

Massachusetts Local Guidance for NFIP

Substantial Damage Planning



Figure 1: Photo courtesy of the Cape Cod Cooperative Extension/Woods Hole Sea Grant: solid wall foundation in V zone that collapsed from wave energy/erosion.

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Massachusetts Local Guidance for NFIP Substantial Damage Planning

This guidance has been developed by the Massachusetts Flood Hazard Management Program as a comprehensive tool for communities in the Commonwealth of Massachusetts to assure that certain practices and a post-disaster plan will be in place to implement the Substantial Improvement/Substantial Damage requirements of the National Flood Insurance Program (NFIP), and as stated in the Massachusetts Building Code. The context of this work is found in the MA Building Code and in local regulations that meet the requirements for participation in the National Flood Insurance Program.

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Acronyms

BC: Building Code

CFR: Code of Federal Regulations

CMR: Code of Massachusetts Regulations

DRRA: Disaster Recovery Reform Act

FEMA: Federal Emergency Management Agency

ICC: Increased Cost of Compliance (policy benefit)

NFIP: National Flood Insurance Program

PA: Public Assistance

SD: Substantial Damage

SFHA: Special Flood Hazard Area (1% chance flood, 100-year flood) on FEMA maps

SI: Substantial Improvement

Note: Throughout this document we refer to FEMA's publication #P-758, "The Substantial Improvement/ Substantial Damage Desk Reference." This publication offers excellent guidance on the topic, as well as many helpful examples. To find this document, use your search engine and look for FEMA P-758.

Purpose of This Guidance

Why does the NFIP have this Substantial Improvement/ Substantial Damage regulation built into it from the beginning?

Before we begin to explain this regulatory process, we would like to state three primary REASONS for this regulation:

1. **As a matter of federal insurance costs**-- The property located in the Special Flood Hazard Area has (or should have) a flood insurance policy, usually a federal NFIP policy. Under the NFIP, a flood insurance policy cannot typically be denied. Therefore, in order to keep federal disaster costs contained, a Substantially Damaged structure must be brought into compliance with the current building codes so it becomes a stronger structure that is less likely to experience costly flood damages in the future. Over time, this helps to keep annual insurance premiums and claims costs down.
2. **As a matter of public safety and expense**—if an owner is allowed to rebuild the property as it was, without full compliance, then it will be damaged again, and again, and again. Future flood damages could even involve death as a result of increased and more severe flood events due to climate changes. Additionally, local emergency services personnel and equipment will have to continue to respond and rescue occupants of the building, resulting in higher taxes for everyone in the community.
3. **As a matter of goodwill and liability to neighbors**--a non-compliant or non-conforming damaged structure could easily cause damages to nearby structures once it becomes debris from a storm.

Finally, structures that are in compliance with current regulations—especially those structures in the floodplain that are elevated above the base flood elevation—will usually be rated in a way that results in lower annual flood insurance premiums. Often annual premium savings will over time be greater than the cost to comply.

Need for Local Substantial Damage Planning

Why does my community need to have a plan for substantial damage determination?

Post-disaster there are many tasks required of local government, one of which is the determination of substantial damage to properties in the floodplain. Without a pre-set plan, the post-disaster environment can be complex and often overwhelming.

Communities that prepare and exercise a plan before disaster strikes are much better able to handle the work that goes with substantial damage determination, especially when the disaster has significant impact in the local floodplain. It might not be too much work to make one or two substantial damage determinations, but when there are hundreds of properties that have been damaged, the work can quickly spiral out of control.

In order to utilize all resources available most effectively, a pre-disaster plan can guide local officials through the maze of activities that arise post-disaster, from FEMA preliminary damage assessments, to state building inspectors analysis, to obtaining funding for additional staffing under FEMA's Public Assistance Program—all of these elements can occur in a smooth operation when a plan guides each team member in their specific role.

Regulatory Responsibilities of a Community Participating in the National Flood Insurance Program in Massachusetts

Every community that chooses to participate in the National Flood Insurance Program (NFIP) codifies that choice by adopting the federal NFIP code as its own. This means that every NFIP community has agreed to follow the regulations found in Title 44 of the Code of Federal Regulations (CFR), Parts 59 thru 65.

In Massachusetts, most of the NFIP regulations for flood-resistant construction standards are found in the state-mandated building code (780 CMR.) Others are found in the MA Wetlands Protection Act (310 CMR 10), MA Title V regulations (310 CMR 15), and the MA Model Floodplain Bylaw. The model bylaw offers insight into NFIP requirements that are not typically found in the other codes, but which must be locally adopted. See section 9 of this document for citations related to substantial damage.

Brief Explanation of the Substantial Improvement/ Substantial Damage Determination Process

Whenever a structure in the FEMA Special Flood Hazard Area (1% chance flood, or 100-year floodplain) has been damaged by any origin (flood, fire, tornado, blizzard, etc.), **the community is responsible** to determine whether or not the cost of repairs to the structure is equal to or exceeds 50% of the market value of the structure. If it is, then the entire structure must be brought into compliance with the current building code. This often means the structure must be elevated.

The entire Substantial Improvement/ Substantial Damage Determination process is described in detail in **FEMA’s publication #758—“The Substantial Improvement/Substantial Damage Desk Reference.”** You can find this online by searching for FEMA P-758 Substantial Damage.

On a sunny day, the community would be implementing the Substantial Improvement regulation for rehabilitation/restoration project costs that are equal to or greater than 50% of the market value of the floodplain structure. But when a disaster occurs and structures in the floodplain are damaged, the community has a different type of scenario. Same regulations, different process. Look at the differences:

Requirements for Substantial Improvement or Substantial Damage are only for structures located in the FEMA Special Flood Hazard Area (1% chance or “100-year” flood zone)

Substantial Improvement. A floodplain building owner comes in to the building department to apply for a permit to improve his/her structure. All related work must be examined to discover what the total cost of the renovation is estimated to be. For example, is it just new windows? The rehab of a bathroom? Perhaps an addition? If the cost of ALL necessary work—plumbing, electrical, construction, etc.-- combined together is estimated to equal or exceed 50% of the fair market value of the structure (not including the land), then this is a case of substantial improvement and the building official must require full structure compliance with the current code.

Substantial Damage. A floodplain building owner’s structure is damaged somehow, through fire, storm, flood, tornado, etc. **BEFORE** the owner comes in for a permit, the local building department either:

- a. sends out inspectors to look at the property to estimate whether or not the costs to repair the structure might equal or exceed 50% of the fair market value of the structure. If it is determined that the costs MAY trigger the Substantial Damage (SD) Rule, the community (building department, town manager, community development, etc.) issues a letter to the owner stating that there may be (or that there is) SD and that they must come in for a permit to discuss repair cost estimates and the requirements of SD. **OR**

- b. knowing that the request for a permit being presented is for a structure in the floodplain, the local inspector gives the construction estimate a comprehensive examination to assure that all work is included, and makes the SD determination before the permit is approved. In this case, an SD letter may still be needed for the owner to acquire certain flood insurance benefits such as the ICC benefit (see definition on page 25.) **A copy of all SD letters issued by a community should remain permanently in the community's permit files.**

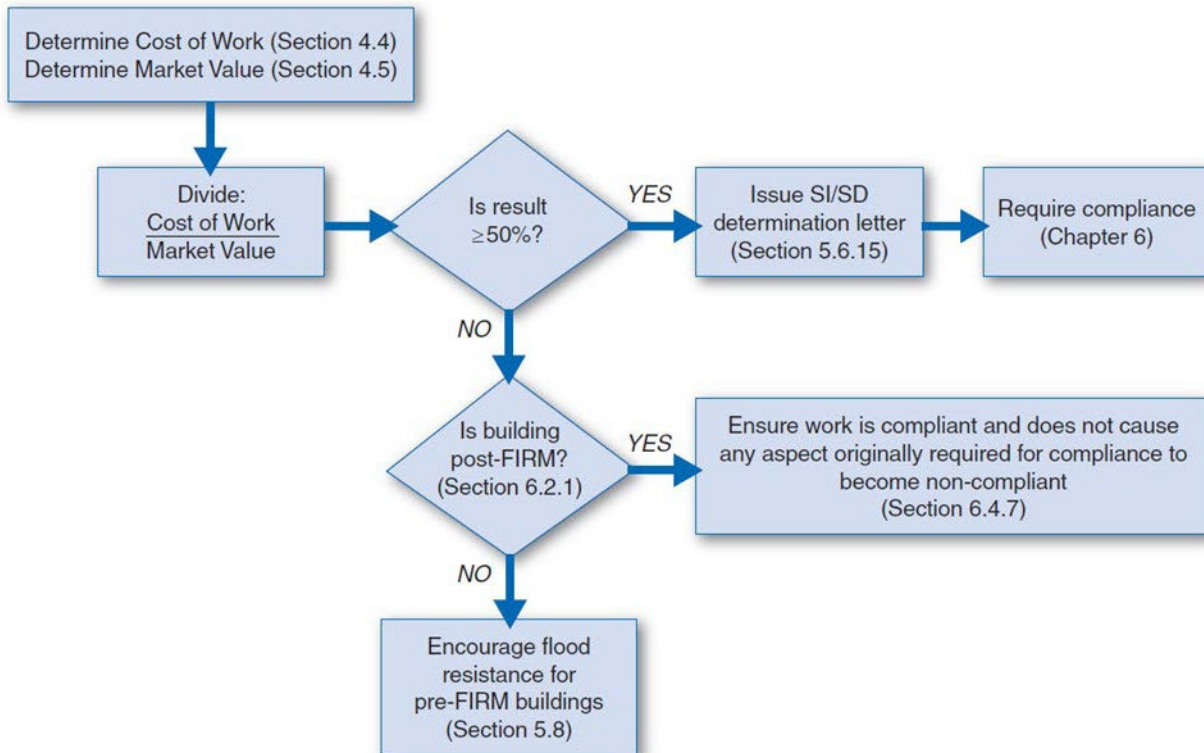


Figure 4-1. Make the SI/SD determination (overview)

Figure 2: From FEMA's P-758, "Substantial Improvement/ Substantial Damage Desk Reference", May 2010, p. 4-3

Typical questions that arise from SFHA property owners

My home was not damaged by flood, but by a heavy wind event. Do I still have to go through the analysis for Substantial Damage?

ANSWER: YES. Any type of damage from any origin where the repair costs equal or exceed 50% of the fair market value of the structure is considered to be SD.

My property is worth \$1.5 million, but the structure that was damaged is only worth \$300,000. Can't I use the total property value for the denominator of the ratio?

ANSWER: NO. Only the fair market value of the structure is used when considering whether or not it was Substantially Damaged (or is being Substantially Improved.)

I don't think the tax assessor's market value is realistic. Can I get an official appraisal to show that the structure is worth more?

ANSWER: YES. But if the structure is found to be worth more than the taxed value, the local tax assessor's office should receive a copy of the new appraisal so that they can update their tax records appropriately.

I've received a Substantial Damage determination from my building department, but I've changed my mind. I don't want to do all of the repairs right now... do I still have to bring the structure into compliance with the current codes?

ANSWER: YES. Substantial damage is based on the cost to fully repair to the pre-damaged condition (regardless of whether you do that now or later.) If this cost is 50% or more of the market value, you would be obligated to bring the entire structure into compliance. Your contractor will need to design the repair work to include full compliance for approval of the permit.

This will cost me more than I can afford. Isn't there an excuse for personal financial hardship?

ANSWER: NO. Variances should only be based upon the following:

- A showing of good and sufficient cause (which is not personal finances);
- A determination that failure to grant the variance would result in exceptional hardship (consistent with usage related to land use and zoning, in this context a "hardship" must be related to the land, not a financial or personal circumstance of the owner);
- A determination that granting the variance will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public, or conflict with existing local laws or regulations; and
- *Evidence that the variance is the minimum necessary* to afford relief, considering the flood hazard.

(See FEMA P-758 "Substantial Improvement/ Substantial Damage Desk Reference" for further explanation.)

While I'm making repairs, I've decided to also enlarge my kitchen and use more expensive materials (e.g. granite countertops.) Do I have to include these costs in my construction estimate?

ANSWER: YES. Whatever work is being done post-damage must ALL be considered in the determination of SD. If the "extras" cause you to go beyond the 50% mark, and you don't want to bring the structure into compliance with the current codes, you may want to reconsider adding the extras at this time. But remember: the costs of repair for the SD calculation must include at least repairing the structure to its pre-damaged condition.

IF I have to use multiple permits for the repair work (e.g. a plumbing permit, an electrical permit, and a building permit), do I have to combine the costs of them all for the SD determination?

ANSWER: YES. The value of ALL work must be combined for the SI/SD determination, regardless of the number of permits issued. In MA, the value of all related work within a 12-month period can be considered as contributing to the SD or SI determination. [MA building code: Appendix J of the Residential Code, AJ101.3:]

State & FEMA Roles

The State NFIP Coordinating Office (in MA this is the Dept. of Conservation & Recreation's Flood Hazard Management Program) has a role in supporting NFIP communities in carrying out their responsibilities for SI and SD. The State will provide guidance and corroboration of NFIP regulations, as well as coordinate with federal and state agencies or other groups that may seek to help post-disaster with this work. State contacts can be found online at the [Flood Hazard Management Program website](#).

FEMA will also support NFIP communities to carry out their responsibilities with training and the [Substantial Damage Estimator \(SDE\) Tool](#), as well as help to coordinate with Public Assistance processes for post-disaster support of building code enforcement. FEMA Region I contact information is found [here](#).

This document has been prepared by the Massachusetts Department of Conservation & Recreation's Flood Hazard Management Program.

Developing Your Local Substantial Damage Plan

Each MA NFIP community should develop their own unique Substantial Damage Plan in order to be prepared for post-disaster work. Here are some questions to consider:

1. Who is on your SD Team? You'll need practiced coordination between local staff with the following roles:
 - a. Building official, code enforcement and clerical staff for SD assessment and permitting activities
 - b. Public information officer (PIO), for local messaging
 - c. Tax assessor, for assistance with building valuations
 - d. Town manager or administrator, for awareness
 - e. Emergency manager, for coordination with MEMA if additional resources (such as state building inspectors) are required (see section 7 on DRRRA 1206)
 - f. Finance staff, if 1206 reimbursement is utilized
2. How often do you gather together to "practice" a post-disaster scenario and discuss new SD materials and tools?
3. How prepared are you for a disaster that impacts your local floodplains? Do you:
 - a. Have a database or filing system for structures located in the FEMA floodplain?
 - b. Have at-hand recent or ongoing permitting information for these structures, including current building values?
 - c. Have records of previous damages in the SFHA?
 - d. Have local messages ready for dissemination regarding the need for permits for damage repair? About SD regulations?
 - e. Has your SD Team or staff taken the FEMA online training for SD and use of the SD Estimator (SDE) tool?
 - f. Do you have a Memorandum of Agreement (MOA) in place that can be used if the disaster is far too large for local and state officials to handle? Is the MOA updated annually?
 - g. Have SD assessment "kits" ready for use? (e.g. materials/ equipment/ cameras needed to go out and conduct SD assessments as soon as the storm has passed)
 - h. Understand your rights to inspect, per the building code? (e.g. 780 CMR 104.6 Right of Entry)
 - i. Have template SD letters ready to mail?

- j. Have other documents ready for use such as contractor/ owner affidavits for construction cost?
4. Do you have written Standard Operating Procedures for the SD Team that include coordination with state and federal partners? Are all contact data included in the SOP (local, state, federal)? Do your procedures call for complete documentation in your permit files, including materials submitted for the SD determination, copies of letter(s) sent to owners, or affidavits for construction costs?
 - a. Does your plan include the methodology you've selected for estimates of construction costs and the evaluation of fair market value of the damaged structure? Do you have approved alternative methods in case of appeal? (See FEMA P-758 Chapter 4 for more information.)
5. Does your plan include steps for local messaging so that residents and business owners understand what is required of them in the damage repair realm? Who will you be working with to disseminate these messages? What media/ social media will you use? If you do not have a PIO in your community, do you have the right contacts for these outlets? Who will fill this role?
6. Does your plan include a section on how to access additional resources should the disaster be too large for local control? This might include how to bring in state inspectors to assist with SD assessment, or how to communicate with MEMA for use of an MOA. Does your plan include information about using the federal Public Assistance Section 1206 for reimbursement after a Presidentially-declared disaster?

The National Flood Insurance Program has a component called the **Community Rating System**, which is a program wherein communities that implement higher floodplain management standards can receive annual premium discounts for their NFIP flood insurance policyholders.

The Community Rating System offers guidance and a template SD plan you can use to start working as you answer the above questions. This guidance and template SD plan can be found on the [CRS Resources website](#).

If this link becomes inactive, search for "Developing a Substantial Damage Management Plan for Credit under the Community Rating System of the National Flood Insurance Program."

Case Study and Description of Excellence

What does a robust local SD program look like, including both pre-disaster and post-disaster activities?

First let's take a look at an example of a weak local SD program—one that's practically non-existent (and non-compliant.)

Case Study

In March of 2018, a coastal home was damaged by a Nor'easter. Although the local building inspector did a post-disaster "windshield damage assessment" of the repeatedly flood-damaged structures on that street, almost all of them were boarded up because they were second homes, and the absent owners had been careful to board up the properties before they left for the winter season. The specific home in this example had been boarded up on the first floor only, but the severity of the storm had caused cobble stones and waves to break through second story windows, depositing sand and huge quantities of salt water within, which damaged the entire inside of the home without visible outside evidence. (The ocean-side second story broken windows were not observed during the community's post-disaster drive-by assessment.)

The owner's contractor worked unobserved inside the structure to gut the entire home, and pulled various repair permits (plumbing, electrical, etc.) separately through the community's online permitting system. Because the community didn't have an integrated review practice, these "smaller" permits escaped the notice of the local building inspector because these types of permits were reviewed by someone else. The structure was completely repaired to the condition that it was before the storm damages, no one the wiser that it had been substantially damaged, even though a huge contractor dumpster was located on the premises throughout the repair process.

The following autumn the owner decided to apply for a federal hazard mitigation grant because he received a letter from FEMA stating that his home was categorized as a severe repetitive loss property (seven claims totaling almost \$560,000), and he could be eligible for a grant of 100% of the cost to elevate his structure. In completing the application package for the grant, he included that letter as well as a copy of the NFIP insurance adjuster's report showing that his home was damaged in the March 2018 storm with an estimated damages repair cost of approx.

\$268,000. (The owner received this amount from his NFIP policy in 2018 for repairs.) At that time, his home was assessed (structure only) at \$261,300. Under the requirement for substantial damage compliance, his home was 103% damaged.

The state agency that administers the federal hazard mitigation grants contacted the state floodplain manager to find out the current condition of the structure. The state contacted the local building official, who investigated the matter to find that the structure was completely repaired to

its pre-damaged condition. Upon further discussion, the state and local officials determined that the structure had been substantially damaged and was now in violation of the MA building code because it had not been repaired according to the current code (which would have required elevation of the entire structure to above the base flood height.)

The homeowner was ineligible for the federal grant because his structure was deemed non-compliant. The owner subsequently elevated the home with his own resources, and was pursuing a lawsuit against the community for allowing him to repair without a proper building permit and review process.

What Went Wrong?

1. If, post-disaster, the community had *immediately and clearly posted notices* in public places (e.g. newspaper or website) stating that ALL repairs from the storm must go through a permit review process before beginning, the owner's contractor would not have been able to sidestep the permit for the totality of the work. Even if this did happen, at least the owner would not be able to subsequently sue the community for not notifying him that a permit must be used.
2. The building department could have been a bit more pro-active regarding inspection of possibly damaged properties post-storm. A simple drive-by is good, but actually being able to step onto properties to inspect for damages is better. At least a *full and careful observation of the structure* might have seen the broken windows on the seaside (street side) second floor.

Note: Under the MA building code [10th Edition Base Code, Chapter 1, Section 104.6], local officials have the right to enter a property:

"Where it is necessary to make an inspection to enforce the provisions of 780 CMR, or where the building official has reasonable cause to believe that there exists in a structure or upon a premises a condition which is contrary to or in violation of 780 CMR which makes the structure or premises unsafe, dangerous or hazardous, the building official is authorized to enter the structure or premises at reasonable times to inspect or to perform the duties imposed by 780 CMR, provided that if such structure or premises be occupied that credentials be presented to the occupant and entry requested. If such structure or premises is unoccupied, the building official shall first make a reasonable effort to locate the owner or other person having charge or control of the structure or premises and request entry. If entry is refused, the building official shall have recourse to the remedies provided by law to secure entry, including, but not limited to requesting an administrative search warrant. See also M.G.L. c. 143, §§ 6 and 50."

3. Contractors who use questionable practices such as avoidance of permit rules can be re-educated as to the negative implications this practice will have on their professional licenses. The community can require that both the contractor and the property owner sign an affidavit stating that the costs submitted are the complete costs, and that they will return to the building department for re-valuation if actual costs exceed those submitted. (See sample affidavits in the Appendices of this document.)

Additionally, the community can request state-provided training for all local contractors about post-disaster regulations under the NFIP. The community can then “separate” those contractors who refuse to participate in this training, perhaps by listing only participating contractors on a local website or hand-out.

- a. A “best practice” community has an integrated review of all permits. It would be impossible for a contractor to pull a small plumbing permit, for example, without the building department’s knowledge. With all the technology available today for permitting in a local community, there is no reason that ALL permits cannot be reviewed by every pertinent local office. Another best practice is to flag all properties that are located in the SFHA so that when ANY work on those sites comes in, it is especially closely reviewed.
- b. Regular monitoring of the floodplain is crucial post-disaster so that building officials are aware of potentially non-permitted activity. In the case above, there was a large dumpster on the property during the time the contractor was ripping out interior damaged materials. It’s not easy to hide the fact that drywall, carpeting, furniture and other interior materials are being removed from the structure. A stepped-up post-disaster monitoring practice would have revealed this to the building department fairly early in the repair process, and the owner could have been issued a Stop Work order until the correct permits were acquired.
- c. Post-disaster, when flood insurance claims are being filed, local officials can ask the property owner to provide the adjuster’s report on the estimated costs to repair. This can give local officials an idea about whether or not the property may fall under the NFIP requirement of Substantial Damage. The owner is not obligated to provide the report, but may do so if they think it will help their cause. The insurance adjuster’s report does NOT substitute for a full substantial damage evaluation, however.

In any case, the community can send letters to each floodplain building owner on a street where damages are known to have occurred, stating that they may have experienced substantial damage and telling them that they need to come in to the local building department for a permit before they begin repair work. (See sample letters in the Appendix.)

- d. If the community has prepared a database of all SFHA structures, the current assessed value of the structure will be readily available for a quick comparison of potential repair costs, along with notes on other permitted work being done on the structure.

Good, Better, Best, Amazing

Post-disaster, local officials (typically building officials) must be on the alert for repair permits that indicate a possible substantially damaged (SD) structure in the Special Flood Hazard Area. Typical scenarios that follow after a structure is damaged include:

- **Not acceptable** (*this is a violation*): owner repairs SD structure without seeking a permit;
- **Not acceptable** (*this could be a violation*): owner's contractor manipulates the permitting system in order to evade SD regulations. This may include pulling separate smaller permits that are not reviewed by the same local department, or repairing sections of the structure a little at a time in order to avoid notice of the entire cost to repair;
- **Good**: building officials review all SFHA permits carefully year 'round to determine SD or SI;
- **Better**: building officials review all SFHA permits carefully year 'round to determine SD or SI, AND visit post-disaster damaged areas to take careful note of specific structures that may potentially be SD;
- **Best**: local officials visit sites to assess damages, post notices in the community about the SD process, send letters to specific owners of potentially SD structures stating that they must come in for a permit before beginning any repairs; and monitor repair work throughout the floodplain to assure that unacceptable practices are not taking place, using Stop Work orders when necessary.
- **Amazing**: Building department does all of above practices, PLUS maintains year round database of all floodplain structures, including such data as market value, past flood history, known permits for repairs/improvements, current mailing addresses of owners, existing health or safety violations; and all permits for work on the structure over time.

Best practices for local implementation of Substantial Damage requirements

Year-round activities

1. Publish flood risk information for citizens
2. Promote flood insurance purchases
3. Acquire training for contractors on NFIP regulations including SD and SI

4. Maintain database of SFHA structures and permits
5. When disaster of any kind strikes, make note of potential impacts in the SFHA
6. Keep copies of FEMA's P-758 publication in the local library Pre-disaster activities
7. Publish storm information and advisories
8. Assist the community to prepare for reduced damages (sandbagging, etc.)
9. Publish notices about SD and other permitting requirements for repair post-disaster

During the Storm

1. Carry out emergency management roles and activities

Post-disaster

1. Gather high water mark data
2. Publish information about Substantial Damage permitting requirements
3. Conduct windshield survey to ascertain areas of highest damages
4. Reach out to owners to arrange for on-site inspections when necessary
5. Conduct on-site inspections to estimate SD structures
6. Issue Substantial Damage Determination Letters where appropriate
7. Work with owners on developing comprehensive permits for structural repairs
8. Require signed affidavit for complete costs
9. Monitor construction activity in the floodplains
10. Keep permitting files current with all documentation for SD

Public Assistance under the Disaster Recovery Reform Act, section 1206

DRRA Section 1206(a) amended Stafford Act Section 402—General Federal Assistance-- to allow state and local governments to use general federal assistance funds for the administration and enforcement of building codes and floodplain management ordinances after a declared disaster. This section includes assistance for inspections for substantial damage compliance, a requirement of the National Flood Insurance Program, and provides an additional source of funding for local governments to carry out such activities.

FEMA implements this section through the [“Building Code and Floodplain Management Administration and Enforcement” Policy](#), which went into effect on November 1, 2020. Section 3.d. of this policy lists the eligible activities that may be reimbursed under the Public Assistance program:

3.d. Substantial Damage Determinations: For existing buildings located in areas regulated by the community’s floodplain management ordinance or building code, eligible work may include work to:

- i. Conduct initial field surveys to determine extent of damage.
- ii. Establish damage trends to identify areas to focus building-specific assessment efforts.
- iii. Prepare cost information on repairs and pre-disaster market value estimates for substantial damage estimates.
- iv. Hire, train, supervise, certify and license staff, as required to conduct eligible activities.
- v. Collect field data for damage assessments.
- vi. Enter damage inventory administrative data into the Substantial Damage Estimator or comparable data collection software.
- vii. Track cumulative substantial damage and repetitive loss for communities, if required.
- viii. Conduct damage inventory of structures.
- ix. Inform property owners of damage determination and provide compliance requirements.
- x. Perform inspections to ensure compliance with repair and substantial damage construction requirements.
- xi. Determine whether proposed improvements are “substantial improvements” and trigger requirements for compliance, including a building permit.
- xii. Determine if damaged structures have been designated as historic or that may be eligible for such designation.
- xiii. Review, adjudicate, and resolve Substantial Damage Determination appeals.

The community will need to work with their emergency manager and the MA Emergency Management Agency ([MEMA](#)) Public Assistance Bureau to take advantage of this funding. Your regional state building inspector may also be helpful. For more information about this reimbursement process activated under a Presidentially-declared disaster, refer to [FEMA's Section 1206 webpage](#). Both FEMA and the State can provide training on this topic and process. Make your request to:

- [MA DCR Flood Hazard Management Program](#) (State NFIP office)
- FEMA Region I Massachusetts: katie.rand@fema.dhs.gov

Relevant Definitions & Citations

In the MA 10th Edition Building Code, Substantial Damage requirements are found in several places:

780 CMR 10th Edition, Existing Buildings, Chapter 202 Definitions

SUBSTANTIAL DAMAGE. *For the purpose of determining compliance with the flood provisions of this code**, damage of any origin sustained by a structure whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

**For most MA communities, the “flood provisions of this code” apply only to structures in the FEMA mapped 1% chance floodplain, or Special Flood Hazard Area (SFHA.)*

780 CMR 10th Edition, Residential Code R105.3.1.1

R105.3.1.1 Determination of Substantially Improved or Substantially Damaged Existing Buildings in Flood Hazard Areas and coastal dunes. For applications for reconstruction, rehabilitation, addition, alteration, repair or other improvement of existing buildings or structures located in a flood hazard area or coastal dune as established by section 322.1.1, the building official shall examine or cause to be examined the construction documents and shall make a determination with regard to the value of the proposed work. For buildings that have sustained damage of any origin, the value of the proposed work shall include the cost to repair the building or structure to its pre-damaged condition. If the building official finds that the value of proposed work equals or exceeds 50% of the market value of the building or structure before the damage has occurred or the improvement is started, the proposed work is a substantial improvement or restoration of substantial damage and the building official shall require existing portions of the entire building or structure to meet the requirements of section R322. For the purpose of this determination, a substantial improvement shall mean any repair, reconstruction, rehabilitation, addition or improvement of a building or structure, the cost of which equals or exceeds 50% of the market value of the building or structure before the improvement or repair is started. Where the building or structure has sustained substantial damage, repairs necessary to restore the building or structure to its pre-damaged condition shall be considered substantial improvements regardless of the actual repair work performed. The term shall not include either of the following:

1. Improvements to a building or structure that are required to correct existing health, sanitary or safety code violations identified by the building official and that are the minimum necessary to ensure safe living conditions.
2. Any alteration of a historic building or structure, provided that the alteration will not preclude the continued designation as a historic building or structure. For the purposes of this exclusion, a historic building shall be any of the following:
 - 2.1. Listed or preliminarily determined to be eligible for listing in the National Register of Historic Places.
 - 2.2. Determined by the Secretary of the U.S. Department of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined to qualify as an historic district.
 - 2.3. Designated as historic under a state or local historic preservation program that is approved by the U.S. Department of the Interior.

Note: The exclusion clause for historic buildings states that if a structure meets the definition of "historic," then any alteration does not have to meet the substantial improvement/substantial damage requirement as long as the alteration will be implemented in a way that keeps the historic designation of the building. The code does NOT say that a local building official cannot require mitigation actions to be taken at the time of the alteration, as long as those actions do not preclude the historic designation. For example, the structure may not be able to be elevated and still keep its historic designation, but it may be able to have flood openings installed into an "abandoned basement" and still keep its historic designation.

Local building officials who interpret the code this way are upholding the requirements of the NFIP in a more committed fashion, and are working to protect the property from future flood damages.

780 CMR 10th Edition, Base Code, Chapter 202 Definitions, AND R105.3.1.1.1 Determination of Substantial Repair of a Foundation

SUBSTANTIAL REPAIR OF A FOUNDATION. When work to repair or replace a foundation results in the repair or replacement of a portion of the foundation with a perimeter along the base of the foundation that equals or exceeds 50% of the perimeter of the base of the foundation measured in linear feet, or repair or replacement of 50% of the piles, columns or piers of a pile, column or pier supported foundation, the building official shall determine it to be substantial repair of a foundation. Applications determined by the building official to constitute substantial repair of a foundation shall require all existing portions of the entire building or structure to meet the requirements of Section 1612.

Additionally, the following code citation may apply, per local building official interpretation:

780 CMR 10th Edition, Residential Code, Appendix J 101.3

Multiple categories of work. Work of more than one category shall be part of a single work project. Related work permitted within a 12-month period shall be considered to be a single work project. Where a project includes one category of work in one building area and another category of work in a separate and unrelated area of the building, each project area shall comply with the requirements of the respective category of work. Where a project with more than one category of work is performed in the same area or in related areas of the building, the project shall comply with the requirements of the more stringent category of work.

Definitions for the Substantial Damage (SD) provision found in 44CFR 59.1 and the International Building Codes

Substantial damage means *damage of any origin* sustained by a structure whereby the cost of restoring the structure *to its before damaged condition* would equal or exceed 50 percent of the market value of the structure before the damage occurred. [MA building code 780 CMR & Title 44 CFR part 60.3]

Requirements for Substantial Improvement or Substantial Damage are only for structures located in the FEMA Special Flood Hazard Area (1% chance or “100-year” flood zone)

Substantial improvement means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the “start of construction” of the improvement. This term includes structures which have incurred “substantial damage”, regardless of the actual repair work performed. The term does not, however, include either:

1. Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions or
2. Any alteration of a “historic structure”, provided that the alteration will not preclude the structure's continued designation as a “historic structure”. [MA Building Code & Title 44 CFR part 60.3]

Substantial Repair of a Foundation. When work to repair or replace a foundation results in the repair or replacement of a portion of the foundation with a perimeter along the base of the

foundation that equals or exceeds 50% of the perimeter of the base of the foundation measured in linear feet, or repair or replacement of 50% of the piles, columns or piers of a pile, column or pier supported foundation, the building official shall determine it to be substantial repair of a foundation. Applications determined by the building official to constitute substantial repair of a foundation shall require all existing portions of the entire building or structure to meet the requirements of 780 CMR. [Massachusetts higher standard, as amended by MA in 10th Edition BC]

Historic Structure means any structure that is:

- a. Listed individually in the National Register of Historic Places (a listing maintained by the Department of Interior) or preliminarily determined by the Secretary of the Interior as meeting the requirements for individual listing on the National Register;
- b. Certified or preliminarily determined by the Secretary of the Interior as contributing to the historical significance of a registered historic district or a district preliminarily determined by the Secretary to qualify as a registered historic district;
- c. Individually listed on a state inventory of historic places in states with historic preservation programs which have been approved by the Secretary of the Interior; or
- d. Individually listed on a local inventory of historic places in communities with historic preservation programs that have been certified either:
 - i. By an approved state program as determined by the Secretary of the Interior or
 - ii. Directly by the Secretary of the Interior in states without approved programs. [MA Building Code & Title 44 CFR part 60.3]

Substantial Damage Determination (*same for Substantial Improvement*) means the result of comparing the costs to repair substantial damage (or costs of a proposed improvement) to the market value of a structure for purposes of determining whether the resulting ratio **equals or exceeds** a certain percentage (50 percent in the NFIP minimum requirements). [FEMA SI/SD Desktop Reference P-758]

Note: for structures that have been determined to be substantially damaged, the costs used to make the determination must equal all costs to repair the building to its **pre-damaged** condition. In other words, an owner cannot decide to only repair part of the structure, or to repair it to a lesser condition than it previously had in order to avoid the SD calculation and determination.

Costs to repair includes the costs of all work necessary to restore a damaged building to its pre-damaged condition. (*See Appendix B for a FEMA list of included and excluded costs.*) [FEMA SI/SD Desktop Reference P-758]

Existing cited violation means the condition considered in violation pre-dates the application for a permit (or the date of a damage event) and, importantly, that an official who has the authority to enforce the community's health, safety, and sanitary codes must have prior knowledge of the condition and must have verified that it constitutes a violation by issuing a violation notice. Only work that is directly required for correction of the existing violation can be excluded from the costs of the proposed improvement or repair. All other work must be counted in the estimation of costs. [FEMA SI/SD Desktop Reference P-758]

Increased Cost of Compliance (ICC) is a coverage benefit of an NFIP flood insurance policy for structures in the SFHA that have been substantially damaged by flooding. This benefit covers a portion of the cost to comply with current codes; currently up to \$30,000 may be reimbursed for eligible costs to comply.

Market value is the building's market value before the damage occurred. Only the market value of the structure is pertinent. The value of the land and site improvements (landscaping, driveway, detached accessory structures, etc.) and the value of the use and occupancy (business income) are not included. Typical sources of market value include local current tax assessor data or qualified professional real estate appraisal. [FEMA SI/SD Desktop Reference P-758]

Violation means the failure of a structure or other development to be fully compliant with the community's floodplain management regulations. [FEMA SI/SD Desktop Reference P-758]

Appendices

Appendix A: **Substantial Damage process flow chart** (from Florida)

Appendix B: **Public Notice of Permitting Requirements Post-Disaster**

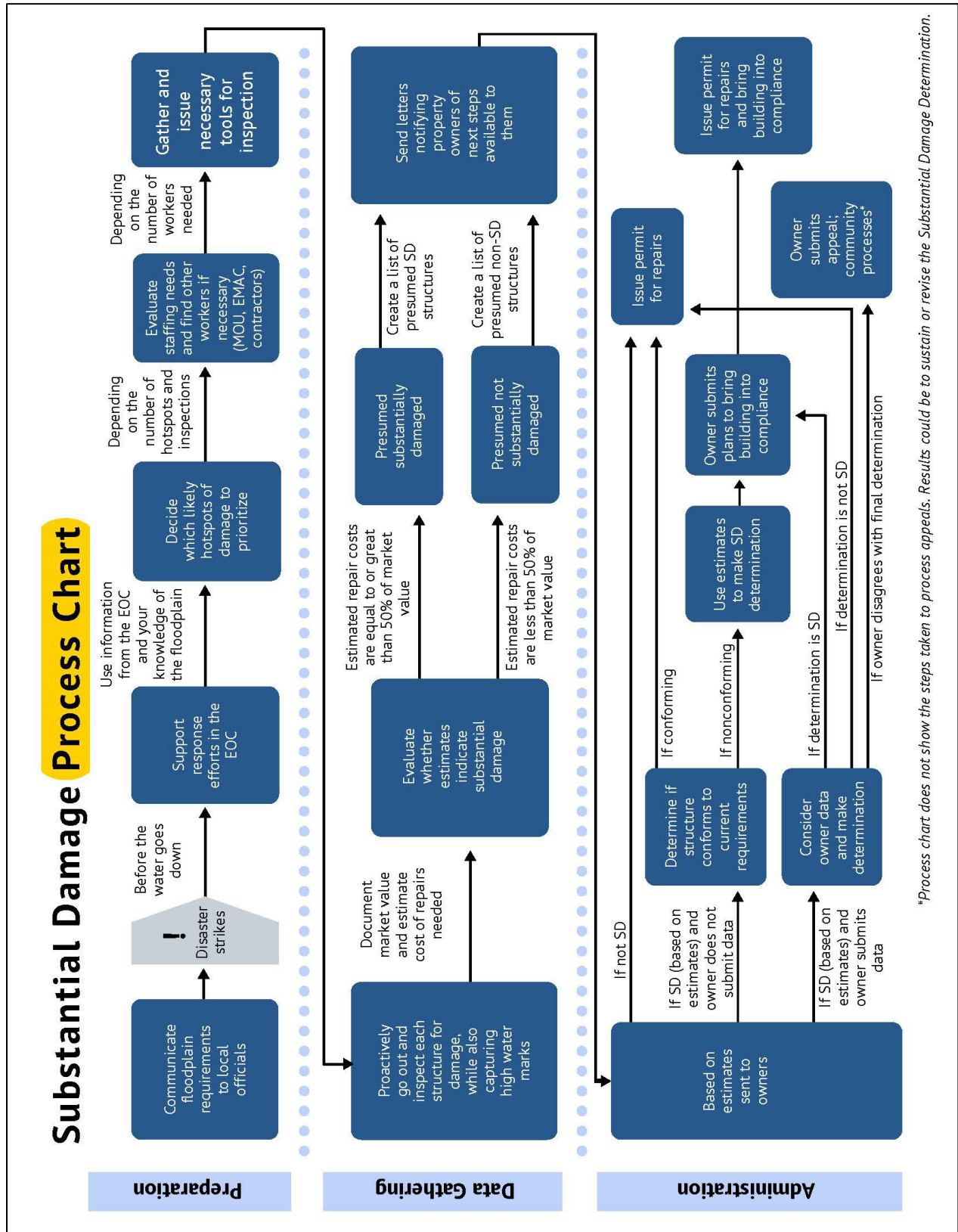
Appendix C: **SI/SD Costs- Must Include, Do Not Include** from FEMA P-758

Appendix D: **Sample SI/SD worksheet**

Appendix E: **Sample SI/SD letters** from FEMA P-758

Appendix F: **Sample Affidavits** from FEMA P-758

Appendix A: Substantial Damage process flow chart (from Florida)



**Notification to Property Owners & Contractors about
Permitting Requirements for Repair of Damaged Buildings in the FEMA Floodplain**

Town of Example, MA

If your building is in the FEMA 1% floodplain you will be required to come in to the Building Department to discuss the cost of repairing your structure BEFORE you apply for a permit. This notification is for both building owners and their contractors—the Town will not approve permits for damaged buildings in the floodplain without first discussing the cost to repair the building to at least its pre-damaged condition.

For more information contact

Town of Example Building Department 617-555-1212

Please leave a message and we will return your call within 1 business day.

Note: If you repair your floodplain property without the appropriate permits you may be subject to a Stop Work Order or other actions for violation of compliance with the Massachusetts Building Code and the National Flood Insurance Program.

Appendix C: SI/SD Costs- Must Include, Do Not Include *FEMA P-758*

Items that must be included in the costs of improvement and the costs to repair are those that are directly associated with the building. The following list of costs that must be included is not intended to be exhaustive, but characterizes the types of costs that must be included:

- Materials and labor, including the estimated value of donated or discounted materials and owner or volunteer labor (see FEMA P-758 chapter 4 for details)
- Site preparation related to the improvement or repair (e.g., foundation excavation or filling in basements)
- Demolition and construction debris disposal
- Labor and other costs associated with demolishing, moving, or altering building components to accommodate improvements, additions, and making repairs
- Costs associated with complying with any other regulations or code requirement that is triggered by the work, including costs to comply with the requirements of the Americans with Disabilities Act (ADA)
- Costs associated with elevating a structure when the proposed elevation is lower than the BFE
- Construction management and supervision
- Contractor's overhead and profit
- Sales taxes on materials
- Structural elements and exterior finishes, including:
 - Foundations (e.g., spread or continuous foundation footings, perimeter walls, chain-walls, pilings, columns, posts, etc.)
 - Monolithic or other types of concrete slabs
 - Bearing walls, tie beams, trusses
 - Joists, beams, subflooring, framing, ceilings
 - Interior non-bearing walls
 - Exterior finishes (e.g., brick, stucco, siding, painting, and trim)
 - Windows and exterior doors
 - Roofing, gutters, and downspouts
 - Hardware
 - Attached decks and porches
 - Interior finish elements, including:

- Floor finishes (e.g., hardwood, ceramic, vinyl, linoleum, stone, and wall-to-wall carpet over subflooring)
- Bathroom tiling and fixtures
- Wall finishes (e.g., drywall, paint, stucco, plaster, paneling, and marble)
- Built-in cabinets (e.g., kitchen, utility, entertainment, storage, and bathroom)
- Interior doors
- Interior finish carpentry
- Built-in bookcases and furniture
- Hardware
- Insulation
- Utility and service equipment, including:
 - Heating, ventilation, and air conditioning (HVAC) equipment
 - Plumbing fixtures and piping
 - Electrical wiring, outlets, and switches
 - Light fixtures and ceiling fans
 - Security systems
 - Built-in appliances
 - Central vacuum systems
 - Water filtration, conditioning, and recirculation systems

Items that can be excluded are those that are not directly associated with the building. The following list characterizes the types of costs that may be excluded:

- Clean-up and trash removal (not associated with demolition of structure)
- Costs to temporarily stabilize a building so that it is safe to enter to evaluate and identify required repairs
- Costs to obtain or prepare plans and specifications
- Land survey costs
- Permit fees and inspection fees
- Carpeting and recarpeting installed over finished flooring such as wood or tiling

- Outside improvements, including landscaping, irrigation, sidewalks, driveways, fences, yard lights, swimming pools, pool enclosures, and detached accessory structures (e.g., garages, sheds, and gazebos)
- Costs required for the minimum necessary work to correct existing violations of health, safety, and sanitary codes
- Plug-in appliances such as washing machines, dryers, and stoves

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

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

Property owner _____

Address _____

Permit No. _____

Location _____

Description of improvements _____

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

\$ _____

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

\$ _____

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

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

Important notes:

1. Review cost estimates to ensure that all appropriate costs are included or excluded.
2. If a residential pre-FIRM building is determined to be substantially improved, it must be elevated to or above the BFE. If a non-residential pre-FIRM building is being substantially improved, it must be elevated or dry-floodproofed to or above the BFE.
3. Proposals to repair damage from any cause must be analyzed using the formula shown above.
4. Any proposed improvements or repairs to a post-FIRM building must be evaluated to ensure that the improvements or repairs comply with floodplain management regulations and to ensure that the improvements or repairs do not alter any aspect of the building that would make it non-compliant.

5. Alterations to and repairs of designated historic structures may be granted a variance (or be exempt under the substantial improvement definition) provided the work will not preclude the structure's continued designation as a "historic structure."
6. Any costs associated with directly correcting existing health, sanitary and safety code violations may be excluded from the cost of improvement (or repair.) The violation must have been officially cited prior to submission of the permit application.

Determination completed by _____

Date _____

Appendix E: Sample SI/SD letters

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

Sample Letter to notify property owners of a Determination that work constitutes Substantial Improvement

Notice of Substantial Improvement Determination (Residential)

Dear Property Owner:

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

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

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

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

Sample Letter to notify property owners of a Determination that work constitutes repair of Substantial Damage

Notice of Substantial Damage Determination (Residential)

Dear Property Owner:

We have reviewed your recent application for a permit to repair your existing home that was damaged by *[insert cause of damage]*. The building is located in a mapped Special Flood Hazard Area. As required by our floodplain management regulations and/or building code, we have determined that the building has been substantially damaged.

This determination is based on a comparison of the cost estimate of the work required to restore the building to its pre-damage condition to the market value of the building (excluding land value). When the cost to repair equals or exceeds 50 percent of the market value of the building, the work is repair of substantial damage.

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

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

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

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

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

Notice of Determination (Residential)

Dear Property Owner:

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

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

Appendix F: Sample Affidavits

These affidavits are found in FEMA's P-758 publication, Appendix D

Sample Owner's Affidavit: Substantial Improvement or Repair of Substantial Damage

Property Address:

Parcel ID Number:

Owner's Name:

Owner's Address/Phone:

Contractor:

Contractor's License Number:

Date of Contractor's Estimate:

I hereby attest that the description included in the permit application for the work on the existing building that is located at the property identified above is all of the work that will be done, including all improvements, rehabilitation, remodeling, repairs, additions, and any other form of improvement. I further attest that I requested the above-identified contractor to prepare a cost estimate for all of the work, including the contractor's overhead and profit. I acknowledge that if, during the course of construction, I decide to add more work or to modify the work described, that the *[insert community]* will re-evaluate its comparison of the cost of work to the market value of the building to determine if the work is substantial improvement. Such re-evaluation may require revision of the permit and may subject the property to additional requirements. I also understand that I am subject to enforcement action and/or fines if inspection of the property reveals that I have made or authorized repairs or improvements that were not included in the description of work and the cost estimate for that work that were the basis for issuance of a permit.

Owner's Signature:

Date:

Notarized:

Sample Contractor's Affidavit: Substantial Improvement or Repair of Substantial Damage

Property Address:

Parcel ID Number:

Owner's Name:

Owner's Address/Phone:

Contractor:

Contractor's License Number:

Date of Contractor's Estimate:

I hereby attest that I have personally inspected the building located at the above-referenced address and discussed the nature and extent of the work requested by the owner, including all improvements, rehabilitation, remodeling, repairs, additions, and any other form of improvement. At the request of the owner, I have prepared a cost estimate for all of the improvement work requested by the owner and the cost estimate includes, at a minimum, the cost elements identified by the [community] that are appropriate for the nature of the work. If the work is repair of damage, I have prepared a cost estimate to repair the building to its pre-damage condition. I acknowledge that if, during the course of construction, the owner requests more work or modification of the work described in the application, that a revised cost estimate must be provided to the [*insert community*], which will re-evaluate its comparison of the cost of work to the market value of the building to determine if the work is substantial improvement. Such re-evaluation may require revision of the permit and may subject the property to additional requirements. I also understand that I am subject to enforcement action and/or fines if inspection of the property reveals that I have made or authorized repairs or improvements that were not included in the description of work and the cost estimate for that work that were the basis for issuance of a permit.

Owner's Signature:

Date:

Notarized: