



**Developing a  
Substantial Damage Management Plan  
for Credit under the  
Community Rating System  
of the  
National Flood Insurance Program**



2021

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*Cover photos: Substantially damaged home in Jersey County, Illinois. Left to right: flooded; substantially damaged; during elevation process; mitigated.*

# Background

All communities participating in the National Flood Insurance Program (NFIP) have adopted, and are expected to enforce, a floodplain management ordinance that meets or exceeds the NFIP minimum standards at 44 *CFR* §60.3, including those addressing substantial damage and substantial improvements within the community's floodplain area. Communities that participate in the Community Rating System (CRS) can receive credit points for going beyond those basic standards by developing a detailed, written plan for managing the susceptibility of buildings within their jurisdictions to substantial damage from floods and other hazardous events.

Such a plan helps increase awareness of flood risk areas, identifies vulnerable structures and neighborhoods, and ensures that there is a strategy in place for making damage determinations and enforcing the substantial damage requirements if a flood occurs. In addition, the plan, and the process of producing it, fosters communication with residents and elected officials and helps develop long-term actions to mitigate properties and reduce future losses.

The ongoing training in substantial damage, public awareness efforts, preparation for the necessary post-flood activities, investigation of mitigation options, and other tasks credited under this CRS element can take place at any time. If a flood does occur, the effort will be paid back many times over in efficiency, minimizing future damage, and building community resiliency.

## About this Guide

This guide assumes the reader already has a basic understanding of the NFIP regulations and, specifically, substantial damage regulations. Anyone not familiar with those standards can access dozens of federal and state publications as well as training opportunities on substantial damage regulations and post flood activities (see box on page 7).

Note that the regulations of the National Flood Insurance Program (NFIP) require that a community address substantial building damage that is caused by ANY hazard, the measures addressed in this guide focus primarily on floods.

The following discussion provides information about each of the substantial damage management plan components, the planning process, how CRS credit is received, and the documentation required for credit.

# CRS Credit for Managing Substantial Damage

CRS credit for a substantial damage management plan is available under element SDP, described in Section 512.d of the *CRS Coordinator's Manual*. Note this is a new section introduced in the 2021 *Addendum to the CRS Coordinator's Manual*. Both the *Coordinator's Manual* and the *Addendum* are available from the [CRS page of the FEMA website](#).

Three levels of SDP credit are available. The maximum credit is a total 140 points, the sum of these three components:

1. The base credit (sub-element SDP1), is 40 points, for the development of substantial damage management plan. This credit must be obtained before a community is eligible for the other two levels.
2. After a community develops a plan credited in SDP1, then 50 additional points are available in sub-element SDP2 if the community also pre-populates FEMA's Substantial Damage Estimator (SDE) with data on all properties with the potential to be substantially damaged.
3. After a community develops a plan credited in SDP1, then 50 additional points are available in sub-element SDP3 if the community also considers pre-event mitigation alternatives for all properties with the potential to be substantially damaged.

To receive CRS credit for sub-element SDP1, the community's substantial damage management plan must meet all seven credit criteria described in Section 512.d of the *Addendum to the CRS Coordinator's Manual*. Among those criteria are that the plan be generated using the six-step process (set out in credit criterion (3), below).

## Credit Criteria for SDP1

As with other CRS planning elements (such as element FPM), CRS credit is dependent upon the community's following an appropriate process. Both the steps for developing a substantial damage management plan and the content of the plan are important for CRS credit. Seven basic criteria must be met to receive SDP1 credit:

### **(1) Use appropriate definitions of substantial damage.**

The substantial damage management plan must be developed using a definition of substantial damage that meets or exceeds the NFIP definition of substantial damage (see Step 1(a) below).

### **(2) Address cumulative substantial improvements and/or lower substantial damage thresholds, if applicable.**

Many communities track damage to a given structure cumulatively over a specified period (e.g., the life of the structure, 10 years, etc.). CRS credit is provided under Activity 430 for communities that track cumulative substantial damage (called cumulative substantial improvement or CSI). Other communities have adopted lower substantial damage thresholds (such as 40%) in their local floodplain ordinance. CRS credit is provided in element LSI under Activity 430 when communities adopt a lower substantial damage threshold.

If a community is receiving CRS credit for cumulative substantial improvement (element CSI) under Activity 430 (Higher Regulatory Standards), then the substantial damage management plan must reference the community's cumulative substantial damage definition that is credited under CSI and also describe the community's process for tracking cumulative substantial improvements. Likewise, if a community is receiving credit for having a lower threshold for substantial improvement (element LSI), then the definition of lower substantial improvement must be referenced.

***(3) Use the six-step planning process to generate the plan.***

The plan must be the outcome of the six-step planning process (see details in subsection, below). All steps are required, but steps 2–5 do not have to be done in the order listed. Note that when the six-step process is followed, the seven credit criteria will be met.

***(4) Prepare an evaluation report every year.***

Every year, the community must prepare a report evaluating its substantial damage management plan. The report must review the plan's pre-event action items, describe which of those were implemented (or not implemented), and recommend changes as appropriate. It should highlight any flood damage that occurred since the development of the plan or since the previous annual evaluation and address any changes or improvements to the plan resulting from that event.

During the annual evaluation the community also should ensure that its list or database of properties at risk of substantial damage is up to date. The evaluation report should note any changes to the community's regulations that affect substantial damage or substantial improvement, such as changes to definitions.

If the community's substantial damage management plan is updated during the year, the updated plan can be submitted to meet the annual evaluation requirement. The annual report is required at the community's annual recertification (see credit criteria (6) below).

***(5) Inform elected officials.***

The substantial damage management plan does not need formal approval or adoption by the city council, village board, or county/parish officials. However, a copy of the plan must be submitted to the community's governing body. In years in which the plan is not updated, the annual evaluation report required under criterion (4), above, must also be submitted to that body. This ensures that elected officials are aware of the community's substantial damage management initiatives and the community actions that will be necessary after an event.

If private or sensitive information that was gathered using FEMA data (such as names, street addresses, or claims information) is included in the report, then a summary report(s) must be prepared for the governing body, committees, media, and the public. The community should also be aware of locally gathered data that may be considered private.

**(6) *Revise and update the plan as appropriate and make current versions available.***

It is anticipated that communities will modify their plans over time as circumstances change. When updates or revisions are made to the substantial damage management plan, the community must provide the latest version in time for each CRS cycle verification visit. The update or revision should include a review of each of the six planning steps. If no update or revision has been made, the annual evaluation report must still be submitted, stating that the previous version remains in effect.

**(7) *Make the plan available to the state and FEMA.***

A copy of the current substantial damage management plan must be provided to the State NFIP Coordinator and the FEMA Regional Office, if requested.

## **Developing a Plan for Managing Substantial Damage**

Addressing substantial damage after a flood or other hazardous event is a requirement of the NFIP. Every NFIP community must do it, and CRS communities are expected to do it better. The substantial damage management plan evaluates potential damage to buildings, examines what can be done to mitigate the potential for damage to those buildings, and lays out the strategy to address substantial damage after any hazardous event (flood, fire, earthquake, tornado, etc.). This CRS activity credits plans and actions for managing substantial damage that a community takes before a flood or hazardous event.

A substantial damage management plan identifies available data about flood prone buildings, helps educate community leaders and the public, guides the community in building its capacity to conduct post-flood substantial damage determinations and

outlines its procedures for doing so, and specifies the steps the community will take if buildings are determined to be substantially damaged. The plan also considers mitigation options to reduce long-term impacts from flooding.

A formal committee is not required for the development of a substantial damage management plan. The substantial damage management plan does not need to be adopted by the local government. However, the plan should be developed with the participation of the community

### **Substantial Damage and the NFIP**

Whenever a building located in a mapped special flood hazard area is damaged from ANY source (flood, fire, wind, or human), the community must determine whether that structure has been “substantially” damaged. “Substantial” damage means that the cost of repairs (labor and materials) equals or exceeds 50% of the structure’s “pre-damaged” market value. The determination is done by calculating the substantial damage (or substantial improvement) ratio: the cost of the repairs or improvements divided by the market value of the building before it was damaged. If the result is 50% or more, then the damage or improvement is said to be “substantial.” Many communities track damage over a period of years and enforce cumulative substantial damage.

### **How to Calculate Substantial Damage**

$$\text{Percentage damaged (or improved)} = \frac{\text{Cost of Repairs (or Improvements)}}{\text{Market Value of Building, Pre-damage}}$$









CRS coordinator, the community floodplain administrator, the building department, and any other local officials involved with the substantial damage determination process.

A community may receive CRS credit for a floodplain management plan (element FMP in Section 512.a), a repetitive loss area analysis (element RLAA in Section 512.b), as well as for its substantial damage management plan. A community that has no repetitive loss properties on FEMA's list may still receive SDP credit.

## The Six-step Planning Process

Credit criterion (3) requires a community to develop its substantial damage management plan by following the six-step process described in Section 512.d of the *Addendum to the CRS Coordinator's Manual*. The steps are described more fully below. Additional resources and a checklist that will help with plan development are available on [the CRS Resources website](#) to help communities develop their plans.

	<b>1. Assess Vulnerability</b> <ul style="list-style-type: none"> <li>Review regulations</li> <li>Identify risk</li> <li>List and map structures</li> </ul>
	<b>2. Assemble a Team</b> <ul style="list-style-type: none"> <li>Identify staff &amp; needs</li> <li>Organize team</li> </ul>
	<b>3. Identify Post-flood Actions</b> <ul style="list-style-type: none"> <li>Plan substantial damage determination process</li> <li>Communicate with community</li> </ul>
	<b>4. Build a Database</b> <ul style="list-style-type: none"> <li>Collect basic building information</li> <li>Pre-populate FEMA's SDE (for SDP2 credit)</li> </ul>
	<b>5. Identify Pre-Flood Actions.</b> <ul style="list-style-type: none"> <li>Engage the public</li> <li>Explore mitigation alternatives (for SDP3 credit)</li> </ul>
	<b>6. Implement and Update the Plan</b> <ul style="list-style-type: none"> <li>Annual evaluation reports</li> <li>Periodic update of the plan</li> </ul>

### Step 1. Assess the community's vulnerability to substantial damage.

During this first step, the community reviews its current floodplain ordinance and regulatory authorities to ensure that the substantial damage regulations meet or exceed NFIP requirements. The community also must examine the areas where substantial damage is likely to occur and identify specific structures that are at risk of substantial damage.

To demonstrate that it has followed Step 1, the community must incorporate the following five components of the assessment into its written substantial damage management plan.

#### (a) A review of the substantial damage regulations and definitions use by the community.

The community's adopted floodplain ordinance, building codes, and/or county or state building codes must include a definition of substantial damage and substantial improvement that meets or exceed the NFIP definition of substantial

#### Cumulative Substantial Damage

Many communities have adopted ordinances that track "cumulative" damage and improvements. Cumulative substantial damage or cumulative substantial improvement occurs when the sum of the costs for all the repairs or improvements made during the specified time reaches 50% or more of the original market value of the building. Cumulative substantial damage is tracked by documenting the proportion of damage (expressed as a percentage) after each event. Most communities track damage cumulatively over a specified period (e.g., life of structure, 10 years, etc.).

damage/substantial improvement in 44 *CFR* §59.1. In some local ordinances, “substantial damage” and “substantial improvement” are defined separately. In others, the definitions are combined under “substantial improvement.” If that is the case, the community needs to make sure that the substantial improvement definition also encompasses repairs made to buildings.

The definition should be clear on using the market value to determine building value. The definition must also be clear on how to determine repair costs.

Many CRS communities have adopted substantial damage/substantial improvement definitions that track cumulative impacts. If the definition includes tracking cumulative substantial damage regulations, the period used to track cumulative damage (10 years, life of the building, etc.) should be included in the definition. If the community track cumulative substantial damage/substantial improvement, records from prior damaging events must be maintained and tracked so the community will know when to enforce its substantial damage regulations.

Finally, any other regulations that apply to substantial damage should be identified and incorporated into the substantial damage management plan. For example, the ordinance likely has a section on the duties of the local floodplain manager and another outlining specific building protection requirements. Often these sections will refer to the permit review process and to enforcement of substantial damage. Building codes or zoning regulations also may refer to substantial damage.

**(b) A description of previous substantial damage and substantial improvement determinations made by the community.**

If the community has done prior damage determinations, a short description and history of those must also be included in the plan. The description should include the source of the

**Questions to be Addressed in Step 1 and Included in the Written Plan**

**Regulations**

- Where are your community’s substantial improvement/substantial damage regulations found?
- How does your community define substantial damage/substantial improvement?
- What additional substantial improvement/substantial damage procedures and information can be found in your community’s regulations?

**Prior Damage Determinations**

- What are your community’s primary flood risks?
- What is your community’s flood damage history?
- Has your community done previous substantial damage determinations and how were they done?

**List and Map of Substantial Damage Properties**

- Where are your community’s substantial damage areas?
- How were the substantial damage areas identified?
- What are the potential substantial damage properties?

**Buildings and Flood Factors**

- What types of buildings are in the substantial damage area?
- What type of residential structures lie within the substantial damage area (single-family, multi-family, manufactured housing, etc.)?
- Are there other locally regulated flood risk areas not shown on the flood map?



damage, the number of affected structures, damage determination method used, and the post-event actions taken (such as compliance or mitigation). In lieu of a description, communities that track cumulative substantial damage may include a local database for tracking damage in the plan. This tracking database should include a list of buildings that were damaged and the extent of the damage. Communities may also provide records from FEMA's Substantial Damage Estimator to show prior damage determinations.

A description of the primary flood risk and flood damage history related to that risk would also be appropriate in this section of the plan. This does not need to be a lengthy discourse, just a summary of flood risk, perhaps previously identified impacts at various flood stages.

### **Information on Substantial Damage**

- A fundamental source of information is the [substantial damage page of FEMA's website](#).
- Many [FEMA Regional Offices](#) have their own guidance on substantial damage.
- Most states have guides to their own substantial damage standards and procedures. They are available through the [State NFIP Coordinator](#).

### **Assessing Vulnerability to Substantial Damage**

- [Developing a Repetitive Loss Area Analysis for CRS Credit](#) is intended to address repetitive flood loss properties, but its information on identifying and mapping structures applies to substantial damage properties as well.
- The [Privacy Act page of the FEMA website](#) tells how to comply with the Privacy Act, which is useful when assembling property information in your substantial damage database.
- ["Make Your Point Using Aggregation"](#) is an Environmental Systems Research Institute (ESRI) tutorial on using smart mapping and other map viewer capabilities to show point data in more meaningful ways.

### **Reading Material / Handouts**

- [FEMA Substantial Damage Desk Reference](#) (FEMA P-758)
- ["Substantial Damage."](#) (FEMA Fact Sheet)

### **Courses at FEMA's Emergency Management Institute**

- Preparing for Post-Disaster Responsibilities (G0194.4)
- Advanced Floodplain Management Concepts III (G0284)
- Substantial Improvement/  
Substantial Damage (G0284.5)
- Using the Substantial Damage Estimator 2.0 Tool (IS0284)
- Substantial Damage Estimation for Floodplain Administrators (IS0285)

See the [EMI course schedule](#).

A suitable description of flood risk can be found in the Flood Insurance Study of most communities. Historical flood data may also be obtained from the state, the community's Hazard Mitigation Plan, or the [U.S. Geological Survey National Water Information System](#). The [National Weather Service river forecast website](#) displays river gages across the country, many of which include historical flood events as well as an inventory of potential damage tied to various river stages.

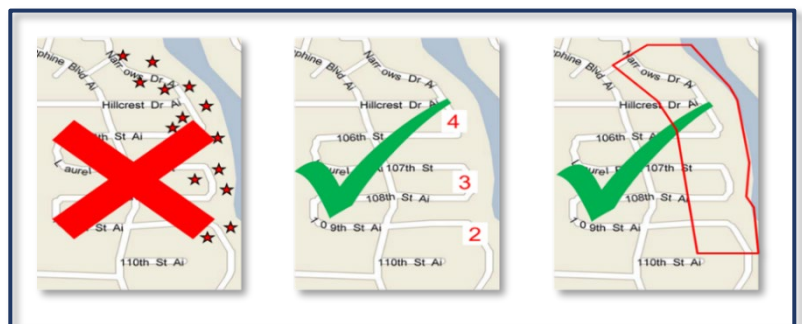
**(c) A list of properties and a map showing buildings that have the potential to be substantially damaged.**

An awareness of at-risk areas and pre-identifying which buildings in the community have the potential for substantially damaged is critical. This inventory is one of the primary components of the plan process. The inventory should include any structures in the community that are susceptible to being substantially damaged in a flood. Depending on the community's particular circumstances, this inventory could include

- All buildings in the mapped floodplain,
- Buildings that are (or suspected to be) below the base flood elevation,
- Buildings within a repetitive loss area (as identified per Section 502 of the *Coordinator's Manual*),
- Properties where previous substantial damage determinations have been made,
- Any buildings that could meet the cumulative substantial improvement definition, if applicable.

Within the substantial damage management plan, careful consideration should be given to both the inventory of structures and the map that identifies those buildings. CRS communities that have completed the Repetitive Loss Area Analysis (for element RLAA credit) will have already done this exercise for repetitive loss structures. The RLAA inventory can be used to meet the SDP requirement, however, the substantial damage management plan must include all buildings in the community subject to potential substantial damage, even those that are not on the repetitive loss inventory. This will require some additional work to review the repetitive loss inventory to ensure that all those structures are included on the list of potential substantial damage properties. Likewise, it should be ensured that all structures subject to substantial damage are included on the substantial damage list even if they are not on the repetitive loss inventory.

Specific structures determined to be susceptible to substantial damage by using FEMA flood insurance claims data or prior disaster assistance payments cannot be identified in a public document due to the federal Privacy Act. Instead, if NFIP data are relied upon, it is best to map or name only general areas rather than specific structures as shown in the box at right.



Communities can identify structures using local data, but again, privacy concerns should be discussed with the community's attorney.

Communities with GIS capabilities can easily develop generalized maps showing potential substantial damage areas that will meet the requirements of this step. An inventory of structures can then be developed using this map layer as shown at right.

In addition, communities that currently track cumulative substantial damage can use the inventory of structures with prior damage determinations as part of the list required in this step.



**(d) A description of other building or flood factors that the community considered during the assessment.**

Although the NFIP regulations require the enforcement of substantial damage regulations only within the FEMA-mapped floodplain, many communities have mapped and adopted regulations for additional localized flood risks, such as urban flooding areas, small ponding areas, sheet flow areas, or small watershed drainageways. These locally mapped and regulated floodplain areas must be included in the substantial damage management plan. Another special factor that must be incorporated into the plan could be an adopted procedure for tracking cumulative damage and/or improvements.

**(e) A general description of the buildings identified in the in the potential substantial damage list.**

This description should include information such as the percentage of residential and non-residential buildings in the community.

Other information, such as type of residential structures (single family, manufactured homes, multi-family, etc.) should also be included.

The list or inventory of properties that could be substantial damaged due to floods can be included in the substantial damage management plan itself or provided as a separate “stand-alone” document or attachment to the substantial damage management plan (e.g., an Excel® spreadsheet or other database).

In Step 4 the list of properties developed in Step 1 must be populated with relevant building data needed to complete a damage assessment, such as address, owner, square footage, and building construction attributes. Step 1 and Step 4 complement each other. In many cases, a single populated database can meet the requirements of both Step 1 and Step 4. Fully populating this list and loading that database into the FEMA Substantial Damage Estimator tool will meet the requirements of optional SDP2 credit (see page 20).

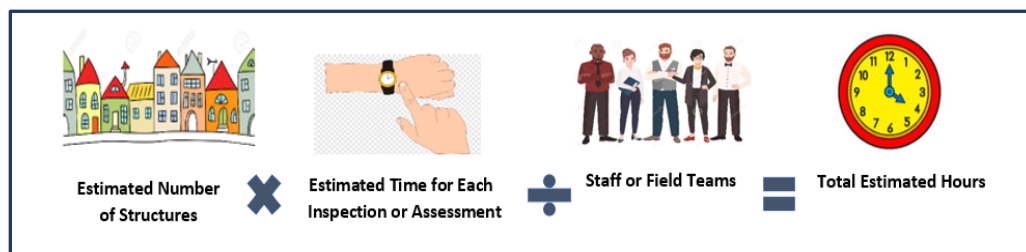
## **Step 2. Identify the community's team for the management of substantial damage to properties.**

A team is not required for development of the substantial damage management plan, but it is strongly recommended.

Assembling several knowledgeable and experienced people to work together on all of the planning steps will contribute to the effectiveness of the plan.

Although the community floodplain administrator is responsible for making sure that substantial damage determinations are completed, other personnel or departments will likely need to be involved the plan development. The same people will most likely be involved with the post-event efforts. A team will almost certainly be needed to help conduct the actual damage assessments and determinations after a flood, which is rarely a one-person job. Therefore, in addition to the floodplain administrator, a community should build a team that includes

- **The department or office responsible for issuing permits**, and the department or office that tracks cumulative substantial damage/ substantial improvement, if applicable.
- **Sufficient personnel for the substantial damage work effort after a major event.**  
In Step 1, the community listed the structures with potential risk for substantial damage. Using that number, the time required for each inspection, damage determination, and follow up can be calculated. The often-overlooked need for clerical or administrative staff to help with records and mailings should be included. This time estimate will allow an estimate of the number of staff and the number of field teams needed to complete damage determinations after a flood.



- **Personnel from other sources besides the community's staff.** If local resources are expected to be insufficient in a large disaster, the plan should identify outside resources

### **Questions to be Addressed in Step 2 and Included in the Written Plan**

#### **Substantial Damage Responsibilities**

- Who is responsible for enforcement of the community's floodplain regulations?
- Who will make up the substantial damage team and what are their responsibilities?
- What additional staff and/or departments will be used to make damage determinations?
- What is the organizational structure of the substantial damage team?

#### **Other Personnel Available in Disaster**

- What personnel and resources from outside the community are available if needed?
- What agreements are in place to allow outside resources?

that will be available, provide contact information for those resources, and describe the situation(s) in which they would be needed and requested.

Sources to consider while developing the plan include neighboring communities, state mutual aid teams, and other state resources. Several states have state disaster response teams and others have formed teams using existing mutual aid agreements and frameworks. FEMA and the Association of State Floodplain Managers (ASFPM) are working to develop national damage assessment teams that may be available to help in a disaster via the Emergency Management Assistance Compact. Assistance may also be available from the State NFIP Coordinating Office, FEMA Regional Office, the FEMA disaster office, or the state's floodplain association.

#### Help with Damage Determinations

- [FEMA's Building Code Adoption page](#) has a GIS portal viewer and fact sheets describing mutual aid programs in each state.
- The [Disaster Assistance Response Team \(DART\) page](#) of the ASFPM's website has guidance, training aids, and templates to develop and administer state disaster teams.
- The [Illinois Rapid Assessment Flood Team \(RAFT\) Guidebook](#) provides guidance on forming a state team, based on the RAFT's response to several flood and thousands of damage assessments.
- The Louisiana Floodplain Management Association operates a [Disaster Response Team](#).
- The 2002 [Iowa Mutual Aid Compact](#) is the mechanism by which political subdivisions and emergency management commissions share resources in a disaster.
- The [Florida Mutual Aid Agreement](#) allows for the provision of community-to-community assistance. Florida has also Memorandums of Agreement with the Florida Floodplain Managers Association and the Florida Building Officials Association to respond to substantial damage needs.

### ***Step 3. Identify post-event efforts related to substantial damage.***

In this step, the community develops clear directives and strategies for its post-event actions. The plan should lay out the specific actions needed to complete damage inspections in the field as well as the administrative process for getting damage determinations completed.

The work done in Step 3 ensures that three essential components of substantial damage are addressed: (a) training team members and communicating with both local officials and property owners, (b) the field inspection and damage determination process itself, and (c) compliance with ordinances and other procedures when a structure is determined to have been substantially damaged. Although the community can establish its own substantial damage assessment and determination process, national experience has shown that these three strategies are important components.

#### **(a) Post-event Coordination and Communication**

**Team Training.** Ideally, the team for substantial damage management should receive training well before a disaster happens. The plan must set out the community's strategy for making sure that all team members understand what substantial damage is, what their roles are with regard



to the substantial damage management process, and how to carry out their responsibilities both before and after a flood. New team members should be trained on the substantial damage process and know what to expect after a flood or other event.

The community can devise and conduct its own training sessions or rely on existing federal and state substantial damage training. Most State NFIP Coordinators and state floodplain associations hold annual training on substantial damage issues. FEMA’s Emergency Management Institute offers independent study and online training on substantial damage and substantial improvement. The community should determine what combination of training best suits the needs of its substantial damage management team. Some training resources are listed in the box on page 7.

**Communication with community leaders.** Support from community leaders is critical to the overall management of substantial damage. Elected officials may not understand the community’s obligations with regard to substantial damage. There will almost certainly be angry residents after a disaster; elected officials need to be prepared to respond to them. The plan should ensure that time is taken to describe to those officials the NFIP and other requirements reflected in the community’s ordinance as well as the procedures that will need to be implemented after a flood or other event—the inspection process, how damaged buildings will be categorized, and potential controversies.

Another part of the communication with community officials could be a discussion of the advisability of imposing a temporary moratorium on reconstruction after a flood until the damage assessment process is completed. Community leaders can be reminded that clean up and minor repairs (to secure the structure) will be permitted but that every building must be inspected nonetheless. They should understand that the goal is to build the community back safer, stronger, and more resilient to future flooding and that the community floodplain manager will need their support and assistance. Several resources are available from FEMA to support the communication efforts outlined in the plan.

**Communication with the public.** The community’s information officer should be part of the substantial damage team and included in the planning process. It is important to determine in advance what information will be needed and when it will be provided to the public. The ongoing provision of information about mitigation and about the substantial damage requirements in the local ordinance is always essential. It may prove helpful to supply guidance and assistance on topics such as clean-up vs. repairs and how the damage assessment and determination process is likely to unfold. Sample outreach materials are available from the State NFIP Coordinator, FEMA, and other communities and it is recommended that these be obtained

### **Opportunity for Post Event Support**

Revisions made in 2020 to the Disaster Recovery Reform Act (DRRA) allow state, local, tribal, and territorial governments to be reimbursed for certain activities associated with the administration of their floodplain ordinances after a federally declared disaster. This is a new opportunity to supplement or improve local capabilities. The funding can support the management of substantial damage by bolstering a range of activities related to code enforcement, damage surveys, damage determinations, public outreach, training, and other tasks.

More information about DRRA Section 1206 can be obtained from FEMA or the state emergency management agency.



in advance, tailored to the community's particular needs, and included in the plan. It should be anticipated that, during and after a flood, day-to-day messaging with affected residents will be needed to make the process move more smoothly.

**(b) Damage estimate and substantial damage determination procedures**

**Assess the situation.** After an event, the floodplain manager will need to tour the damaged areas as soon as feasible and coordinate building inspections with the emergency manager. The plan should identify who will be doing these initial field inspections and how they will be conducted. For example, are certain parts of the identified at-risk area likely to be accessible before others? If so, the post-flood part of the plan should explain that and direct the deployment of resources with that in mind.

Ideally, field inspections will be conducted before the buildings are cleaned off, so that high water marks and flood depths can be documented and recorded for each structure. This simplifies accurate assessment of damage. The plan should assign responsibility for doing these tasks, describe the procedures those people are to follow, and detail how the information will be incorporated in community records.

The plan could set out a procedure for the initial survey of damaged structures, based on damage levels set by the community. One option would be roughly categorizing buildings by the extent of damage, like this:

- Obvious substantial damage (more than 60% damaged),
- Potential substantial damage (40 to 60% damaged), and
- Not substantially damaged (less than 40% damaged).

**Questions to be Addressed in Step 3 and Included in the Written Plan**

**Coordination of the Substantial Damage Team**

- How often will the community's substantial damage team meet?
- How will the team be trained?
- What resources will be used to train the team?

**Communication with Elected Officials**

- Who will provide an annual update to community leaders? When?

**Communication with Residents**

- What methods will be used to communicate about substantial damage?
- What information will be provided to the public after a flood?

**The Substantial Damage Determination Process**

- What is the timeline for completing substantial damage determinations?
- Who will field inspections be completed?
- How will damage determinations be made?
- Who will obtain building information used in damage determinations?

**Compliance**

- Who will ensure compliance with the substantial damage regulations?
- When and how will residents be notified of the substantial damage determinations?
- How can property owners appeal a determination?

A subsequent step could be to prioritize resources to the top two levels of damage and re-visit the less-damaged buildings later, if needed. Remember, communities that track cumulative substantial damage must have a process in place to make damage assessments, document the damage, and track the damage. That process should be detailed in the substantial damage management plan.

The plan should explain how damaged structures are to be identified on a map and what types of notes need to be taken on each structure to prepare for damage determination field work. The map and list of damaged buildings, in turn, will be used to help prioritize work and identify how many team members will be needed. The list of properties and the map completed in Step 1 will help the community think through how it wants this process to work.

**Being ready for substantial damage determinations.** In this part of the plan the community sets out a clear strategy for the actual conduct of substantial damage determinations. The community permit official should review permit procedures and there should be a clear understanding that no permit is to be issued for building repair until a damage determination has been made. The substantial damage management plan should estimate the time needed to finish assessing the extent to which buildings are damaged, which may be considerable. It should also specify how residents are to be made aware of the expected time frame for damage determinations and permitting, so they can plan their repair, recovery, and mitigation measures.

The strategy for doing the substantial damage estimates must be outlined in the substantial damage management plan. There are four key actions in administering substantial damage standards: (1) determining the cost of the damage, (2) determining the structure's market value, (3) comparing the cost of damage and market value to the substantial damage threshold adopted in the local ordinance, and (4) requiring owners to obtain permits and bring substantially damaged buildings into compliance.

The substantial damage plan should identify who does what to implement the strategy, who has the final say on decisions, how long it is expected to take, what steps will be taken to coordinate with utility companies, and more.

To ensure that damage determinations are completed, the plan should assemble checklists, forms, and templates for inspection notices, permit applications, and other documentation that will be needed. Examples of these documents can be obtained from state substantial damage documents, or from various FEMA publications.

The procedure for notifying residents of the damage determination should be explained in the plan. Who will be sending the damage determination letters and who will be available to answer the myriad of questions residents may have?

### **(c) Compliance procedures for substantially damaged structures**

The plan should explain how residents will be notified of their damage determination, how the appeals process will work, and who will ensure compliance. FEMA recommends that letters be sent to property owners to communicate substantial damage determinations. The

letter should also provide property owners with direction on how to bring their structures into compliance. This letter is a requirement for owners who choose to file Increased Cost of Compliance (ICC) claims to help defray the cost of bringing flood-damaged buildings into compliance. An ICC claim will require that specific information be included in the substantial damage letter. Sample letters are available in many of the state substantial damage plans.

Communities that have prepared the permit documents and guidance letters before an event have the most success with compliance, quick recovery, and mitigation. These materials should be part of the plan.

**Consult the local attorney.** The community attorney needs to understand the substantial damage regulations, the community's enforcement procedure, and the determination process. He or she needs to be aware that the field inspectors will be entering private property. The attorney may be needed to defend substantial damage determinations or enact a community moratorium.

**Update the state and FEMA.** The community's plan must include a procedure for transmitting updates to the State NFIP Coordinator and the FEMA Regional Office, if such updates are requested. Although it is not required for CRS credit, it would be helpful if the plan included a process and schedule for automatically submitting periodic updates to those two entities. To make things simpler after a flood, the plan could identify in advance which person in which community office would have responsibility for developing such updates, at what point (for example, 30 days after the flood, 90 days post flood, and 180 days post flood), contact information for the NFIP state office and the FEMA Region, and how such an update is to be transmitted (email, hard copy, etc.).

#### ***Step 4. Build a property database for substantial damage estimates.***

##### **(a) A Basic Substantial Damage Database.**

In Step 1, the community developed a list and map of properties that could be substantially damaged. In Step 4 this list is used to develop a basic database of the information needed to complete a damage determination for each of those buildings, in the event of damage.

Gathering specific data on individual buildings can be a time-consuming endeavor and can delay a post-event response. Having that data already assembled, in a useable format, will be invaluable to managing a community's vulnerability to substantial damage. The data

##### **Questions to be Addressed in Step 4 and Included in the Written Plan**

- Do the structures included in the basic database of potential substantial damage match the list of structures identified in Step 1?
- What data were used to populate the database?
- What were the sources of the data?
- What strategies were used to guarantee compliance with federal Privacy Act?
- When will the data be updated?

The required database can be as simple as a table, either in hard-copy or digital format, if the community has only a handful of buildings at risk of substantial damage. For communities with more at-risk structures, a stand-alone digital spreadsheet or a part of one layer of the community GIS system likely would be a better alternative. FEMA's SDE tool provides another streamlined way to store and retrieve extensive property-based data. Communities that use FEMA's SDE to fulfil the Step 4 requirement may also be eligible for SDP2 credit (see page 20). Communities that wish to require organizing and populating their basic, Step 4 database must use FEMA's SDE software.

In many states, county tax assessors now have assembled online much of the building information a community needs to build its substantial damage management database (and to populate FEMA's SDE, credited in element SDP2). These data include square footage, building value, property number, ownership, and other building attributes.

- building ownership,
- property identification number, if available,
- building address,
- building type (residential, non-residential),
- number of stories,
- foundation type, and
- area (square footage).

Communities MAY NOT include NFIP repetitive loss or claims data in the substantial damage database. The NFIP policy information that is supplied to the community is protected by the federal Privacy Act. The database may, however, note which properties are included in a “repetitive loss area” (see Section 503 of the *Coordinator's Manual*).





[illegible]

Communities that have earned credit for applying a cumulative substantial improvement standard (element CSI) may already have databases or documentation to help track damage or improvements. For purposes of SDP credit, if all buildings identified in Step 1 are included in that database, and all the basic building information required for Step 4 is included as well, then the community may use that database for this step.

Data that the community has not been able to locate, or is planning to acquire in the future, should be discussed in the plan. For example, some communities do not use property index numbers, or square footage may not be available from the county records. In those situations a short explanation of the missing data should be made in the plan. It is assumed that communities will expand or otherwise improve their databases for the required annual evaluation report or at the time of a scheduled plan update. Additional building or property information should be included in the database as it becomes available.

**(b) Optional for SDP2 Credit: Pre-populating FEMA's SDE**

A community that assembles a more comprehensive database than the basic one described in Step 4, and loads that data into FEMA's SDE, may receive CRS credit in sub-element SDP2 (see page 20).

***Step 5. Identify actions the community can take to address potential substantial damage.***

**(a) Community action on substantial damage.**

Under Step 5, the substantial damage management plan **MUST** include at least one action the community will take to educate the community about substantial damage (or substantial improvement) requirements. Some examples of such pre-event actions are listed below.

- Annual substantial damage training for the members of the substantial damage team;
- A community public meeting on substantial damage and mitigation options;
- Information about substantial damage and substantial improvement provided via newsletters, social media, information kiosks, etc.;
- Distribution of handouts or letters to property owners; and
- Communication with elected officials about community responsibilities regarding substantial damage and, if applicable, about cumulative substantial damage.

**Questions to be Addressed in Step 5 and Included in the Written Plan**

- How will property owners be informed about substantial damage requirements?
- How will community leaders be updated on substantial damage issues?
- Who will ensure that all personnel doing substantial damage work are trained?

Taking one or more of these pre-event actions will help the community stay ahead of and counteract the misinformation and rumors that tend to travel quickly after a disaster. The public will need to know in clear terms, for example, what the local permit requirements are for making minor repairs vs. making substantial repairs, and why mitigation is important.



During this step of the planning, the community can determine which pre-event actions it wants to take; engage the local public information officer in planning those actions; and prepare needed handouts and education materials in advance. Examples of these items can be found in substantial damage guidance booklets.

**(b) Optional for SDP3 Credit: Consideration of Mitigation.**

One of the principal ways by which a community can address substantial damage before a flood or other event is by taking mitigation actions or encouraging property owners to do so. Mitigation alternatives should be addressed in this step of the plan development. If a community systematically considers mitigation alternatives for each of the substantial damage buildings, neighborhoods, or areas identified in Step 1, it may receive additional CRS credit under sub-element SDP3 (see SDP3 section, below, page 22)

***Step 6. Determine implementation steps and procedures for updating the plan.***

During this step the team identifies how the substantial damage management plan will be implemented and updated as needed. The implementation section of the written plan must include the following four items, at a minimum.

**(a) A procedure and schedule for conducting an annual evaluation of the plan and producing a report on that evaluation.**

The procedure must specify who is responsible for the evaluation and report. The evaluation procedure itself should involve a review of each of the six planning steps as discussed in the plan and the report should identify which portions of the overall plan remain valid and effective, whether pre-event action items need to be updated, describe what was implemented (or not implemented), and recommend changes as appropriate. If any flood damage has occurred since that last evaluation, the report should highlight it. A sample annual evaluation report is available on the [CRS Resources website](#). An updated substantial damage management plan can meet that year's annual evaluation requirement.

**Questions to be Addressed in Step 6 and Included in the Written Plan**

- When will the annual evaluation report be completed, and by whom?
- How and when will the evaluation report be shared with community leaders?
- What will be the schedule for updating the plan?
- In the aftermath of an event, what lessons were learned, and should any changes be made to the plan?
- Have steps been taken to adhere to the Privacy Act?

Communities receiving SDP2 and/or SDP3 credit must include in their annual evaluation reports consideration of those portions of the plan as well.

**(b) A description of the options for communicating the substantial damage management approach with elected officials.**

Credit criterion (5) requires that the plan be submitted to the community's governing body, but other avenues for promoting awareness of the substantial management issues and engaging local officials should be considered and discussed in the plan.

**(c) A suggested procedure and schedule for updating the substantial damage management plan.**

Although no particular schedule is required by the CRS, it is recommended that the management plan be reviewed and updated at least every five years. Special consideration should be given to updating the plan after a flood or other hazardous event, which is the perfect time to evaluate the plan and make improvements as needed.

**(d) A description of any steps that must be taken to adhere to the Privacy Act or any state or community privacy requirements.**

## **Credit for SDP2, Pre-populating FEMA's SDE**

After receiving credit for element SDP1, a community is eligible to receive additional credit (50 points) for gathering specific additional information on all the buildings identified in Step 1 and using that data to pre-populate FEMA's SDE.

FEMA's SDE identifies 28 types of information (called "fields") that can be stored in a database and uploaded into the tool. For SDP2 credit, the community must populate all 28 fields of FEMA's SDE. This will involve expanding the database developed for SDP1 credit and obtaining enough additional information about each building to fill the 28 fields.

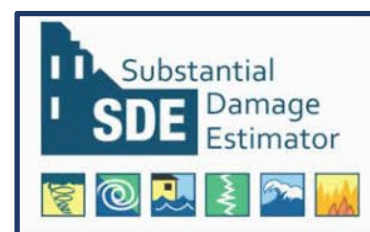
In rare instances, a piece of data, such as year of construction, lowest floor elevation, or datum used, may be unknown or unavailable. Alternatively, a piece of data may not be applicable to the specific property, such as the cardinal (NW, SW, etc.). Any missing data must be listed and explained in the substantial damage management plan, along with the community's strategy for obtaining that missing data.

It is expected that the community's records in FEMA's SDE will be expanded or otherwise improved after an event, at the time of an annual evaluation report, or at the time of a required update. Updates will be needed especially for information that may have changed, such as the owner's name or the building's market value.

For SDP2 credit, the community's database of susceptible buildings is loaded into FEMA's SDE tool. In addition to providing CRS credit, this pre-population work will save the community valuable time after an event, allow substantial damage determinations to be made more quickly, and send both the community and residents on the fast track to recovery. The focus then can shift to mitigation measures that will avoid future damage.

### ***FEMA's Substantial Damage Estimator***

The FEMA SDE software is based on the regulatory requirements of the NFIP and is intended to be used in conjunction with industry-accepted residential cost-estimating guides. The tool assesses damage from floods, wind, wildfires, seismic events, and other sources by comparing average costs of damage with industry-accepted estimates of the costs of construction and/or repair. Using FEMA's SDE will save



communities time and help keep their damage determinations consistent. A community can save all its data and photographs in the SDE for future reference.

It is strongly recommended that at least one member of the community's substantial damage team be trained on using FEMA's SDE before the event, and annual training is recommended. The substantial damage management plan should state who has been trained or is experienced in using FEMA's SDE.

Training on substantial damage and on using FEMA's SDE can be accessed by contacting the State NFIP Coordinator or FEMA Regional Office. Online training also is available through the FEMA Emergency Management Institute (see box on page 7).

FEMA's SDE program and associated guides can be downloaded from the [substantial damage page of FEMA's website](#). Among other resources, this site offers

- The SDE software program;
- The tool installation guide;
- *The User Manual and Field Workbook (FEMA P-784)*, and
- A compilation of SDE best practices.

The workbook includes templates as well as inspection worksheets for both residential and non-residential buildings. These worksheets mirror the data required by the SDE program and are an easy way to document damage when in the field.

### Importing the Substantial Damage Inventory into FEMA's SDE

A community uses the "import function" of the SDE to transfer information about multiple buildings simultaneously from its existing database into the SDE. This can be especially useful if the database contains information on a large number of properties.

Once the database file has been populated with the desired fields and data and saved as a file on the community's computer, the import function may be initiated. The import function only works if the community has its data saved in either a Microsoft Excel or CSV format. Otherwise, each data field for all of the community's potential substantial damage properties must be entered into FEMA's SDE individually.

Fields of FEMA's SDE to be Populated for SDP2 Credit	
1 Owner's first & last name	15 Community name
2 Lot number	16 Community NFIP ID
3 Parcel number	17 FIRM panel
4 Address lines 1 & 2	18 FIRM zone
5 Street suffix	19 BFE
6 Street cardinal (NW, SW, etc.)	20 Suffix
7 Apartment, unit	21 Residential/non-residential
8 City	22 Inspector phone #
9 State	23 Date of FIRM panel
10 County, parish	24 Regulatory floodway (Y/N)
11 Zip code	25 Subdivision
12 Year of construction	26 Lowest floor elevation
13 Longitude	27 Datum
14 Latitude	28 Total square footage

A step-by-step fact sheet on pre-populating FEMA’s SDE using the import function can be found on the [CRS Resources website](#), along with an optional template spreadsheet with the 28 required fields.

### ***Alternative Damage-determination Software***

Because automated damage determination tools may become more widely available, the CRS will provide SDP2 credit if a community uses a method, system, or tool in place of FEMA’s SDE, provided that

- The tool accurately determines substantial damage or substantial improvement as required by the NFIP;
- The tool can be pre-populated with the building information for all buildings that the community identifies for the SDP1 credit (those buildings that could be substantially damaged), and
- The information gathered on the buildings, at a minimum, matches what FEMA’s SDE requires, i.e., all 28 data fields used by the SDE.

### ***Documentation for SDP2***

When requesting SDP2 credit, the community must provide a spreadsheet that shows that all the required data about all the structures identified in Step 1 has been loaded into FEMA’s SDE. At this time, the SDE does not have the capability to generate a community-wide list of pre-loaded properties and data fields. As documentation, therefore, communities must submit a screen shot of the “View/Search Records” page of the SDE. This screen shot should include the number of structures that have been loaded into the SDE.

If the community is already receiving SDP1 credit for its plan, to receive the additional SDP2 credit, it must submit, along with the database, a revised plan that includes a description of the SDE database, any needed discussion of missing data, and the community’s strategy for obtaining that data.

### **Credit for SDP3, Mitigation Options**

After receiving credit for element SDP1, a community is eligible to receive additional credit (50 points) for considering mitigation alternatives for all the properties that were identified in Step 1. Note that credit for SDP2 is NOT a prerequisite for receiving credit for SDP3.

SDP3 credit is provided when appropriate mitigation alternatives are identified for each neighborhood, area, or other segment of the list of properties identified in Step 1, and a discussion of that review is included in the community’s substantial damage management plan.

To receive credit, the community must consider and review alternative approaches to property protection for each of the at-risk buildings or neighborhoods on its list. A determination must be made as to what mitigation measure(s) are most feasible—such as buyout, elevation, relocation, or floodproofing—and include approaches that could be done either immediately (before flooding) and in the aftermath of the next flood. Often, mitigation alternatives will have been reviewed and considered in other documents such as the community’s hazard mitigation plan,

but for SDP3 credit the community must use more detail and focus on which specific mitigation option(s) are best suited for each at-risk building, area, or neighborhood identified in Step 1.






At a minimum, the review must consider

- Relocation,
- Acquisition,
- Building elevation, and
- Retrofitting.

A review that looks at only one option, particularly only at structural flood control project alternatives (levees, floodwalls, etc.) is not sufficient. For each building, neighborhood, area, or subset, the review should also consider potential funding sources.

Some mitigation measures, such as elevating utilities or making minor drainage alterations, are appropriate as a pre-flood activity that may reduce damage next time. Other approaches will only come into play after a flood (for example, if a structure is substantially damaged and must be brought into compliance or if funding for large-scale buyouts becomes available), but both time frames should be considered in the mitigation review. Many other factors (flood risk, demographics, land use plans, etc.) will also play a role in the analysis. A flood mitigation decision matrix, like the one at right, may help with this process.

There are a multitude of publications available on mitigation techniques, notably those listed on the [mitigation page of FEMA's website](#). This is the perfect opportunity to contact the [State Hazard Mitigation Officer](#), the [NFIP State Coordinator](#), or the FEMA Regional mitigation staff for their recommendations on the options that match the community's and property owner's needs and also identify funding

FLOOD PROOFING MATRIX		FLOOD PROOFING MEASURES							
									
		Elevation on Foundation Walls	Elevation on Piers	Elevation on Posts or Columns	Elevation on Piles	Relocation	Floodwalls and Levees	Floodwalls and Levees with Closures	Dry Flood Proofing
FLOODING CHARACTERISTICS	Flood Depth								
	Shallow (less than 3 feet)								
	Moderate (3 to 6 feet)								N/A
	Deep (greater than 6 feet)						N/A	N/A	N/A
	Flood Velocity								
	Slow (less than 3 fps)								
	Moderate (3 to 5 fps)								N/A
	Fast (greater than 5 fps)	N/A <sup>1</sup>	N/A <sup>1</sup>				N/A <sup>1</sup>	N/A <sup>1</sup>	N/A
	Flash Flooding								
	Yes (less than 1 hour)	N/A <sup>1</sup>						N/A <sup>2</sup>	N/A <sup>2</sup>
SITE CHARACTERISTICS	No								N/A <sup>2</sup>
	Ice and Debris Flow								
	Yes	N/A						N/A	N/A
	No								N/A
	Site Location								
BUILDING CHARACTERISTICS	Coastal Floodplain	N/A					N/A	N/A	N/A
	Riverine Floodplain								N/A
	Soil Type								
	Permeable						N/A <sup>3</sup>	N/A <sup>3</sup>	N/A
	Impermeable								
	Building Foundation								
	Slab on Grade								
	Crawl Space								
	Basement		N/A	N/A	N/A				N/A <sup>4</sup>
	Building Construction								
	Concrete or Masonry				N/A <sup>5</sup>				
	Wood and Others				N/A <sup>5</sup>			N/A	N/A <sup>5</sup>
	Building Condition								
	Excellent to Good								
	Fair to Poor	N/A	N/A	N/A	N/A	N/A			N/A



opportunities. Many states and FEMA regions also have developed resource guides to identify mitigation funding sources.

The principal purpose of reviewing all mitigation options for all properties at risk of being substantially damaged is to ensure that the community has considered and accumulated background information that will make it easier to manage its substantial damage properties effectively both before and after a flood. However, communities are encouraged to go a step further and share the results of the mitigation review with property owners and local officials. This may take the form of one-on-one meetings, a community open house, distributing packets of tailored information to each property owner, or other approaches.



Communication with property owners and elected officials should include, at a minimum,

- An explanation of how the community analyzed the various mitigation alternatives;
- The degree of safety provided by the various mitigation measure,
- What the project will look like after completion,
- The cost, including the owner's share, and
- Possible funding sources.

### ***Documentation for SDP3 Provided by the Community***

To receive SDP3 credit, the community's plan for managing substantial damage credited in SDP1 must include a section that describes the community's review of mitigation alternatives for each property, neighborhood, area, or other segment of the community; communication with property owners and officials, if done; and any outcomes, conclusions, or action taken.

If the community is already receiving SDP1 credit for its plan, it must submit a revised plan that includes a section discussing its review of mitigation alternatives.



# Receiving CRS Credit

As with other CRS planning elements, to receive credit for SDP the community must follow a certain process and address certain issues. Communities are encouraged to use the SDP checklist available on the [CRS Resources website](#) to ensure that all steps and items of documentation have been covered.

## CRS Review of the Substantial Damage Management Plan

Before SDP credit is provided, the substantial damage management plan is reviewed by the CRS to ensure that the required steps (noted above) have been carried out and the criteria met. The ISO/CRS Specialist will provide the findings of the review to the community. Some important points about this review:

- Because this guide further explains the credit criteria and includes the latest policies and guidance, the criteria in this guide will be used to determine if a submittal qualifies for SDP credit.
- The reviewer only sees what is submitted. If something is not included in the plan document, the community should also submit explanatory materials.
- During development of the plan, community officials and staff should feel free to contact their ISO/CRS Specialist with questions and/or to confirm that they are on the right track.
- It is highly recommended that communities submit drafts or even partial drafts of their substantial damage management plan for courtesy review before it is finalized.

## Impact Adjustment for SDP

Because having a plan for managing substantial improvements and substantial damage is a community-wide effort, there is no impact adjustment for SDP1, SDP2, or SDP3 credit.

## Credit Points for SDP

As noted in the *Coordinator's Manual*, the total credit points for element SDP equals the sum of the points for the three sub-elements, to a maximum of 140 points. SDP1 provides 40 points; SDP2 provides 50 points; and SDP3 provides 50 points.

## Documentation for SDP Provided by the Community

(1) At each verification visit, the community must make available

- (a) A copy of the most recent version of its substantial damage management plan.

For SDP2 credit, this must be a version that includes a description of the SDE database, along with a copy of the database spreadsheet and a screen shot of the “View/Search Records” page of the SDE.

For SDP3 credit, this must be a version that includes a section describing the community’s review of mitigation alternatives.

- (b) A description of when and how the substantial damage management plan was shared with local officials.

If the substantial damage management plan has been updated or revised, the update or revision must be provided in time for each CRS cycle verification visit. The update should review the flooding and building condition as well as any changes to the substantial damage process. This may require an update to the substantial damage building inventory and map that are parts of the plan.

- (2) With its annual recertification, the community must submit
  - (a) A copy of the report on its annual evaluation of the plan (or a copy of the updated plan, if applicable); and
  - (b) The date that the evaluation report (or updated plan) was shared with the elected officials.

Each year, a community must evaluate its substantial damage management plan and write a report on that evaluation. A copy of the report must be submitted with the community's annual recertification. The report should review each of the six-step processes, indicate whether each of the steps has been implemented or changed, and explain when and how the evaluation report was shared with local officials.

A community loses its credit for SDP1, SDP2, or SDP3 (i.e.,  $SDP\_ = 0$ ) if it does not submit the above documentation at its annual recertification and at its verification visit.

## Using the Substantial Damage Management Plan After a Flood

All the steps listed below should have been anticipated in the development of the community's substantial damage management plan. After a flood or other event, the staff simply follows the plan, using the procedures, templates, and materials already prepared and contained within the document. This process will help make the community more resilient in the next event.

**1. Look at the substantial damage areas and list of properties identified in the plan.**

Inspect the areas damaged by this event and note the damaged buildings on a map. Compare the areas and buildings affected by this event with those identified in the plan. The building information in the plan helps facilitate damage determinations.

**2. Activate the post-event team.** The plan lists the post-event team members and other available resources. Bring the team together and, using the plan, decide on roles and tasks. Consider staffing and, if needed, find other support from the sources listed in the plan.

**3. Gather the forms and tools for field work to inspect and make substantial damage determinations.** The plan should have all the necessary forms and outreach documents.

**4. Provide outreach and education for residents and elected officials.** Let the public know the process for repairs and rebuilding, using the techniques and materials identified in the plan. Keep elected officials informed.

**5. Begin field inspections.** Follow the steps itemized in the plan for door-to-door inspections, including posting notices on the damaged buildings, taking photographs, and documenting high-water marks.

**7. Collect data.** Use the building information from the database or FEMA's SDE, update market values for buildings if needed and make sure building information is accurate.



**8. Determine whether structures are substantially damaged.**

Compare the damage costs to the pre-damaged market value. If the community tracks cumulative substantial damage, compare the combined costs of repairs to the market value of the building. Identify those buildings that are substantially damaged.

**9. Convey the substantial damage determination to property owners.** Send the letter notifying the property owners of the determination, based on the letter template in the plan. Keep elected officials informed so that they can anticipate complaints.

**10. Require permits.** Enforce the floodplain ordinance by requiring substantially damaged buildings to be brought into compliance. Permits to being repairs can be issued for any buildings that are not determined to be substantially damaged.

**11. Follow through and mitigation.** Ensure that the substantial damage determination is enforced, consulting with the community attorney as needed. Provide property owners with mitigation alternatives and funding options, as identified in the plan. Hold public meetings as needed.