

**National Flood
Insurance Program**

**SUBSTANTIAL DAMAGE
DETERMINATIONS**

A guide for local officials







Substantial Damage Training at Village of Russells Point, Logan County, July 16, 2003

Prepared by:
Christopher M. Thoms, CFM, Program Manager
Division of Soil & Water Resources — Floodplain Management Program
Ohio Department of Natural Resources

revised 2013
Originally published 1998
This guide is available from ODNR's website at:

http://www.dnr.state.oh.us/water/floodpln/S_Damage_06/tabid/3521/Default.aspx

Funded through a FEMA Cooperative Agreement as part of the Community Assistance Program –State Support Services Element of the National Flood Insurance Program.



A man standing in front of his flood-damaged home, asked an assorted group of local, state, and federal officials, *Who's responsible for telling me what I can do now?*

He wanted to get on with repairing his home, his possessions, his life. Though days after the flood waters had receded, the local floodplain administrator had not yet told him about the local flood hazard reduction regulations or the required floodplain development permit. It probably seemed easier not to, before the flood.

Days later that resident and many of his neighbors were demanding to know, *Why?* Why had their officials not warned them, not told them that their community had flood hazard reduction regulations that, if followed, could have reduced their flood risk to life and property?

Flood recovery is important, but reducing flood risk—before the next flood—is far more important. Unless our citizens have the tools they need to reduce their exposure to flood hazards then we are fighting a losing battle.

FEMA & ODNR offer a variety of training opportunities and materials such as this guide, but the best tools are worthless if not used.

Who's responsible for telling me what I can do now? First and foremost, the answer is, **you**, the local floodplain administrator.

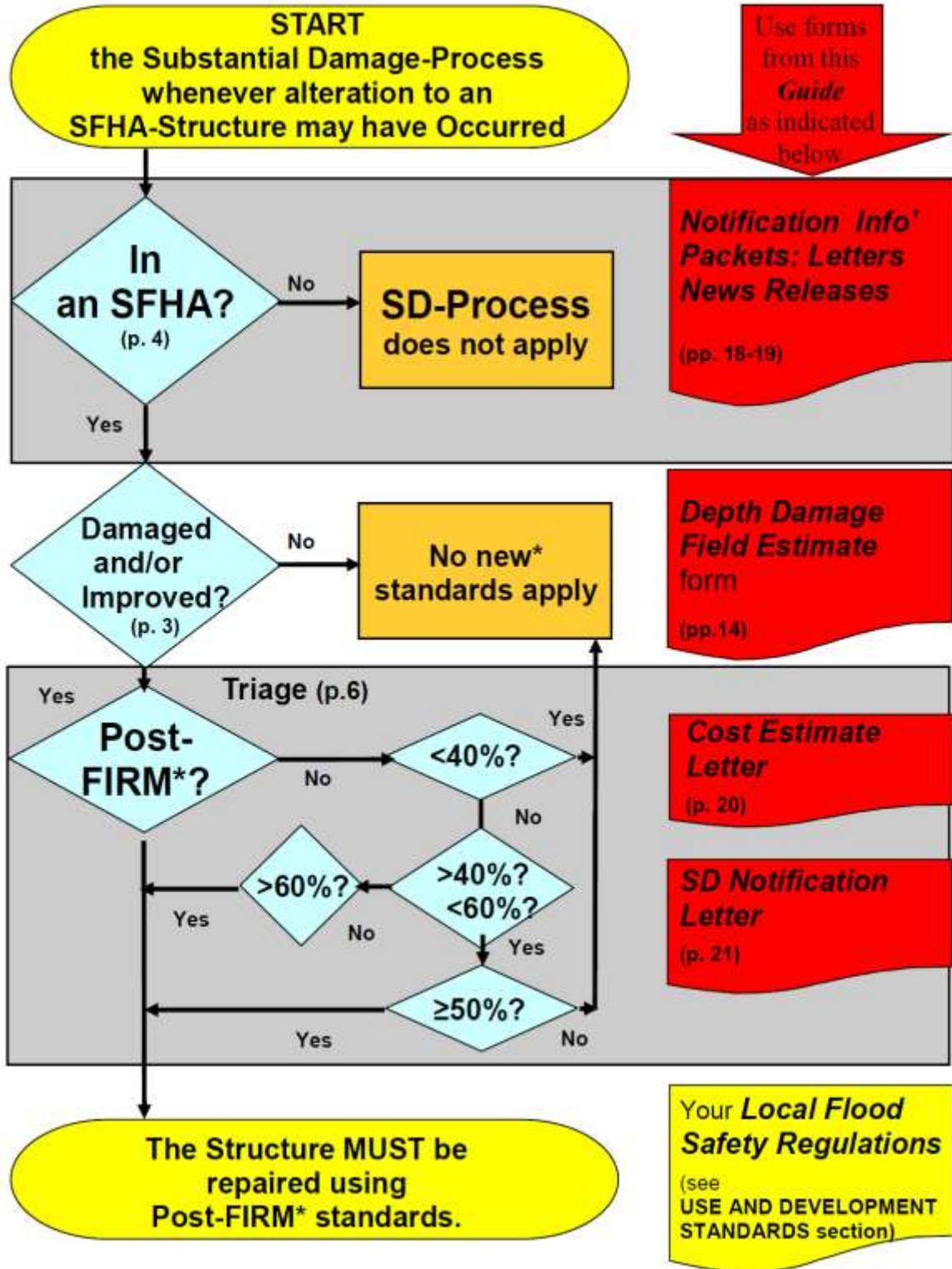


CONTENTS

I.	Substantial Damage (SD) determination SOP at a glance.....	1
II.	Guide to the Guide	2
III.	When to Conduct SD Determinations.....	3
	The 50% Rule.....	3
IV.	Where to Conduct SD Inspections.....	4
	1. Pre-FIRM vs. Post-FIRM	4
	2. Where did the Damage Occur?.....	5
	3. What's Going on in my Floodplain?.....	5
	4. Get the Word Out	5
V.	How To Conduct SD Determinations.....	6
	1. <i>DEPTH</i> vs. <i>PERCENT DAMAGE FIELD ESTIMATE</i> forms.....	6
	2. Triage.....	7
	3. What Supplies Do I Need?	8
	4. Excluded /Included Items Lists.....	8
	5. Determining Pre-Flood Market Value	9
	6. SD Determinations vs. Building Inspection	9
VI.	Flood Recovery Resources.....	10
	1. Outside Help (OBOA Inspectors).....	10
	2. Phone Numbers.....	11
VII.	RECORDS MANAGEMENT	12
	Appendix (Forms & Templates)	13
	1. Depth Damage Field Estimate form.....	14
	Depth Damage Field Estimate Instructions.....	15
	2. Percent Damage Field Estimate Form (for non-flood events).....	16
	Percent Damage Field Estimate Instructions.....	17
	3. News Release	18
	4. Disaster Recovery Information Notice.....	19
	5. Cost Estimate Letter	20
	6. Flood Damage Field Estimate Notice.....	21
	7. Notification Letter to Property Owner of SD Determination	22
	8. Request for OBOA Inspectors.....	23



I. SD DETERMINATION SOP AT A GLANCE



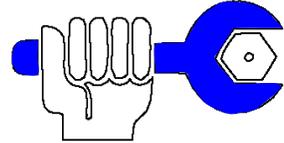
* Refers to the current FIRM and current regulations. (See page 4 for more details).



II. A GUIDE TO THE GUIDE

This guide is intended to provide the local floodplain manager with readily accessible information and tools to conduct damage inspections, substantial damage determinations, and documentation of compliance as part of your NFIP-responsibilities. Chapter ** contains the form (with instructions) and information for conducting and reporting the field inspections and may be used separately when training inspectors.

Look for this symbol to indicate that a useful form or example is attached. The forms necessary to complete this process are included. Related materials are included whenever practical.



Look for this symbol to indicate additional information or materials that may be needed or helpful. To avoid unnecessary duplication this guide assumes **you** have an understanding of your basic responsibilities as a local floodplain manager, the requirements for NFIP-participation, and the terminology of floodplain management.



Look for this symbol to indicate a reference. Many publications can be downloaded at our website at <http://www.dnr.state.oh.us/water/tabid/3519/Default.aspx>. For more information concerning these concepts, please refer to *The National Flood Insurance Program Handbook for Local Permit Officials* (ODNR), *The National Flood Insurance Program Floodplain Management Requirements* (FEMA 480), and *Answers to Questions About Substantially Damaged Buildings* (FEMA 213).



The *Handbook* contains a detailed description of the local floodplain administrator's responsibilities while a further discussion of the substantial damage determination process is found in *Answers*. A complete description of the NFIP regulations is contained in *THE CODE OF FEDERAL REGULATIONS AT 44 CFR 59 ET. SEQ.*

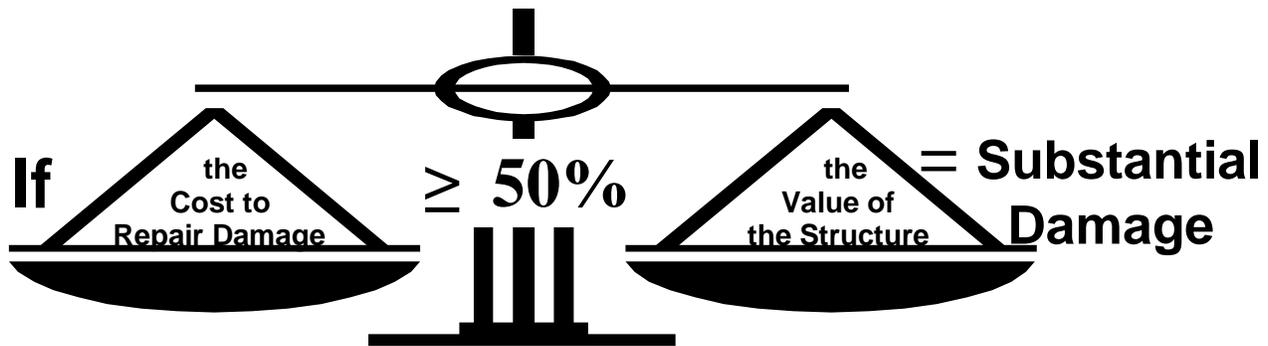
Look for this symbol to indicate that the information required must be acted upon quickly. Following a flood, timely and accurate information from **you**—the local floodplain administrator—allows citizens to know what flood safety requirements apply to them and to consider what they can do beyond those minimum requirements to further reduce their flood risk.



When a structure is *Substantially Damaged* and / or *Substantially Improved* the applicable requirements of your local flood hazard reduction regulations change. The following information describes how you determine when this change occurs and what you need to do about it. We at ODNR can help, but only **you** can do your job.



III. WHEN TO CONDUCT SUBSTANTIAL DAMAGE DETERMINATIONS



Substantial Damage Determinations



In addition to your other floodplain management responsibilities, whenever a structure in a Special Flood Hazard Area (SFHA) is altered, whether by damage or improvement or some combination of both, **you**—the local floodplain official—must evaluate the extent of the alteration to determine the applicable local flood safety standards.

Your local floodplain regulations establish a minimum level of flood safety for structures at risk of flood damage. The substantial damage determination process is an important part of your community's flood hazard reduction strategy and a requirement for all National Flood Insurance Program (NFIP)-participating communities.

The 50% Rule

. . . 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 value of or actual cost of repair work performed.

(Contained in 44 CFR 59.1 as part of the definition of **Substantial Improvement**.)

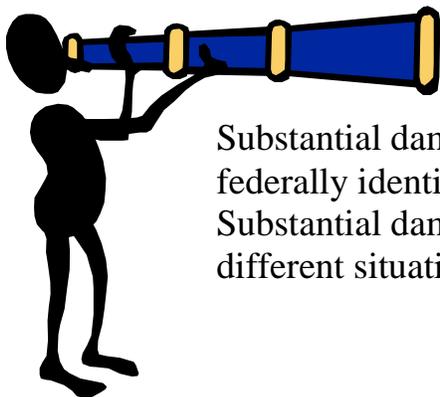


This 50% threshold can be reached by damage (from any source) or improvement or any combination of the two. The repair costs include all costs *necessary* to return the structure to its pre-flood condition, even if the property is not returned that condition.





IV. WHERE TO CONDUCT SD DETERMINATIONS



Substantial damage determinations apply only to structures in federally identified Special Flood Hazard Areas (SFHAs).¹ Substantial damage requirements apply to structures in two different situations.

- 1) All *Pre-FIRM*. These are all structures originally built before the *initial* date of your Flood Insurance Rate Map (FIRM). This date may differ from your *currently* effective FIRM date. Refer to your FIRM (above the map scale legend) or FIS for this date.
- 2) Some *Post-FIRM*. When subsequent revisions to the FIRM initially identify a structure to be in an A (or AE) Zone or as being below an increased Base Flood Elevation (BFE), those *between-FIRM* structures may require a substantial damage determination to ensure compliance with the community's current flood safety standards.



See *NFIP Floodplain Management Requirements* (FEMA #480). Unit 8 *Substantial Improvement And Substantial Damage*



Pre-FIRM structures that are not substantially damaged (and/or improved) and structures on the National Register of Historic Places are not required to comply with the Post-FIRM standards of your local flood hazard reduction regulations. Also, the cost of correcting pre-flood, identified code violations is not included in calculating substantial damage. Post-FIRM structures, whether substantially damaged (and/or improved) or not, are required to comply with the community's Post-FIRM standards in effect at the time of construction, regardless of whether any damage occurs.

Otherwise, anytime a structure in the SFHA is substantially damaged and/or improved, that structure must be brought into compliance with the community's Post-FIRM standards.



All NFIP-participating communities **must** have copies of their *Flood Insurance Study* (FIS), and *Flood Insurance Rate Map* (FIRM). Obtain both from the online **FEMA Flood Map Store** at www.fema.gov or call (800) 358-9616. Do this **before the flood!** Download portions of most FIRMs (called *FIRMettes*), free of charge, from the FEMA website's Map Service Center.

¹ The SD-process also applies to areas that the local floodplain administrator regulates using the community's *Data Use and Flood Map Interpretation* criteria (see ODNr's Model *Special Purpose Flood Damage Reduction Regulations* §3.11).



IV. WHERE TO CONDUCT SD DETERMINATIONS

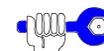


Where did the Damage Occur?

Following a widespread flood, your local emergency response agencies will identify the extent of the flooded area. Be sure to coordinate your activities benefit from one another's efforts.

Whatever the size of the damage event, you—with help as necessary—should inspect the damaged site or sites.

During your inspections, identify damaged structures, assess the extent of damage, and remind the owners of your community's flood hazard reduction regulations, along with their need to apply for and obtain an approved flood hazard development permit **before** reconstruction. Residents may be upset with your regulations but they will have far less cause to be upset if they only need to rebuild once. Don't keep your flood risk reduction regulations a secret!



See samples
3 and 4



What's going on in my Floodplain?

The bigger your community, the more you will need to depend upon others to notify you of possibly substantially damaged structures Maintenance, construction, and other workers who are regularly in the field are invaluable eyes and ears for day-to-day information on floodplain activities. Let them know what to look for and provide a way for them to keep you informed about what they see.



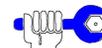
Before a flood, you should become acquainted with your local emergency response agencies (*e.g.*, Ohio Emergency Management Agency (OEMA), your county EMA, fire/rescue department(s), police department(s), health department(s), Red Cross *etc.* Learn about their roles and how they help your community recover when floods occur. Discuss with them your responsibilities for post-flood substantial damage determinations and the contribution of flood protection standards to reducing your community's future flood risk.



Get the Word Out



Before and after a flood, let your community know what flood safety information is available. After a flood, put a announcement in your local newspaper and on your community's website, notifying your residents of the need to obtain a flood hazard development permit. Contact affected home and business owners and let them know what information they will need before they begin their repairs. Post your flood hazard area maps online and in accessible public locations.



See samples
3, 4, and 6



V. HOW TO CONDUCT SD DETERMINATIONS



Triage



Just as in the aftermath of battle, when military surgeons quickly group the wounded the severity of their injuries; following a flood (or other disaster), the local floodplain official needs to focus attention and resources wisely. The floodplain official should quickly identify and begin assessment of structures thought to be damaged. Since flooding can result in extensive damage to many structures, you will find it helpful to group damaged structures in three broad groups. Please note, floodplain development permits are required for all three groups

Group 1 Post-FIRM structures (these must comply with Post-FIRM standards¹) and any Pre-FIRM structures that have received little to no damage (40% or less) can forego a more detailed assessment.



Answers to Questions About Substantially Damaged Buildings (FEMA #213) p. 9
<http://www.fema.gov/hazards/floods/lib213.shtm>

Group 2 Pre-FIRM¹ structures that possibly have received substantial damage (40% to 50%) should undergo a detailed assessment. Post-FIRM regulatory standards apply to all SD-structures.²



Group 3 All Pre-FIRM¹ structures that have obviously received substantial damage (50% or more) can forego a more detailed assessment. Post-FIRM regulatory standards apply. Maintain documentation of the damage to avoid misunderstandings.²



No matter the group, all violations of your flood safety regulations must be corrected to the maximum extent practical. FEMA must approve anything short of full compliance with your regulations. Before accepting anything short of full compliance, contact the FMP at (614) 265-6750 for assistance with your compliance tactics.

1. See p.3 for discussion of *between*-FIRM structures.
2. Send a letter notifying property owners of the applicable flood safety standards. Pre-FIRM standards apply to the Pre-FIRM structures that are not substantially damaged.



See sample 6

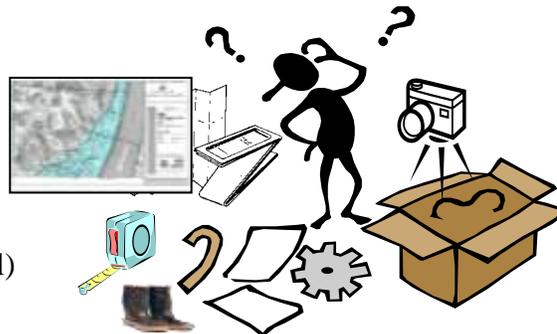


V. HOW TO CONDUCT SD DETERMINATIONS

What supplies do I need?



- Community flood map (*i.e.*, FIRM),
- Parcel Map with addresses map showing individual lots (helpful to have FEMA-floodplain boundaries drawn on),
- *DEPTH DAMAGE FIELD ESTIMATE* form (p.14 and discussion below),
- Tape measure,
- Pencil/Pen
- Camera (digital preferred),
- Boots,
- Gloves,
- Insect Repellant,
- Disinfectant Wipes, and
- SD Field Estimate Tags (optional)



DEPTH vs. PERCENT DAMAGE FIELD ESTIMATE forms



Following a flood, the number of damaged structures may be overwhelming. ODNR's Floodplain Management Program has developed the *DEPTH DAMAGE FIELD ESTIMATE* form (pp.14-15) to assist you to efficiently capture essential information to make substantial damage determinations for **flood-related** damages. For non-flood-related damages see **PERCENT DAMAGE FIELD ESTIMATE** form (pp. 16-17). This older form can be used for flood-damages but takes far more time per structure.



ODNR FMP's DEPTH DAMAGEFIELD ESTIMATE form was created to provide rapid, reliable, initial damage estimates. Property owners with structures that have damages in the 40%'s (shaded on table) should be asked for documentation of damage and repairs to ensure that the structure is not substantially damaged. Additional credible information should always be welcomed.

When using the **Depth Damage** form, typically only two reference points per-structure are required: the floodwater mark and lowest adjacent grade (LAG). The measured distance between those two points is marked on the **Depth in feet to LAG** column. The estimated percent of damage is listed under the appropriate **Type of Structure** column. The **Depth in feet to LAG** column ranges from 2' to 9' depth above LAG, where LAG is 0'. For a structure with a compliant **Enclosure Below Lowest Floor**, use the lowest floor instead of LAG to measure depth of flooding (see p. 15 figure 4). The portion of the table used focuses on Triage Group2 (see p. 6) since generally, depths <2' do not exceed 50% and depths >9' are likely to exceed 50%.



The depth damage figures are based upon the USACE *Generic Depth-Damage Relationships* (see <http://www.usace.army.mil/cw/cecw-cp/library/egms/egms.html>).

FEMA's *Substantial Damage Estimator* software may be used to produce a detailed standardized damage report that considers the specific type and quality of various elements of each altered structure. The CD includes a *Users Guide* with sample-forms and instructions. The SDE requires use of *Marshall & Swift Residential Cost Handbook* or similar industry-accepted reference.





V. HOW TO CONDUCT SD DETERMINATIONS



Based upon *NFIP Floodplain Management Requirements* (FEMA #480), Unit 8 p. 8-8 & *Answers to Questions About Substantially Damaged Buildings* (FEMA #213), p. 10

EXCLUDED ITEMS LIST

Items considered **real property** *do not* include:

- the land itself,
- plans & specifications,
- survey costs,
- permit fees,
- non-structural debris removal (*e.g.*, removal of debris from building or lot, dumpster rental, transport fees to landfill and landfill tipping fees),
- clean-up (*e.g.*, dirt and mud removal, building dry out, *etc.*).

Items **not** considered real property, such as:

- throw rugs or carpeting over finished floors,
- furniture,
- refrigerators,
- stoves (not built-in), *etc.*

Outside improvements, including:

- landscaping,
- detached accessory structures (*e.g.*, sheds, gazebos, garages, screened pool enclosures),
- sidewalks,
- fences,
- yard lights,
- swimming pools,
- landscape irrigation systems.



INCLUDED ITEMS LIST

To determine damage cost, consider all **structural elements** including:

- spread or continuous foundation footings and pilings,
- monolithic or other types of concrete slabs,
- bearing walls, tie beams and trusses,
- wood or reinforced concrete decking or roofing,
- floors and ceilings, 
- attached decks and porches,
- interior partition walls,
- interior and exterior wall finishes
- windows and doors,
- re-shingling or re-tiling a roof,
- hardware,
- kitchen and bathroom fixtures and cabinets,
- built-in appliances,
- built-in bookcases, cabinets, and furniture,
- HVAC equipment,
- plumbing and electrical services,
- bathroom tiling and fixtures,
- light fixtures & ceiling fans,
- security systems,
- water filtration, conditioning or re-circulation systems,
- labor and other costs associated with demolishing, removing, or altering building components,
- overhead and profit.



V. HOW TO CONDUCT SD DETERMINATIONS

Sources of Market Value

Actual Cash Value may be used as a substitute for **Market Value**, but **Replacement Cost** may not be used.

Possible sources for value are:

- The tax assessment value of the structure, adjusted for appreciation or depreciation
or
- A state licensed appraisal of the structure



Note: Any value derived from the property location should be attributed to the value of the land, not the structure. Substantial Damage and Improvement determinations apply to the value of the **STRUCTURE ONLY**.



For a more detailed discussion of *Actual Cash Value & Market Value* determinations see, *Answers to Questions About Substantially Damaged Buildings* (FEMA #213), p. 10 and *NFIP Floodplain Management Requirements* (FEMA #480), Unit 8 p. 8-9



For additional information about using flood safety techniques when repairing flood damaged structures, visit fema.gov

Sources for Cost of Repair

- Estimate from a licensed general contractor
or
- Estimate from a licensed appraiser
or

Estimation process of the local floodplain official



SD Determinations vs. Building Inspection for Health/Safety/Occupancy

A substantial damage determination is required by a community's floodplain management regulations for every damaged Pre-FIRM structure in the federally identified (100-year) floodplain. It may be conducted along with other health and safety inspections but must address your specific flood risk reduction criteria.



VI. FLOOD RECOVERY RESOURCES

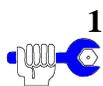


Outside Help Map Be Available



Following large disaster events, the number and scope of substantial damage determinations can overwhelm a local floodplain manager and bring compliant reconstruction to a standstill. When this happens, a local floodplain manager is encouraged to use other inspectors to assist with this process. Contact your county emergency management agency (EMA) director to request assistance with damage inspections. The Ohio Building Officials Association (OBOA) and ODNR have trained building inspectors in substantial damage determinations and OBOA may be able to provide assistance for substantial damage determinations to a community overwhelmed by a flood.

To request this assistance please follow the steps below:



1. The community should send a written request to the county EMA director (see **Sample 8** p. 23). This request must be signed by the CEO of the community. The county EMA director then forwards the request to the Ohio Department of Natural Resources, Floodplain Management Program at (614) 265-6750 or email attachment to christopher.thoms@dnr.state.oh.us.



2. To be able to help, OBOA needs: 1) an initial estimate of how many structures; 2) the general location for inspections¹ (political subdivision, boundary streets, or subdivision names, *etc.*) When possible, the community should have filled out identification information on the top of the *Depth-Damage Field Estimate* form; and 3) community contact person's name, phone number, and address for each political subdivision requesting assistance.

OBOA will also need commitment by the requesting community for the following:²

1. Lodging arrangements made for the inspectors.
2. A place available to fuel the vehicles.
3. A commitment that the inspectors will be reimbursed for their meals.
4. Assurance that if the requesting community gets reimbursed for other expenses (*e.g.*, vehicle, labor, and benefits), the responding inspector's community will be reimbursed for those expenses.



ODNR's Floodplain Management Program will work with the OBOA Coordinator as quickly as possible so that your community will receive prompt follow-up from the OBOA coordinator to finalize the support service. Floodplain Management Program staff will monitor the OBOA effort and provide statewide situation reports. If you have questions, you may contact the Floodplain Management Program office at 614-265-6750.

¹Remember that substantial damage determinations are only required for structures in SFHAs.



²Please note that at this time the expenses for lodging, fuel and meals are not reimbursable through the FEMA Public Assistance Program should a disaster be declared.



VI. FLOOD RECOVERY RESOURCES



Who Was That Masked Man?



You are not alone. This can be a blessing, or a curse, or both. During and after a flood, various government and private agencies will be in your community and contacting your citizens to assess damage and facilitate disaster relief. Familiarizing yourself with these organizations, their goals and their methods—before the flood—will enable you to best use their services and to answer the many questions of your citizens. Coordination can also help reduce unnecessary duplication of effort resulting in a quicker, smarter recovery.

Private agencies may also be obtaining useful information for your community’s flood recovery. The American Red Cross, local religious or civic organizations should not be overlooked when coordinating your flood recovery efforts. These *first responders* to flood disaster will be able to assist you in the location, extent, and type of damage you need to deal with.

Basic phone numbers for to have ready:

FEMA

To register for (*federally-declared*) disaster-assistance: **(800) 621-FEMA [3362]**.

For questions about the progress of federal disaster assistance: **(800) 310-3169**

For general flood insurance information: **(800) 427-4661**

For copies of Flood Maps and Flood Insurance Studies: **(800) 358-9616**

ODNR, Floodplain Management Program: (614) 265-6750

OEMA: (614) 799-3530

_____ **(Your) County EMA:** _____ (Record their number here.)

To contact your county EMA director, check: www.ema.ohio.gov/county.htm

Police /Sheriff department(s): _____ (Record their number here.)

Fire department(s): _____ (Record their number here.)

Health department(s): _____ (Record their number here.)

and **Red Cross:** _____ (Record their number here.)



Visit www.fema.gov for a wide range of *how-to* information about reconstruction of residential and non-residential structures, manufactured home installation and non-residential floodproofing. ODNR’s Floodplain Management Program website at: www.ohiodnr.com/water/Home/default/tabid/3252/Default.aspx can also help you obtain many of these publications & financial program information. Our online *Handbook for Local Permit Officials* (www.dnr.state.oh.us/water/floodpln/fphandbook/tabid/3514/Default.aspx) contains a list of technical and financial aid sources available for flood hazard mitigation. Our office also provides continuing assistance with a variety of your floodplain management duties (See APPENDIX B for some examples).



The **Ohio Emergency Management Agency (OEMA)** offers financial and planning assistance for flood hazard mitigation. For information about the **Hazard Mitigation Grant Program (HMGP)** and **Flood Mitigation Assistance (FMA)**.





VII. RECORDS MANAGEMENT

Record keeping by local government is a vital post-flood task that is often given less attention than it requires. The tremendous responsibilities of providing emergency response and quickly posting damaged buildings can overshadow the importance of the paperwork that these tasks create.



The need to document observations, actions, decisions, and inspections; legal considerations; and financial issues make adequate record management an absolute necessity.

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

Soon following a disaster event, you should send a list to FEMA of the substantially damaged structures in your community, along with a description of what will be done to ensure that each structure is rebuilt in compliance with your flood safety standards



The records you keep may be requested by Federal or State staff to confirm compliance with the NFIP regulations and may be required for Hazard Mitigation Grant Program (HMGP) applications. Records will support that you have done your job correctly and that your community is meeting its NFIP responsibilities. Send your substantial damage information to FEMA's **Natural and Technological Hazards Division**, 536 South Clark Street, 6th Floor, Chicago, Illinois 60605, (312) 408-5500.

You must obtain and maintain documentation in support of each substantial damage determination in addition to your *regular* floodplain development records. To do this, you may use valid owner-provided insurance appraisals, contractor estimates, *etc.* when determining the extent of alteration. You may also use other resources to supplement and standardize your process.



The more quickly you collect accurate substantial damage information, the more likely you will be able to work with your residents to incorporate your flood safety standards in their repairs and maintain your community's eligibility for disaster assistance. A model *Special Flood Hazard Development Permit Application* (with detailed instructions) is provided in ODNR's **Handbook For Local Permit Officials**. The **Handbook** can be downloaded at: <http://www.dnr.state.oh.us/water/floodpln/fphandbook/tabid/3514/Default.aspx>



APPENDIX (Forms & Templates)

The following forms are provided for a quick use or copying:

1. DEPTH DAMAGE FIELD ESTIMATE form	14
2. PERCENT DAMAGE FIELD ESTIMATE form	16
3. NEWS RELEASE template.....	18
4. DISASTER RECOVERY INFORMATION template.....	19
5. COST ESTIMATE LETTER template	20
6. FLOOD Damage FIELD ESTIMATE NOTICE.....	21
7. NOTIFICATION TO PROPERTY OWNER template	22
8. REQUEST FOR OBOA INSPECTORS template	23





RESIDENTIAL DEPTH-DAMAGE FIELD ESTIMATE FORM (FOR FLOOD-RELATED DAMAGES ONLY)



RESIDENTIAL DEPTH DAMAGE FIELD ESTIMATE				(jurisdiction)		(County)						
(owner/renter)				Spoken to?		()						
				Yes	No							
(Street Address)				(PO Community)		OH	(Zip)					
DATE OF INSPECTION	DATE OF CONSTRUCTION	FIRM PANEL	INITIAL FIRM DATE	SOURCE OF DAMAGE	DURATION OF FLOODING	TIME OF INSPECTION						
/ /	/ /		/ /	Flood		M.						
TYPE OF STRUCTURE :		ONE STORY		TWO OR MORE		SPLIT LEVEL		MANUFACTURED HOME				
Circle whether the structure has a Basement.		Yes	No	Yes	No	Yes	No	Yes	No			
Circle number on the right that matches the Type of Structure with the figure on reverse.		1	1 4	2	2 4	3	3 4	na	na 4			
TRIAGE GROUP 3 Damages ≥ 50% require the use of Post-FIRM flood safety standards.		Depth in feet from high watermark to Lowest Adjacent Grade (LAG)	9	78%	71%	61%	52%	62%	56%	The 3' level is an estimate of the Manufactured Home's lowest floor when on its wheels. Adjust as needed.		
TRIAGE GROUP 2 Damages between 40% & 50% require further information to determine which flood safety standards apply.			8	74%	67%	56%	49%	58%	49%			
TRIAGE GROUP 1 Damages < 50% use of Post-FIRM flood safety standards optional.			7	70%	63%	52%	45%	54%	42%			
			6	65%	59%	47%	41%	49%	36%			
			5	59%	53%	42%	36%	44%	29%			
			4	52%	47%	37%	31%	39%	23%		SD	SD
			3	46%	40%	32%	26%	33%	17%			
			2	39%	32%	27%	21%	28%	13%			
Notes:												
INSPECTED BY:						(name / title)		Posted?				
								Yes				
								No				
								Rev				
For further help with completing and using this form, see explanatory notes and diagrams on reverse.									9/11/08			

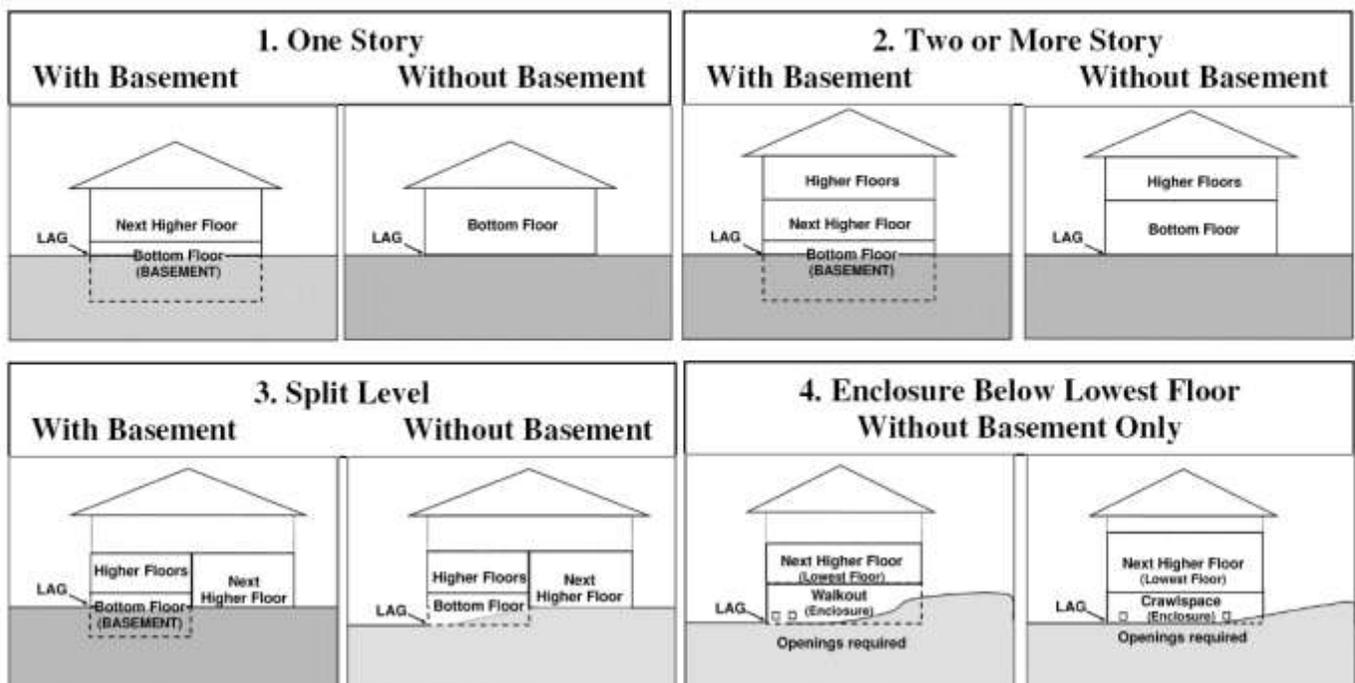


RESIDENTIAL DEPTH-DAMAGE FIELD ESTIMATE INSTRUCTIONS (FOR FLOOD-RELATED DAMAGES ONLY)



The **DEPTH DAMAGE FIELD ESTIMATE** worksheet captures essential information to make Substantial Damage (SD) determinations for flood-related damages only. For non flood-related damages see page 20. It is intended that this worksheet should be mostly self-explanatory. The following are a few comments and clarifications that will assist you when filling out the worksheet.

1. **Jurisdiction:** A property's mailing address (*e.g.*, *Post Office Community*) is not always the same as its jurisdiction, enter the correct information for each structure.
2. **SOURCE OF DAMAGE** indicates whether the damage was the result of flood, fire, wind, *etc.*, or a combination of sources. Use the **DEPTH DAMAGE FIELD ESTIMATE** worksheet for flood-related damages. Use the **PERCENT DAMAGE FIELD ESTIMATE** worksheet for non-flood-related damages.
3. **FIRM PANEL:** Some communities have multiple panels. The panel number is found below the map title.
4. **DATE OF INITIAL FIRM** refers to the community's Flood Insurance Rate Map (FIRM). The initial date indicates when the Special Flood Hazard Areas (SFHA)s were first identified by FEMA.
5. The **Depth in feet from high watermark to Lowest Adjacent Grade (LAG)** refers to the level of the flood water (*i.e.*, The worksheet table focuses on depths in and near Triage Group 2).
6. Round depths to the nearest whole foot.
7. Property owners with structures that have damages in the 40% (darkest shade on table) should be asked for documentation of damage and repairs to determine which flood risk reduction standards apply.
8. For a structure with a compliant **Enclosure Below Lowest Floor** (see figure 4 below) use lowest floor instead of lowest adjacent grade to measure depth of flooding. Compliant enclosures must have openings.
9. Since currently, **Manufactured Homes** are not included in the USACE depth-damage tables, consider a floodwater depth of one foot above lowest floor to indicate substantial damage.
10. Local Floodplain Officials must give property owners **written notice** that their structure has been determined to be substantially damaged, along with instructions to comply with local permit requirements. A model SD-notification letter is included on page 16.





PERCENT DAMAGE FIELD ESTIMATE FORM (FOR NON-FLOOD-RELATED DAMAGES)



PERCENT DAMAGE FIELD ESTIMATE form				<i>(jurisdiction)</i>		<i>(County)</i>	
<i>(owner/renter)</i>				Spoken to? Y / N		()	
<i>(Street Address)</i>				<i>(PO Community)</i>		OH <i>(Zip)</i>	
DATE OF INSPECTION	DATE OF CONSTRUCTION	TYPE STRUCTURE	SOURCE OF DAMAGE	DURATION FLOODING*	VISIBLE DAMAGE	DEPTH* (w/ location)	
/ /	/ /				Y / N	<i>(Estimate)</i>	
TIME OF INSPECTION	FIRM PANEL	# of STORIES	ATTACHED GARAGE			<i>(Estimate)</i>	
M.			Y / N				
ELEMENTS		Qual	%	Wt	@	Comments	Photo
FOUNDATION (perimeter / piers) / SLAB / CRAWLSPACE/BASEMENT (finished /un-)				.169			
SUPERSTRUCTURE FRAMING (Wood/Masonry)				.185			
ROOF (metal / shingles)				.039			
INSULATION & WEATHERSTRIPPING				.032			
EXTERIOR FINISH siding & trim				.062			
INTERIOR FINISH drywall, paneling trim size & # of CLOSETS				.130			
DOORS / WINDOWS /SHUTTERS size/type				.041			
CABINETS/ COUNTERTOPS				.052			
HARDWARE				.012			
FLOOR STRUCTURE				.032			
FLOOR COVER				.045			
PLUMBING enter # fixtures & # damaged: <small>wash basin, laundry, shower, toilet, tub sink (add 1 for every 1 rough out)</small>				.080			
ELECTRICAL # outlets / fixtures				.054			
HVAC				.042			
BUILT-IN APPLIANCES <i>(list)</i>				.025			
Dishwasher						INSPECTED BY: <i>(name / title)</i>	
Rangehood							
Disposal							
		Column Totals:					
				Total %			
				Damage:			
<i>Notes:</i>							
* These entries only refer to flood-related damage							
Posted (Y / N) as:				INITIAL FIRM DATE		BFE	LOWEST FLOOR
UNSAFE	LIMITED ENTRY	HABITABLE	SAFE	/ /		'MSL	'MSL
<i>Rev 04/27/05.</i>							



PERCENT DAMAGE FIELD ESTIMATE INSTRUCTIONS (FOR NON-FLOOD-RELATED DAMAGES)



The *PERCENT OF DAMAGE FIELD ESTIMATE* worksheet captures essential information to make Substantial Damage (SD) determinations. For damage caused by **flooding**, use of the *Depth Damage Field Estimate* worksheet. This worksheet also includes information necessary if a community chooses to use FEMA's *Residential Substantial Damage Estimator (RSDE)*. The worksheet uses RSDE-compatible quality categories similar to those in the *Marshall Swift Residential Cost Handbook*. It is intended that the worksheet should be mostly self-explanatory. The following are a few comments and clarifications that will assist you when filling out the worksheet.

- Jurisdiction:** Since a property's mailing address (e.g., *Post Office Community*) is not always the same as jurisdiction, enter the correct information for each structure.
- SOURCE OF DAMAGE** indicates whether the damage was the result of flood, fire, wind, *etc.* or a combination of sources.
- DURATION FLOODING*** & **DEPTH*** apply only to flood-related damage. Enter N/A if not.
- DATE OF INITIAL FIRM** refers to the community's Flood Insurance Rate Map (FIRM). The initial date (found just above the north arrow on most FIRMs) indicates when the flood area was first identified by FEMA. The SD determination process *does not apply* to structures built after this initial date. Check with the local floodplain administrator.
- FIRM PANEL:** Some communities have multiple panels. The panel number is found below the title.
- ELEMENTS:** Circle applicable details in 1st column.
- Qual:** Estimate of the structure's pre-flood quality: using the letter as follows: (*Low (L), Fair (F), Average (A), Good (G), Very Good (VG), or Excellent (E)*). Some indicators have been included on the table below to assist you with these pre-flood quality categories. Manufactured Home indicators are in parentheses.

ELEMENTS	Low (L) - \$	Fair (F) - \$	Average (A) \$	Good (G) - \$	V-Good (V-G) - \$	Excellent (E) - \$\$\$
FOUNDATIONS	(MH pane)	continuous concrete perimeter	under interior bearing wall	reinforced		
BASEMENT	6" walls, floor drain, open stairs, electrified	poured / block	floor drains	flooring	stairwell	
SUPERSTRUCTURE	prefab (MH it steel)	Min VA / FHA (MH steel steel)	stucco/bricks		wood (MH heavy steel)	heavy wood (MH 2" x 4" studs)
ROOF	prefab -4:12 slope (MH steel)	< 5 plywd sheathing rafters lt wt shingles	rafters ext grade plywd med wt shingle	roof lugs, cedar shingles (MH shingle)	rafters & sheathing, heavy wood chole	heavy components, slate or clay tile
INSULATION & WEATHERSTRIPPING	(MH floor, wall & ceiling)					
EXTERIOR FINISH	< to no trim (MH aluminum)		ornamental trim		custom	select brick, cut-stone, etc.
INTERIOR FINISH	± 8' height - closets (MH 7' 4" hgt, hardwood)	enamel paint		wallpaper, paneling, hd vaulted ceiling, wd-trim	walk-in, linen & storage closets	10' or vaulted ceilings, hard wood paneling, molding, raised panel
DOORS / WINDOWS /SHUTTERS	< # hollow-core = detail	single sash	aluminum/wood sash	quality sash	high quality sash, solid doors	
CABINETS/COUNTERTOPS	plastic	stock, = splash	laminated	wood, veneer, laminated-marble	custom	
HARDWARE					attractive	
FLOOR STRUCTURE	slab / wood structure & subfloor (MH particle)	wood structure & subfloor 1" & up		steel joists		
FLOOR COVER	carpet, asphalt, vinyl, etc.		hardwood, tile		hardwood, ceramic	
PLUMBING [# of fixtures]	5	6	8	11	14	17
ELECTRICAL	< #		lt fixture kitchen / bath	fixtures in kitchen/bath	hi-quality	
HVAC	forced air	forced air - ducts			insulated ducts	multi-controls

- %:** Enter percent of damage for each element from the specific event that triggered the SD-process. If no damage occurred, enter 0%. If the structure does not have a particular element, enter N/A and deduct the **Wt.** value from the **Wt.** column total. Percentage of damage should be in simple broad terms (10%, 25%, or 100% *etc.*) rather than (11 %, 38% *etc.*).
- @:** Multiply each % value by the corresponding **Wt** value.
- Multiply the total of the **Wt.** column by the total of the **@** column to determine **Total % Damage**. If all elements are present, total **Wt.** equals 1 and the total **@** equals **Total % Damage**. Deduct the **Wt** value for any element not present at the time of the specific event that triggered the SD-process. (*i.e.*, if a structure has all elements except built-in appliances (with a **Wt.** of .025), the **Wt.** column total is reduced to .975).



NEWS RELEASE



FOR IMMEDIATE RELEASE

_____ *date*

PERMIT REQUIREMENTS FOR REPAIR OF FLOOD-DAMAGED STRUCTURES

Unusually heavy rainfall in _____ *community / region* in/on _____ *date* resulted in serious damage to many homes and businesses. _____ *local official/agency* urges owners of structures damaged by flooding to be aware of the following information.

_____ *community* participates in the National Flood Insurance Program (NFIP). All NFIP-participating communities have adopted locally enforced flood damage reduction regulations. These regulations contain standards for ***new***, ***substantially damaged***, and/or ***substantially improved*** structures in identified Special Flood Hazard Areas (100-year floodplains). The 100-year or regulatory flood has a one percent probability of occurring in any given year.

A substantially damaged structure is one that has damage equal to or exceeding 50 percent of the pre-damaged market value. Substantially improved structures include those with repairs, alterations or additions that are equal to or exceeding 50 percent of the market value of the structure before any improvements.

_____ *community* regulations, which reflect minimum federal criteria for flood damage prevention, require that development permits be obtained before any activities occur in the Special Flood Hazard Area. If your residence or commercial structure has been affected by the recent flooding and you are going to make repairs, please contact your local floodplain manager, _____ *local floodplain manager*, at _____ *phone and/or address* for a permit application and information on any standards that apply.

To determine if your structure is in a Special Flood Hazard Area review a copy of the community *Flood Insurance Rate Map* _____ *map number* located at _____ *office address/location* or download a free flood map for your area from the Map Service Center page at www.fema.gov/.

If you have additional questions contact _____ *local floodplain manager and agency* at _____ *phone, email, address*

Sample 3



DISASTER RECOVERY INFORMATION

Subject: Repair and Replacement of Structures Damaged by Flooding

PERMIT REQUIREMENTS FOR REPAIR OF FLOOD-DAMAGED STRUCTURES

The President has declared a major disaster for _____*area*_____ as a result of unusually heavy rainfall occurring between _____*date* to *date*_____. The flooding has resulted in serious damage to many homes and businesses. _____*community*_____ *local floodplain manager* urges owners of structures damaged by the flooding to be aware of the following information.

_____*community*_____ participates in the National Flood Insurance Program (NFIP). All NFIP- participating communities adopted locally enforced flood protection regulations. These regulations contain standards for new and substantially damaged structures that are in identified Special Flood Hazard Areas (SFHAs). Maps of the identified SFHAs are available from _____*local floodplain manager*_____ or online at www.fema.gov/, and may be in temporary Disaster Recovery Centers.

A substantially damaged structure is one that has damage equal to or exceeding 50 percent of the pre-damaged market value. _____*community*_____ regulations require protection of any new, or repair of substantially damaged structures to the minimum federal criteria of the 100-year flood elevation. Development permits for structures in the SFHAs must be obtained BEFORE any activities. If your residence or commercial structure has been affected by the recent flooding and you are going to make repairs, **please contact your local floodplain manager**, _____*local floodplain manager*_____, at _____*phone, email, and address*_____.

Note: To obtain the contact information for any Floodplain Manager for Ohio's NFIP-participating communities, please go online at: <http://www.dnr.state.oh.us/water/floodpln/communitylist.pdf> or call ODNR's Floodplain Management Program office at (614) 265-6750.

Sample 4



COST ESTIMATE LETTER

_____ *community* _____

To: _____ *community* _____ **Residents**

Date: _____ *date* _____

Due to the recent flood, the _____ *community* _____ must now begin the task of evaluating the damage of all structures that were affected by the flood waters. The _____ *community* _____'s Flood Hazard Reduction Regulations, (_____ *date adopted* _____) require that all structures that received damage in excess of 50% of the value of the structure must now conform with all applicable regulations.

In an effort to begin this assessment, the _____ *community* _____ is requesting each property owner to obtain an accurate value of your structure along with a certified cost estimate needed for the repairs from a qualified independent contractor. The value of your structure is generally determined by one of three methods: **1) A Certified Appraisal, 2) Insurance Policies or 3) County Tax Values** (available by calling _____ *community office* _____). The estimated cost of improvements should be based upon the needed repairs to ceilings, floors, or other structural parts of the building, whether or not the alteration affects the external dimensions of the structure.

Please submit this information to the _____ *local floodplain manager* _____ *street* _____ *community* _____, Ohio _____ *zip* _____ within thirty (30) days after the date of this letter. If you have any questions, please do not hesitate to call _____ *local floodplain manager* _____ at *telephone* _____.

NAME: _____

ADDRESS: _____

ESTIMATED STRUCTURE VALUE: _____

Attach copy of the documentation used to determine this value

ESTIMATED COST OF IMPROVEMENTS: _____

Attach copy of a certified contractor's estimate

Sample 5



FLOOD DAMAGE FIELD ESTIMATE NOTICE

PERMIT REQUIRED BEFORE REPAIR OF FLOOD-DAMAGED STRUCTURES

All damaged structures in the floodplains of _____ *community* _____ are required to obtain a floodplain development permit BEFORE beginning any activities, including repairs. _____ *community* _____'s Flood Protection Regulations (# _____) contain standards for new and substantially damaged structures in identified Special Flood Hazard Areas (SFHA)s. Maps of these SFHAs are available from _____ *local floodplain manager* _____ and also may be viewed online on the Map Service Center page at www.fema.gov/.

A Field Estimate of the structure at _____ *address of inspected structure* _____ indicates that this structure is / is not *[select one]* **Substantially Damaged**

Date _____ Time: _____ Inspector: _____

A substantially damaged structure is one that has damage equal to or exceeding 50% of the structure's pre-damaged market value. _____ *community* _____'s regulations require all new or substantially damaged structures to be elevated to the minimum flood protection elevation. Development permits for structures in the SFHAs must be obtained BEFORE beginning repairs.

If you believe that this determination is incorrect, you may provide additional information for the floodplain manager's consideration.

To obtain a permit application, discuss flood safety standards and methods, or provide additional information, **please contact** _____ *community* _____'s **floodplain manager**, _____ *local floodplain manager* _____, **at** _____ *phone and / or address* _____ or visit our website at _____ *website address* _____.

PERMIT REQUIRED

SAMPLE 6



NOTIFICATION TO PROPERTY OWNER

Floodplain Manager's Name, Title
Address
Community Name, Ohio Zip Code

Date

Property Owner
Address
Community Name, Ohio Zip Code

Dear Property Owner:

community participates in the National Flood Insurance Program (NFIP). All communities that participate in the NFIP have adopted locally enforced flood damage reduction regulations. These regulations contain standards for new, substantially damaged and/or substantially improved structures in identified Special Flood Hazard Areas (100-year floodplains). In accordance with these regulations, community conducted substantial damage determinations for all structures built in the Special Flood Hazard Area prior to community initial Flood Insurance Rate Map. **Based on this inspection, your property has been substantially damaged by the Flood?, Wind?, Fire? event that occurred on date of event.**

A substantially damaged structure is one that has damage that equals or exceeds 50 percent of the market value of the structure. **To maintain our community's participation status in the NFIP, and ensure that your future flood risk is reduced, your structure must be brought into compliance with local flood damage reduction regulations.** Please contact local floodplain manager to discuss options for bringing the structure into compliance and to obtain a local flood hazard area permit for this work. If you choose to contest this determination, please provide a contractor's estimate of all repairs and improvements, and/or a recent appraisal of the market value of your structure.

There are several funding sources available to help pay for the cost of bringing your structure into compliance. If you have a flood insurance policy, your structure may be eligible for Increased Cost of Compliance (ICC) funds. ICC provides up to \$30,000 to relocate, elevate, demolish or dry-floodproof structures that must comply with local flood damage reduction regulations. If the event that damaged your structure results in a Presidential disaster declaration, Hazard Mitigation Grant Program (HMGP) funds become available to mitigate flood-prone structures. Please contact this office for additional details on possible funding sources including: Flood Mitigation Assistance (FMA), Pre-Disaster Mitigation (PDM), Repetitive Flood Claims (RFC) and the Severe Repetitive Loss Pilot Program.

Failure to bring this structure into compliance is a violation of local flood damage reduction regulations. Section Violation and Penalties Section # of local floodplain regulations contains possible ramifications for failure to comply. Failure to comply will also result in much higher flood insurance premiums for you and/or future owners of the property.

Please contact local floodplain manager at phone and email to discuss this matter further. Thank you for your cooperation during this difficult recovery period.

Sincerely,

Local Floodplain Manager, Title

Sample 7



REQUEST FOR OBOA INSPECTORS

_____ *date* _____

RE: ESF-14 Mission Request: Substantial Damage Determination Assistance

Dear County Emergency Management Director:

The _____ *community* _____ was impacted by severe weather and flooding that affected _____ *community or region of Ohio* _____, Ohio beginning _____ *date of disaster event* _____. As a participant in the National Flood Insurance Program our community has committed to determine if structures in the identified flood hazard areas are *substantially damaged* and to enforce specific flood protection standards in the repair and recovery process. As a result of this flood disaster our local ability to provide inspections and make the substantial damage determinations has been exceeded. Please consider this letter our formal request for assistance from the Ohio Building Officials Association (OBOA) in performing substantial damage determinations.

Our preliminary information indicates that _____ *number* _____ structures located in identified floodplains will need inspection. The structures are in _____ *general location information* _____. Our local floodplain manager (*or community designee*) will serve as the point of contact for the Ohio Building Officials Association inspectors:

Name: _____
Address: _____
Phone (Office): _____ (Cell) _____
Email: _____

The OBOA inspectors are providing this service and support in the spirit of mutual aid. The expenses for lodging, fuel, and meals are not reimbursable through the FEMA Public Assistance Program should a Presidential Disaster Declaration be received. To support the inspectors, OBOA needs the following commitments from the requesting community.

1. Lodging arrangement for inspectors.
2. Available fuel for vehicles used to support the inspection determinations.
3. Reimbursement to inspectors for meals during the time they provide support.
4. Assurance that if the requesting community gets reimbursed for other expenses, such as vehicle expenses and labor and benefit expenses, the responding inspector's community will be reimbursed for those expenses.

Upon commitment, the requesting community should forward this letter with the information required to your count emergency management agency.

Signed:

Community Chief Executive Officer

Sample 8