



SUBSTANTIAL IMPROVEMENT/SUBSTANTIAL DAMAGE (SI/SD)

Substantial Damage Fundamentals

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).

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 you have 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'll 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'll 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 State and Federal 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 about how your community will return to the day to day/reinstate ongoing practices.

OVERVIEW

When a structure in the Special Flood Hazard Area (SFHA) is more than 50% modified (damaged, repaired or improved), the structure must be brought into compliance with National Flood Insurance (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 floodplain management programs to reduce future flood damage.

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 SD Fundamentals document is to clarify the SI/SD process and provide roles and responsibilities, as well as the steps and resources that a community can use to conduct the SI/SD determination process.

Most important, communities are required to execute the SI/SD process to remain in compliance with the minimum National Flood Insurance Program (NFIP) requirements and to maintain their good standing in the program. 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.



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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 that undertake the SI/SD determination themselves can complete the process efficiently, effectively, and in a timely manner. 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.



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.

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 SFHAs. Informing the public about the requirements may alleviate some of the difficulties that can occur when uninformed owners apply for permits. 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 SFHAs and they all convey the same message 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 SFHAs.
- 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 plan should also have procedures for physically inspecting damaged properties post-disaster and collecting information to make SI/SD determinations. Developing an administrative procedure that is supported with FEMA 784 – Substantial Damage Estimator Tool will help communities better manage post-disaster recovery and will give staff the knowledge and ability to provide reasonable and defensible SI/SD determinations.

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 local SI/SD lead should set guidelines in plans and procedures for interactions with residents and structure occupants (see Step 4: Identifying Available Personnel for more information on the SI/SD Manager role). 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.



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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. 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 walk from structure to structure and be able to make the evaluations and judgments 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.

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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. 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.

The initial screening should also identify areas that may either need to be prioritized later or require coordination 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.

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ESTABLISHING SUBSTANTIAL IMPROVEMENT/SUBSTANTIAL DAMAGE DETERMINATION PROCESS AND METHODOLOGY

Before the 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 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 OF THE INVENTORY AREA

Delineate the general limits of the inventory area on a community map that has address information, tax parcel or property boundaries, and the area of impact from the hazard.

STEP 3: PERFORM AN INITIAL SCREENING OF STRUCTURES IN THE INVENTORY 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.

STEP 4: DEFINE THE SCOPE OF THE INVENTORY

The scope of inventory is determined by finalizing the size of the impacted area, the number of damaged structures, and the number of days needed to complete the inspections.

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.

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COMMUNICATING DAMAGE TO PARTNERS (LOCAL/STATE/FEDERAL)

Since floodplain ordinances are established at the local level, local and State officials may use different damage percentages and different valuations so long as they are not below FEMA NFIP standards.

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. As previously discussed in Step 1, FEMA does not make SI/SD determinations and does not notify any property owner of a determination. However, FEMA damage assessment teams may be asked to respond to local requests to assess the extent of disaster-caused damage to structures. The results are provided to local jurisdictions, which will make SI/SD determinations based on their own ordinances.

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. Communities are responsible for making SI/SD determinations. The determination is the notification from the community to the property owner based on the assessment by the community official.

FEMA mitigation experts have been and continue to be in close contact with 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.

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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. Communities must make SI/SD determinations regardless of whether there has been an application for a building permit.

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, flyers, notices on damaged structures, press releases, and letters mailed to property owners can all be used to provide information on local floodplain ordinance requirements and SI/SD requirements. The building inspector or local official should educate themselves on the damage assessment process, reconstruction methods, and available mitigation programs. Communities must be prepared for residents who are angry that they cannot start repairs immediately.

The perfect window of opportunity to ensure that flood damages do not occur again is after a flood. Federal or State mitigation programs are available and there are experts on mitigation to discuss recovery options and funding programs. Public meetings can be arranged for impacted communities to introduce victims to all options that are available.

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MONITORING AND REINTEGRATION

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. In fact, FEMA has a responsibility to conduct community monitoring activities and will often provide support to ensure that minimum compliance requirements are met.