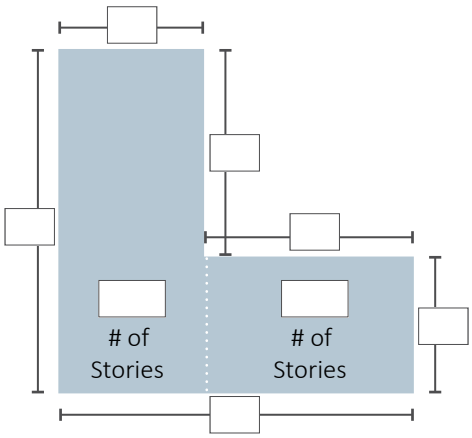
DEPRECIATION RATING

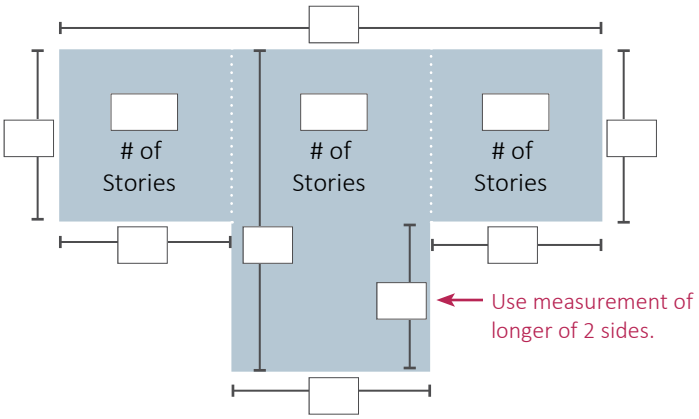
- ○ Very Poor Condition Requires Extensive Repairs Requires Some Repairs
- ○ Average Condition Above Average Condition Excellent Condition
- ○ Other:

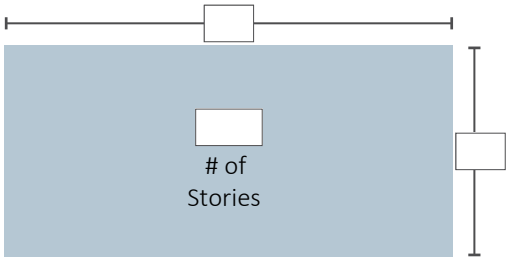
ELEMENT PERCENTAGES

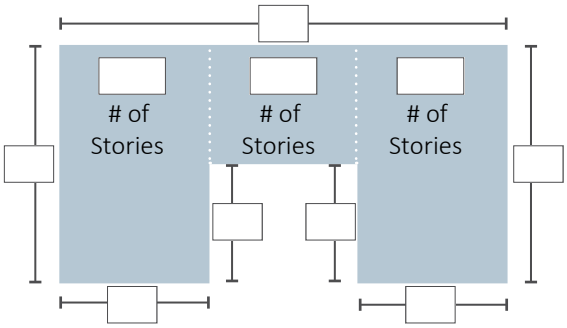
Element	Percent Damaged	Element	Percent Damaged
Foundation:		Electrical:	
Superstructure:		Interiors	
Roof Covering:		HVAC:	
Plumbing:			

SQ. FOOTAGE CALCULATOR









Worksheet adapted from "Non-Residential SDE Damage Inspection Worksheet" found in Appendix B, FEMA P-784, Substantial Damage Estimator User Manual and Field Workbook.

SDA Damage Inspection Worksheet-Residential

COMMUNITY	STRUCTURE	INSPECTION
NFIP Community ID (CID):	Structure Address:	Inspector Name:
NFIP Community Name:		Team #:
Latitude:	City:	Assessment Date:
Longitude:	Zip:	Date Damaged:
	County:	

PHOTOS

Photo #:	*Direction facing:*	○ Northwest	○ North	○ Northeast	○ East
		○ West	○ Southwest	○ South	○ Southeast
Photo #:		○ Northwest	○ North	○ Northeast	○ East
		○ West	○ Southwest	○ South	○ Southeast

STRUCTURE ATTRIBUTES

Year Constructed:

Residence Type:	○ Single Family Residence	○ Town or Row House	○ Manufactured House
Exterior:	○ One Story	○ Two or More Stories	
Foundation:	○ Continuous Wall + Slab ○ Piles	○ Basement ○ Slab-on-Grade	○ Crawlspace ○ Piers and Posts
Superstructure:	○ Stud-Framed ○ Common Brick	○ ICF ○ Masonry	
Roof Coverings:	○ Shingles ○ Clay Tile	○ Standing Seam (Metal) ○ Slate	
Exterior Finish:	○ Siding or Stucco ○ Brick Veneer	○ Exterior Insulated Finishing System (EIFS)	○ None (Common Brick or Structural)
HVAC System:	○ None	○ Heating or Cooling	
Quality:	○ Low ○ Good	○ Budget ○ Excellent	○ Average
Cause of Damage:	○ Fire ○ Seismic	○ Flood ○ Wind	○ Flood and Wind ○ Other
Flood Duration:		○ Hours ○ Days	
Flood Depth Above Ground: *(Decimal Ft.)*		**Flood Depth Above 1st Floor:** *(Decimal Ft.)*	

Worksheet adapted from "Residential SDE Damage Inspection Worksheet" found in Appendix B, FEMA P-784, Substantial Damage Estimator User Manual and Field Workbook.

SDA Damage Inspection Worksheet Cont.- Residential

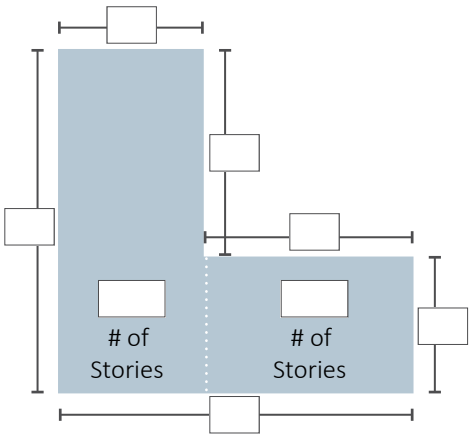
DEPRECIATION RATING

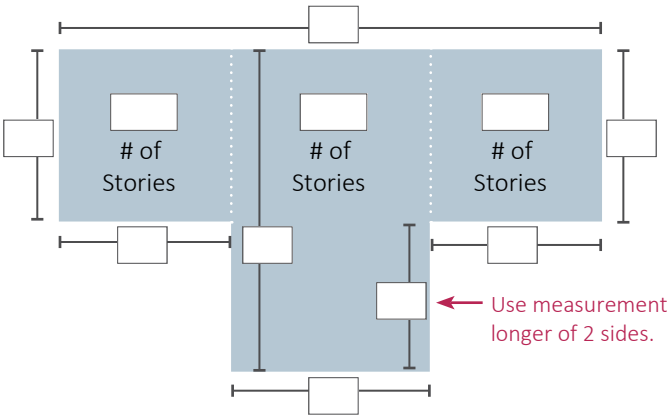
- ○ Very Poor Condition Requires Extensive Repairs Requires Some Repairs
- ○ Average Condition Above Average Condition Excellent Condition
- ○ Other:

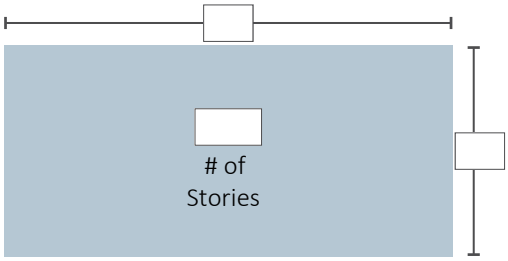
ELEMENT PERCENTAGES

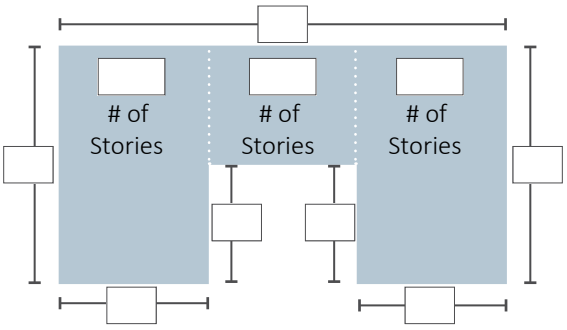
Element	Percent Damaged	Element	Percent Damaged
Foundation:		Floor Finish:	
Superstructure:		Plumbing:	
Roof Covering: Exterior		Electrical:	
Finish:		Appliances:	
Doors & Windows:		Interior Finish:	
Cabinets & Countertops:		HVAC:	

SQ. FOOTAGE CALCULATOR









Worksheet adapted from "Residential SDE Damage Inspection Worksheet" found in Appendix B, FEMA P-784, Substantial Damage Estimator User Manual and Field Workbook.

APPENDIX A: SAMPLE SI/SD WORKSHEET (FROM FEMA P-758)

Substantial Improvement Worksheet for Floodplain Construction

(for reconstruction, rehabilitation, addition, or other improvements, and repair of damage from any cause)

Property Owner: _____
Address: _____
Permit No.: _____
Location: _____
Description of improvements: _____

Present Market Value of structure ONLY (market appraisal or adjusted assessed value, BEFORE improvement, or if damaged, before the damage occurred), not including land value: $ _____

Cost of Improvement -
Actual cost of the construction** (see items to include/exclude) $ _____

Include volunteer labor and donated supplies.

Ratio = $\frac{\textbf{Cost of Improvement (or Cost to Repair)}}{\textbf{Market Value}} \times 100$ _____ %

If ratio is 50 percent or greater (**Substantial Improvement**), entire structure including the existing building must be elevated to the base flood elevation (BFE) and all other aspects brought into compliance.

Important Notes:

1. Review cost estimates to ensure that all appropriate costs are included or excluded.
2. If a residential pre-FIRM building is determined to be substantially improved, it must be elevated to or above the BFE. If a non-residential pre-FIRM building is substantially improved, it must be elevated or dry floodproofed to the BFE.
3. Proposals to repair damage from any cause must be analyzed using the formula shown above.
4. Any proposed improvements or repairs to a post-FIRM building must be evaluated to ensure that the improvements or repairs comply with floodplain management regulations and to ensure that the improvements or repairs do not alter any aspect of the building that would make it non-compliant.
5. Alterations to and repairs of designated historic structures may be granted a variance or be exempt under the substantial improvement definition) provided the work will not preclude continued designation as a “historic structure.”
6. Any costs associated with directly correcting health, sanitary, and safety code violations may be excluded from the cost of improvement. The violation must have been officially cited prior to submission of the permit application.

Determination completed by: _____

Date: _____

Residential SDE DAMAGE INSPECTION WORKSHEET
Single-Family, Town or Row House (Site Built Residences), or Manufactured House

Address: _____

SDE ADDRESS Tab

Subdivision / Community Information

Subdivision: _____ Parcel Number: _____

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

Community Information

NFIP Community ID: _____ NFIP Community Name: _____

Latitude: _____ Longitude: _____

Building Address

Owner First Name: _____ Owner Last Name: _____

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

City: _____ State: _____

County/Parish: _____ Zip: _____

Phone: _____ Cell Phone: _____

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

First Name: _____

Last Name: _____

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

City: _____ State: _____

County/Parish: _____ Zip: _____

Phone: _____ Cell Phone: _____

SDE STRUCTURE / DAMAGE / NFIP INFO Tab

Structure Attributes / Information

Residence Type: ____Single Family ____Town or Row House ____Manufactured House

Foundation: ____Continuous Wall w/Slab (Standard) ____Basement ____Crawlspace

____Piles ____Slab-on-Grade ____Piers and Posts

Superstructue: ____Stud-Framed (Standard) ____Common Brick ____ICF ____ Masonry

Roof Covering: ____ Shingles – Asphalt, Wood ____Clay Tile ____ Standing Seam (Metal)

____ (Standard) Slate

Exterior Finish: ____ Siding or Stucco (Standard) ____Brick Veneer ____EIFS

____ None – common brick, structural

HVAC System: ____ Heating and/or Cooling ____None

Story: ____ One Story (Standard) ____Two or More Stories

Structure Information

Year of Construction: _____

Quality of Initial Construction: ____ Low ____Budget ____Average ____Good ____Excellent

Residence Information _____

_____

_____

Inspector / Damage Information

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

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

Cause of Damage: ____ Fire ____ Flood ____ Flood and Wind ____ Seismic ____Wind ____Other

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

_____

_____

SDE STRUCTURE / DAMAGE / NFIP INFO Tab

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

_____ No Physical Damage Sustained _____ Vacant / Property _____ Resident Refused Inspection _____ Address Does Not Exist _____ Other (Explain)

_____

_____

_____

Duration of Flood:_____ Hours _____ Days

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

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

NFIP / Community Information

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

FIRM Zone: _____ Base Flood Elevation:_____

Regulatory Floodway: ___ Yes ___ No___Possible

*Community Information (if needed):*_____

_____

_____

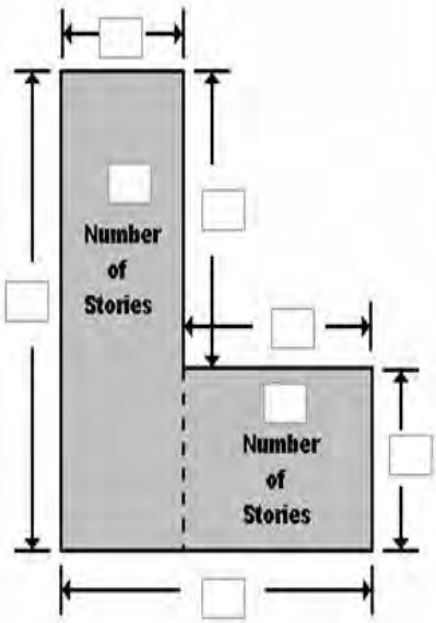
_____

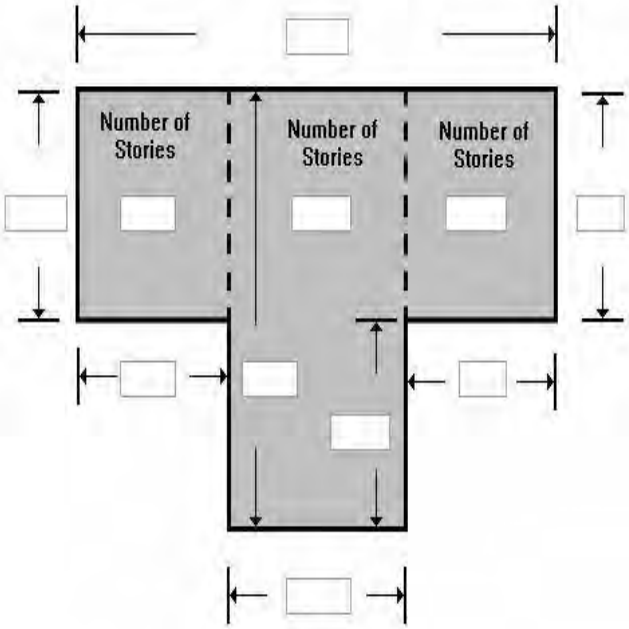
_____

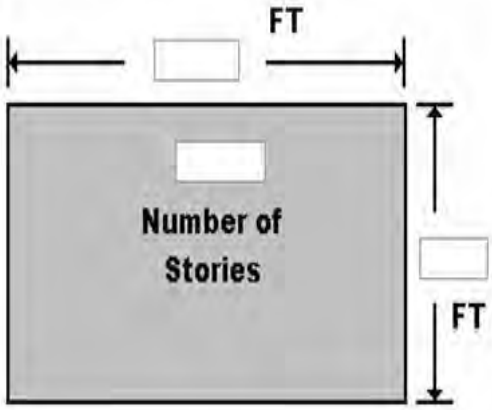
_____

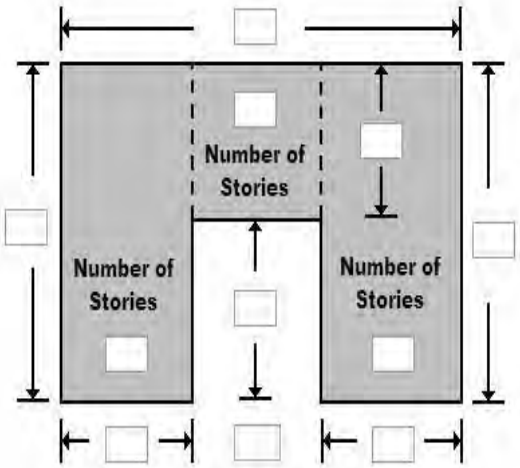
COST Tab

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









COST Tab

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

Geographic Adjustment: _____

Cost Adjustments

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

COST Tab

Additional Cost Adjustments

Adjustments	Quantity	Unit Cost	Item Cost

Cost Data Reference (source or name): _____

_____

_____

Cost Data Date: _____

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

Depreciation Rating:

____1. Very Poor Condition____ 2. Requires Extensive Repairs ____ 3. Requires Some Repairs

____ 4. Average Condition ____5. Above Average Condition____6. Excellent Condition____ 7. Other

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

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

_____

_____

_____

_____

_____

ELEMENT PERCENTAGE Tab

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

Residence Type: ____Single-Family **(SF)** House ____Townhouse ____Manufactured House (MH)

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

SDE OUTPUT SUMMARY Tab – *Optional User Entered*

Data Professional Market Appraisal: _____

Tax Assessed Value: _____ Tax Factor Adjustment: _____

Adjusted Tax Assessed Value: _____

Contractor's Estimate of Damage: _____

Community's Estimate of Damage: _____

Appendix D: Sample worksheet *from FEMA P-758 Appendix D*

Substantial Improvement Worksheet for Floodplain Construction For reconstruction, rehabilitation, addition, or other improvements, and repair of damage from any cause

Property owner _____

Address _____

Permit No. _____

Location _____

Description of improvements _____

_____

_____

Present Market Value of structure ONLY (market appraisal or assessed value, BEFORE improvement, or if damaged BEFORE damage occurred), not including land value:
$_____

Actual cost of the construction (see list of items to be included/ excluded):
$_____

Ratio = Cost divided by market value. Ratio = _____%

If ratio is 50% or greater (Substantial Improvement) entire structure including the existing building must be elevated to or above the base flood elevation (BFE) and all other aspects brought into compliance.

Important notes

1. Review cost estimates to ensure that all appropriate costs are included or excluded.
2. If a residential pre-FIRM building is determined to be substantially improved, it must be elevated to or above the BFE. If a non-residential pre-FIRM building is being substantially improved, it must be elevated or dry-floodproofed to or above the BFE.
3. Proposals to repair damage from any cause must be analyzed using the formula shown above.
4. Any proposed improvements or repairs to a post-FIRM building must be evaluated to ensure that the improvements or repairs comply with floodplain

management regulations and to ensure that the improvements or repairs do not alter any aspect of the building that would make it non-compliant.

5. Alterations to and repairs of designated historic structures may be granted a variance (or be exempt under the substantial improvement definition) provided the work will not preclude the structure's continued designation as a "historic structure."

6. Any costs associated with directly correcting existing health, sanitary and safety code violations may be excluded from the cost of improvement (or repair.) The violation must have been officially cited prior to submission of the permit application.

Determination completed by _____

Date _____

MITIGATION TARGETING WORKSHEET

Project: Municipality contact name and title _____ Date _____

Property Owner's Name: _____

Address (no PO Boxes) _____

Municipality: _____ County: _____ St.: _____ Zip: _____

County # _____ District # _____ Tax Map # _____ Parcel ID # _____ Pin #

Main House (incl 2nd floor) Ft^2 _____ Bsmt. Ft^2 _____ Gar. Ft^2 _____ Porches Ft^2 _____

Decks Ft^2 _____ Structure/Type & Material _____

Date Built: _____ FIRM Date: _____ Deed Book # _____ Page # _____

Foundation: _____ Basement: _____

Latitude: _____ Longitude: _____ Datum Used: _____

Photo File Name or File ID number: _____

Front: _____ Left: _____ Back: _____ Right: _____ High Water Mark: _____

Flood Ins.Policy no.

Repetitive Loss no if any _____

Prior Flood Damage

and CRS score if any

HISTORICAL and ENVIRONMENTAL CONSIDERATIONS

Age: _____ Historical Significance: _____

Environmental concerns: _____

If yes, please include

photo(s) and describe:

FIRM INFORMATION

Community Name _____ FIRM Panel Date; _____

FIRM CID# _____ FIRM Panel# _____

FIRM ZONE _____ Flooding Source _____

Flood Discharge Data		Flood Elevation Data	
10 Year	_____	10 Year	_____
50 Year	_____	50 Year	_____
100 Year	_____	100 Year	_____
500 Year	_____	500 Year	_____

ELEVATION INFORMATION

Prepared By: _____ Building Diagram # _____

Elevation Datum: _____ Lowest Adjacent Grade: _____

Elevation Lowest Floor: _____ Elevation First Floor : ; _____

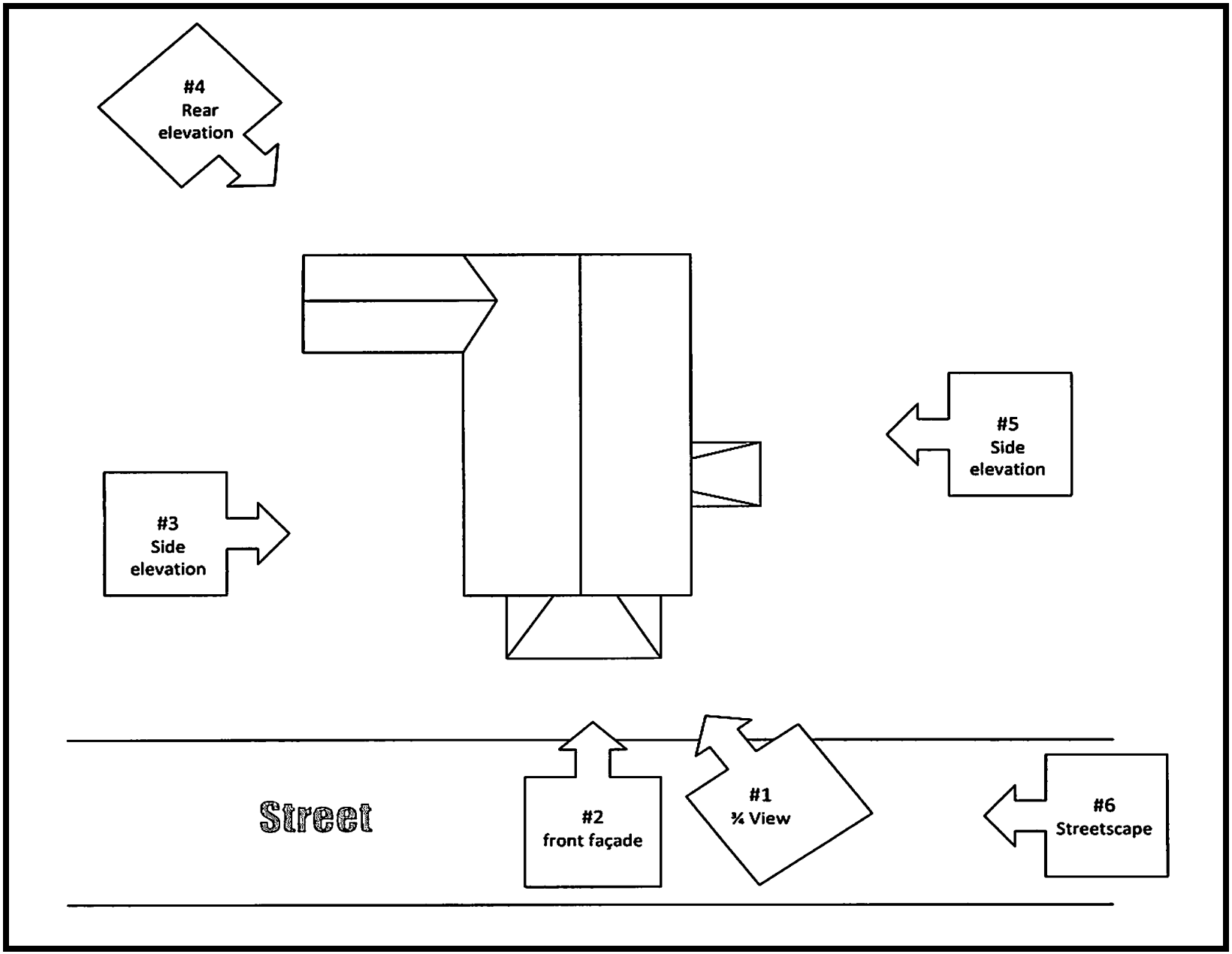
High Water: _____ Elevations Determined by: _____

Benchmark ID # Finished Basement Water Entry:

NOTES:

Front	Left
Back	Right

Property Owner:		Address:	
Municipality:	County:	County #:	District #:
Tax Map #:	Parcel #:	Latitude:	Longitude:


#4
Rear
elevation
#3
Side
elevation
#5
Side
elevation
Street
#2
front façade
#1
¾ View
#6
Streetscape

Depth Damage Field Estimate

FLOOD DAMAGE FIELD ESTIMATE			(Community)		(County)
(owner or renter)			Spoken to? Yes / No		(phone)
(street address)			(PO Community)	PA	(zip)
DATE OF INSPECTION	DATE OF CONSTRUCTION	FIRM PANEL	SOURCE OF DAMAGE	DURATION OF FLOODING	TIME OF INSPECTION
/ /	/ /		*Flood*	/ /	M.
Structure Located In:	Floodway	Flood Fringe	Floodway/Flood Fringe Limits Not Determined		Outside Identified Floodplain

WITH BASEMENT					WITHOUT BASEMENT					
	Depth in Feet	ONE STORY	TWO or MORE	SPLIT LEVEL		Depth in Feet	ONE STORY	TWO or MORE	SPLIT LEVEL	MANUFACTURED HOME
Height of Flooding Above Grade	+16	81.1%	76.4%	69.3%	Height of Flooding Lowest Floor and Above	+16	80.7%	69.2%	84.4%	SD
	+15	81.1%	76.4%	69.3%		+15	80.2%	67.7%	83.8%	SD
	+14	81.1%	75.4%	69.3%		+14	70.5%	65.9%	81.7%	SD
	+13	81.1%	73.7%	69.3%		+13	78.5%	63.8%	78.4%	SD
	+12	81.1%	71.4%	68.8%		+12	77.2%	61.4%	73.9%	SD
	+11	81.1%	68.4%	67.2%		+11	75.4%	58.7%	68.9%	SD
	+10	80.1%	64.8%	64.8%		+10	73.2%	55.7%	62.6%	SD
	+9	77.7%	60.8%	61.6%		+9	70.5%	52.4%	56.1%	SD
	+8	74.2%	56.4%	57.8%		+8	67.2%	48.8%	49.2%	SD
	+7	69.8%	51.8%	53.5%		+7	63.2%	44.9%	42.3%	SD
	+6	64.5%	46.9%	48.6%		+6	58.6%	40.7%	35.5%	SD
	+5	58.6%	41.9%	43.8%		+5	53.2%	36.2%	28.9%	SD
	+4	52.2%	36.9%	38.6%		+4	47.1%	31.4%	22.8%	SD
	+3	45.5%	31.9%	33.4%		+3	40.1%	26.3%	17.4%	
	+2	38.7%	27.0%	28.2%		+2	32.1%	20.9%	12.9%	
	+1	32.0%	22.3%	23.2%		+1	23.3%	15.2%	9.4%	
Flood Depth In Basement	8	25.5%	17.9%	18.5%	Flood Depth - Crawlspace	2	13.4%	9.3%	7.2%	
	7	19.4%	13.9%	14.2%		1	2.5%	3.0%	6.4%	
	6	13.8%	10.2%	10.4%		0	0.0%	0.0%	0.0%	
	5	9.0%	7.2%	7.2%						
	4	5.2%	4.7%	4.7%	Structures with damage estimates between 40% & 50% require further information to determine which flood protection standards apply.					
	3	2.4%	2.9%	3.1%						
	2	0.8%	1.9%	2.5%						
	1	0.7%	1.7%							
	0	0.0%	1.7%							

Notes:

For help with completing and using this form, see explanatory notes on reverse.

Inspected by:	telephone #	
Posted (Yes / No) / / as:	Initial Firm Date	Rev

The **DEPTH DAMAGE FIELD ESTIMATE** worksheet captures essential information to make Substantial Damage (SD) determinations for flood-related damages. It is intended that the worksheet should be mostly self-explanatory. The depth damage figures are based upon the USACE published Generic Depth-Damage Relationships. *(See http://www.corpsnedmanuals.us/FloodDamageReduction/FDRResources.asp.)* Following are a few comments and clarifications that will assist you when filling out the worksheet:

1. **JURISDICTION**: Since a property's mailing address (*e.g., Post Office Community*) is not always the same as jurisdiction, enter the correct information for each structure.

2. **SOURCE OF DAMAGE** indicates whether the damage was the result of flood, fire, wind, etc. or a combination of sources. Use the DEPTH DAMAGE FIELD ESTIMATE worksheet for flood-related damages.

3. **DATE OF INITIAL FIRM** refers to the community's Flood Insurance Rate Map (FIRM). The initial date indicates when the flood area was first identified by FEMA.

4. **FIRM PANEL**: Some communities have multiple panels. The panel number is found below the map title.

5. The **Depth in Feet to Lowest Adjacent Grade (LAG)** refers to the level of the flood water (*i.e.,* the table uses -8 feet as the basement floor level, so a depth of -6 feet results from 2 feet of floodwater in a basement).

6. Round depths to the nearest whole foot.

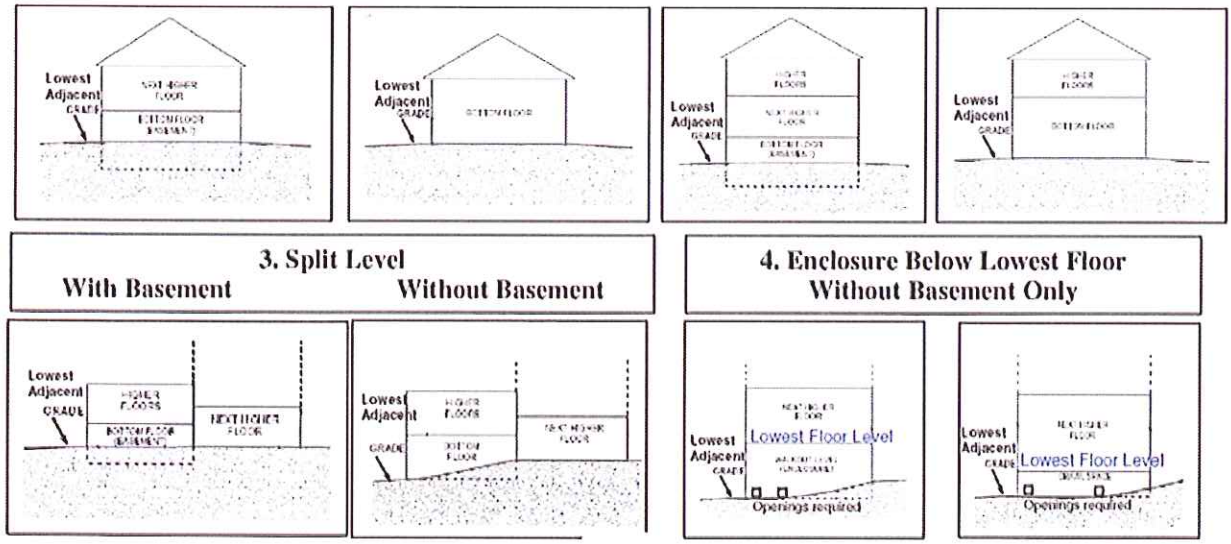
7. Property owners with structures that have damages in the 40% (shaded on table) should be asked to provide documentation of damage and repairs to ensure that the structure is/not substantially damaged.

8. For a structure with a compliant **Enclosure Below Lowest Floor** (see figure 4 below) use lowest floor instead of lowest adjacent grade to measure depth of flooding. Compliant enclosures must have openings.

9. Since currently, **Manufactured Homes** are not included in the USACE depth-damage tables; consider a floodwater depth of one foot above the lowest floor to indicate substantial damage.

10. Local Floodplain Official must give property owners **written notice** that their structure has been determined to be substantially damaged along with instructions to comply with local permit requirements.

For general questions regarding the National Flood Insurance Program and your community's participation, call your PA-DCED NFIP State coordinator at: 717-787-3003.



Attachment 5:
Example Determination Letters

Sample Substantial Damage Determination Letter

[Community's Letterhead]

[Date]

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

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

Dear Mr. and Mrs. Public,

Subsequent to the recent flooding event, a damage assessment has been completed on the property referenced above. This is a part of the **City of Floodville'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 Name:	Floodville, Missouri
Flood Damage Timeframe:	June, 2022
Parcel Zone Information:	Zone AE
Total Damages:	$65,000
Fair Market Value:	$100,000
Percent Damaged:	65.0%

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

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

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

Sincerely,

Floodplain Administrator
City of Floodville
Address:
Phone Number:

Sample *Not* Substantially Damaged Determination Letter

[Community's Letterhead]

[Date]

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

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

Dear Mr. and Mrs. Public,

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

Community Name:	Floodville, Missouri
Flood Damage Timeframe:	June, 2022
Parcel Zone Information:	Zone AE
Total Damages:	$35,000
Fair Market Value:	$100,000
Percent Damaged:	35.0%

The determination is that this structure is declared: **Not Substantially Damaged**

An approved Floodplain Development Permit is required and it is attached. Please sign and date the permit and return it to my office. Be advised that we will make another determination if you elect to perform work other than what is necessary to repair the damage, such as additional renovations or upgrades or building an addition. **Construction activities that are undertaken without a proper permit are violations and may result in citations, fines or other legal action.**

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

Sincerely,

Floodplain Administrator
City of Floodville
Address:
Phone Number:

Appendix E: Sample SI/SD letters

These letters are found in FEMA's P-758 publication, Appendix E

Sample Letter to notify property owners of a Determination that work constitutes <u>Substantial Improvement</u>

Notice of Substantial Improvement Determination (Residential)

Dear Property Owner:

We have reviewed your recent application for a permit to [*describe proposed improvement/addition*] your existing home that is located in a mapped Special Flood Hazard Area. As required by our floodplain management regulations and/or building code, we have determined that the proposed work constitutes substantial improvement of the building. This determination is based on a comparison of the cost estimate of the proposed work to the market value of the building (excluding land value). When the costs equal or exceed 50 percent of the market value of the building, the work is substantial improvement.

As a result of this determination, you are required to bring the building into compliance with the flood damage-resistant provisions of the regulations and/or code [*cite pertinent sections*].

We would be pleased to meet with you and your designated representative (architect/builder) to discuss how to bring your home into compliance. There are several aspects that must be addressed to achieve compliance. The most significant requirement is that the lowest floor, as defined in the regulations/code, must be elevated to or above the base flood elevation (BFE) [*or the elevation specified in the regulations/code*]. You may wish to contact your insurance agent to understand how raising the lowest floor higher than the minimum required elevation can reduce NFIP flood insurance premiums.

Please resubmit your permit application along with plans and specifications that incorporate compliance measures. Construction activities that are undertaken without a proper permit are violations and may result in citations, fines, or other legal action.

Sample Letter to notify property owners of a Determination that work constitutes repair of <u>Substantial Damage</u>

Notice of Substantial Damage Determination (Residential)

Dear Property Owner:

We have reviewed your recent application for a permit to repair your existing home that was damaged by [*insert cause of damage*]. The building is located in a mapped Special Flood Hazard Area. As required by our floodplain management regulations and/or building code, we have determined that the building has been substantially damaged. This determination is based on a comparison of the cost estimate of the work required to restore the building to its pre-damage condition to the market value of the building (excluding land value). When the cost to repair equals or exceeds 50 percent of the market value of the building, the work is repair of substantial damage.

As a result of this determination, you are required to bring the building into compliance with the flood damage-resistant provisions of the regulations and/or code [*cite pertinent sections*].

We would be pleased to meet with you and your designated representative (architect/builder) to discuss how to bring your home into compliance. There are several aspects that must be ad- dressed to achieve compliance. The most significant requirement is that the lowest floor, as defined in the regulations/code, must be elevated to or above the base flood elevation (BFE) [*or the elevation specified in the regulations/code*]. You may wish to contact your insurance agent to understand how raising the lowest floor higher than the minimum required elevation can reduce NFIP flood insurance premiums.

If the damage was caused by flooding and if you have a flood insurance policy from the Nation- al Flood Insurance Program, you should contact your adjuster to discuss the Increased Cost of Compliance (ICC) coverage. This coverage may provide a claim payment to help pay for work required to bring your home into compliance. Your adjuster can explain that the ICC claim may also be used to pay certain costs associated with demolishing and rebuilding your home, or moving your home to a site outside of the floodplain.

Please resubmit your permit application along with plans and specifications that incorporate compliance measures. Construction activities that are undertaken without a proper permit are violations and may result in citations, fines, or other legal action.

Sample Letter to notify property owners of a Determination that work <u>does NOT</u> constitute repair of Substantial Damage

Notice of Determination (Residential)

Dear Property Owner:

We have reviewed your recent application for a permit to repair your existing building that was damaged by [*insert cause of damage*]. The building is located in a mapped Special Flood Hazard Area. As required by our floodplain management regulations and/or building code, we have determined that the work proposed to repair the damage does not constitute repair of substantial damage. This determination is based on a comparison of the cost estimate of the work required to restore the building to its pre-damage condition to the market value of the building.

Please be advised that we will make another determination if you elect to perform work other than what is necessary to repair the damage, such as additional renovations or upgrades or building an addition. Construction activities that are undertaken without a proper permit are violations and may result in citations, fines, or other legal action.

Non-Flood Related Substantial Damage Determination Letter:

[Jurisdiction Name]
[Jurisdiction Address Line 1]
[Jurisdiction Address Line 2]

[Date]

[Property Owner Name]
[Property Owner Address Line 1]
[Property Owner Address Line 2]

Subject: Damage Estimation for Property Located at [Property Address and Parcel No.]

Dear [Property Owner],

On [date] the subject property was damaged by [fire / tornado / wind / other]. Your property is located in Flood Zone [A, AE, A1-30, AH, AO]. When a property in a special flood hazard area is damaged, the local jurisdiction is required to perform damage estimation in accordance with [Ordinance/Regulation/Resolution and No.]. The damage estimation for your property has been determined to be [percentage]. This number is based on the ratio of the cost to repair the structure to its pre-flood market value. The fair market value of your structure was determined to be [dollar amount]. The cost to repair is estimated to be [dollar amount]. Please see the documentation attached.

Prior to beginning repairs to your structure, please complete the required Floodplain Development Permit Application (enclosed). Failure to obtain a required permit is a violation of [Ordinance/Regulation/Resolution and No.]. We regret your loss and the damage you have sustained. We will try to make the permitting process as easy as we can for you.

Because the damage to your building has been determined to be greater than 50% of fair market value, your building has been determined to be *substantially damaged*. Substantially damaged properties are required to be brought into full compliance with floodplain regulations found in [Ordinance/Regulation/Resolution and No.]. Residential structures must be elevated [height freeboard] above the base flood elevation (BFE) . Non-Residential structures must be flood-proofed or elevated to [height freeboard].

If you disagree with the damage estimation there is an appeal process. An appeal will require additional information such as [contractor's estimate/insurance adjusted claim/licensed appraisal/other]. Details about an appeal and about how the damage estimation was done can be discussed in more detail by calling this office. We are sure you want to repair your property as soon as possible.

Non-Flood Related Substantial Damage Determination Letter (Cont.)**:**

[Local jurisdiction] participates in the National Flood Insurance Program. Failing to enforce floodplain damage requirements puts [local jurisdiction] in jeopardy of losing flood insurance, disaster assistance and federally backed loans and grants for our citizens.

Thank you in advance for your cooperation and assistance at a difficult time.

Sincerely,

[Name Community Official], Floodplain Manager

[Contact Information]

CC: [City Attorney/County Attorney]

Enclosed: [Ordinance/Regulation/Resolution and No.]
[Damage determination worksheets / documentation]
[Floodplain Development Permit]

Flood-Related Substantial Damage Determination Letter:

[Jurisdiction Name]
[Jurisdiction Address Line 1]
[Jurisdiction Address Line 2]

[Date]

[Property Owner Name]
[Property Owner Address Line 1]
[Property Owner Address Line 2]

Subject: Damage Estimation for Property Located at [Property Address and Parcel No.]

Dear [Property Owner],

On [date], the subject property was damaged by a flood. Your property is located in Flood Zone [A, AE, A1-30, AH, AO]. When a property in a special flood hazard area is damaged, the local jurisdiction is required to perform damage estimation in accordance with [Ordinance/Regulation/Resolution and No.]. The damage estimation for your property has been determined to be [percentage]. This number is based on the ratio of the cost to repair the structure to its pre-flood market value. The fair market value of your structure was determined to be [dollar amount]. The cost to repair is estimated to be [dollar amount]. Please see the documentation attached.

Prior to beginning repairs to your structure, please complete the required Floodplain Development Permit Application (enclosed). Failure to obtain a required permit is a violation of [Ordinance/Regulation/Resolution and No.]. We regret your loss and the damage you have sustained. We will try to make the permitting process as easy as we can for you.

Because the damage to your building has been determined to be greater than 50% of fair market value, your building has been determined to be *substantially damaged*. Substantially damaged properties are required to be brought into full compliance with floodplain regulations found in [Ordinance/Regulation/Resolution and No.]. Residential structures must be elevated [height freeboard] above the base flood elevation (BFE) . Non-Residential structures must be flood-proofed or elevated to [height freeboard].

You are welcome to contact this office to schedule a consultation to discuss your options for bringing the building into compliance. Increased Cost of Compliance (ICC) funds could be available for those who have flood insurance through the National Flood Insurance Program (NFIP). Contact your claims adjuster for details. *NOTE: Buildings already in compliance will not qualify for ICC so do not include statements about ICC for those buildings.*

If you disagree with the damage estimation there is an appeal process. An appeal will require additional information such as [contractor's estimate/insurance adjusted claim/licensed

Flood-Related Substantial Damage Determination Letter (Cont.)**:**

appraisal/other]. Details about an appeal and about how the damage estimation was done can be discussed in more detail by calling this office. We are sure you want to repair your property as soon as possible.

[Local jurisdiction] participates in the National Flood Insurance Program. Failing to enforce floodplain damage requirements puts [local jurisdiction] in jeopardy of losing flood insurance, disaster assistance and federally backed loans and grants for our citizens.

Thank you in advance for your cooperation and assistance at a difficult time.

Sincerely,

[Name Community Official], Floodplain Manager

[Contact Information]

CC: [City Attorney/County Attorney]

Enclosed: [Ordinance/Regulation/Resolution and No.]
[Damage determination worksheets / documentation]
[Floodplain Development Permit]