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What to do After a Flood: The First Steps Toward a Resilient Community

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French & Associates Ltd.

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Building Disaster Resilient Communities

What to do After the Flood: The First Steps Toward a Resilient Community

French Wetmore, CFM
French & Associates, Ltd.
Steilacoom, Washington



Building Disaster Resilient Communities

The First Steps

1. The setting
2. Six first steps
3. Exercise



What to do After the Flood: The First Steps Toward a Resilient Community

Step 1. Don't let people return to normal





Building Disaster Resilient Communities



Where do you fit in?

- ✓ As a community official
- ✓ As a resident and voter
- ✓ As a facility operator
- ✓ As a major employer
- ✓ As a source of assistance



Building Disaster Resilient Communities

What works for a community

- ✓ Also works for a region
- ✓ Or a neighborhood
- ✓ Or a facility





The Setting

People are:
✓ Shocked





The Setting

People are:

- ✓ Shocked
- ✓ Weakened





The Setting

People are:

- ✓ Shocked
- ✓ Weakened
- ✓ Short on money





The Setting

People are:

- ✓ Shocked
- ✓ Weakened
- ✓ Short on money
- ✓ Prone to blame their government





The Setting

People are:

- ✓ Shocked
- ✓ Weakened
- ✓ Short on money
- ✓ Prone to blame their government
- ✓ Want to get back to normal





The First Steps

Step 1. Don't let people return to normal

- ✓ “Normal” means continued exposure to the same hazard
- ✓ Nobody wants to do it again
- ✓ Seize the opportunity for a new message: “Build back better” or “Don't build back at all”





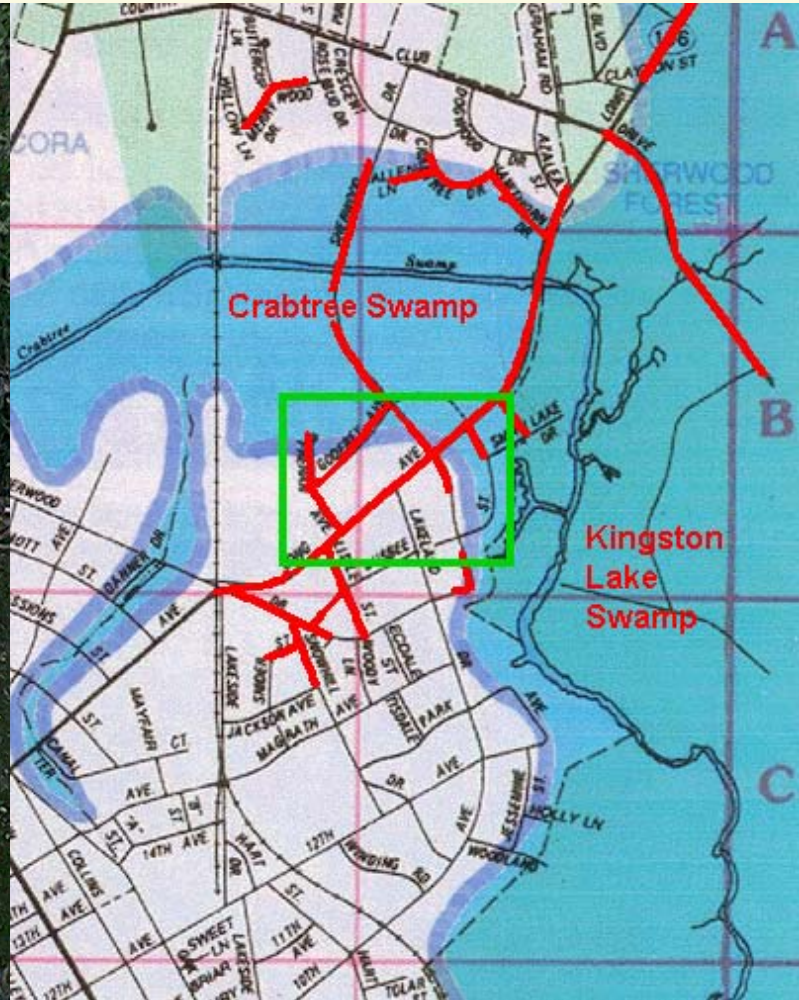
The First Steps

Step 1. Don't let people return to normal

- ✓ Get leadership support
- ✓ Make a public statement
- ✓ Show a plan of action
- ✓ Provide clear instructions
- ✓ Back up with staff actions

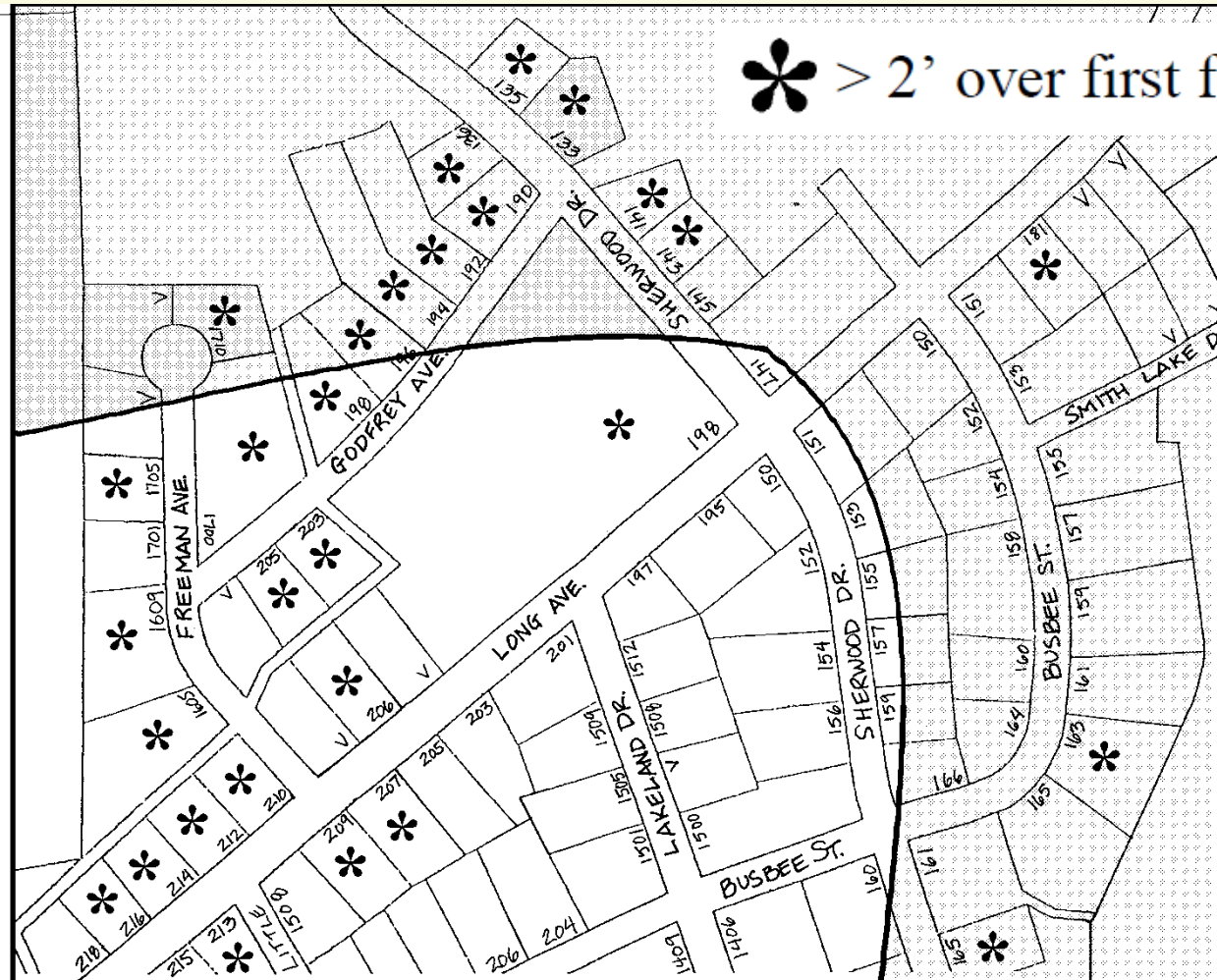


The First Steps – Conway





The First Steps – Conway



✿ > 2' over first floor



The First Steps – Conway

City resolution – water still up

1. Keep City in good standing in NFIP
2. No reconstruction or reoccupation until inspected and permitted
3. Develop a mitigation plan
4. Inform residents and help them with flood protection and financial assistance



The First Steps – Conway

Public meeting – 5 days after resolution

- ✓ Legal requirements
 - FEMA – NFIP
 - City ordinance
 - Law of nature
- ✓ Redevelopment alternatives
- ✓ *Repairing Flooded Buildings* handout
- ✓ Planning approach
- ✓ What happens next
- ✓ Questions and answers



The First Steps – Conway

City of Conway

Repairing Flooded Buildings

1. Before you go back to your building, read “Flood Safety” on the back cover of *Repairing Your Flooded Home*. See also Steps 1 and 2 in that book. You may not want to go into your building until the City’s inspector is with you.
2. What you have to do to repair a flooded building depends on how high the water got:
 - 2.1. A building that was *flooded in the crawlspace only*, will need to have the following repairs made:
 1. If water got in the furnace, air conditioner, electrical box or outlets and/or water heater, they must either be replaced or cleaned and certified by a professional, licensed by the State and the City.
 2. All flooded ductwork must be disassembled and discarded.
 3. Hose out the crawlspace. Clean all exposed surfaces with a disinfectant (see Step 6 of



The First Steps

Step 2. Organize

- ✓ Planning committee
 - Staff membership
 - Public membership
 - Political support
- ✓ Clear scope of work
- ✓ Lots of public information



The First Steps – Conway

Step 2. Organize

- ✓ Planning committee
 - Staff membership – 5 city employees
 - Public membership – 4 flooded residents
 - Political support – 2 council members/residents
- ✓ Clear scope of work – Report in 2 weeks
- ✓ Lots of public information
 - Meetings open to the public
 - Several public meetings
 - Handouts



The First Steps

Step 3. Assess the situation

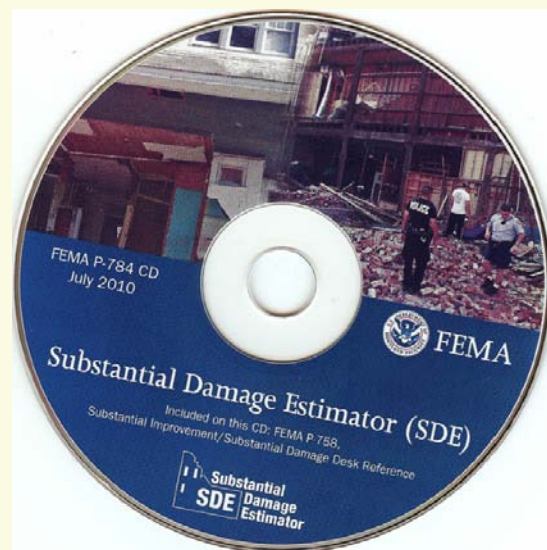




The First Steps

Step 3. Assess the situation

- ✓ Emergency manager's damage assessment
- ✓ Assess building conditions
 - Substantial damage estimator





The First Steps

Two types of buildings



“Goner”



“Soaker”



The First Steps

Step 3. Assess the situation

- ✓ Emergency manager's damage assessment
- ✓ Assess building conditions – Triage
 1. Goners
 2. Soakers – OK to repair/reoccupy
 3. Soakers – Potentially substantially damaged
- ✓ Assess owner interests
- ✓ Plot/summarize the results



The First Steps – Conway

Step 3. Assess the situation

- ✓ Emergency manager's damage assessment
- ✓ Assess building conditions
 - Officially adopted Sub Damage Estimator
 - Help from other building departments
 - All buildings evaluated in 5 days
 - 4 page report printout for each building
- ✓ Assess owner interests



The First Steps – Conway

Questionnaire

	<u>Yes</u>	<u>No</u>
Restore to pre-flood condition	32	8
Restore with mitigation	29	7
Rebuild and elevate	18	9
Replace with new building	11	13
Relocate building	7	18
Sell and move	38	6



The First Steps – Conway

Step 3. Assess the situation

- ✓ Emergency manager's damage assessment
- ✓ Assess building conditions
 - Officially adopted Sub Damage Estimator
 - Help from other building departments
 - All buildings evaluated in 5 days
 - 4 page report printout
- ✓ Assess owner interests
- ✓ Plot/summarize the results

Substantially Damaged Buildings

FIRM Zone	External Depth	Internal Depth	Percent Damaged	Flood Insurance	Flooded Before?	Want to Sell?
X	4.00	3.00	123.37%	n	y	y
X	3.50	1.75	120.45%	n	n	y
AE	3.50	2.50	118.48%	n	n	y
AE	3.75	3.75	98.06%	y	y	y
AE	4.00	0.25	93.03%	n	y	y
AE	1.50	0.75	92.30%	y	n	y
AE	5.75	1.25	90.96%	y	y	y
X	2.50	0.75	86.75%	n	n	y
AE	3.25	1.75	81.72%	n	y	y
AE	4.25	3.25	80.12%	y	y	y
AE	4.50	1.75	77.83%	y	n	y
AE	4.25	1.75	75.74%	y	y	y
X	4.00	2.00	70.12%			
X	3.50	0.50	66.39%	n	n	y
X	3.00	0.50	66.24%			
AE	4.25	2.00	65.23%			
X	2.00	2.00	59.55%	n	n	y
AE	3.50	0.75	51.44%	n	n	y
X	2.50	0.50	50.81%	n	n	y



The First Steps

Step 4. Review the alternatives

✓ Flood control

\$





The First Steps

Step 4. Review the alternatives

- ✓ Flood control
- ✓ Clearance





The First Steps

Step 4. Review the alternatives

- ✓ Flood control
- ✓ Clearance
- ✓ Protect in place





The First Steps

Step 4. Review the alternatives

- ✓ Flood control
- ✓ Clearance
- ✓ Protect in place
- ✓ Funding
- ✓ Decide on best approach(es)



Hazard Mitigation Assistance Unified Guidance

Hazard Mitigation Grant Program, Pre-Disaster Mitigation Program,
Flood Mitigation Assistance Program, Repetitive Flood Claims
Program, Severe Repetitive Loss Program

June 1, 2010



Federal Emergency Management Agency
Department of Homeland Security
500 C Street, S.W.
Washington, DC 20472



The First Steps – Conway

Step 4. Review the alternatives

1. Restore to pre-flood condition
2. Restore with mitigation
3. Repair and elevate
4. Replace with new elevated building
5. Relocate building to another property
6. Sell and move





The First Steps

Step 5. Explain the findings

- ✓ Written plan/report
- ✓ Who should rebuild and who should not
- ✓ Recommended mitigation measures
- ✓ Public meeting
- ✓ Clear instructions to property owners



The First Steps – Conway

Step 5. Explain the findings

- ✓ Written plan
- Within 2 weeks of Council resolution

Flood Hazard Mitigation Plan

Interim Report



Flood Advisory Sign

The 1999 flood was approximately 4½ feet deep at this location.

City of Conway, South Carolina

October 19, 1999



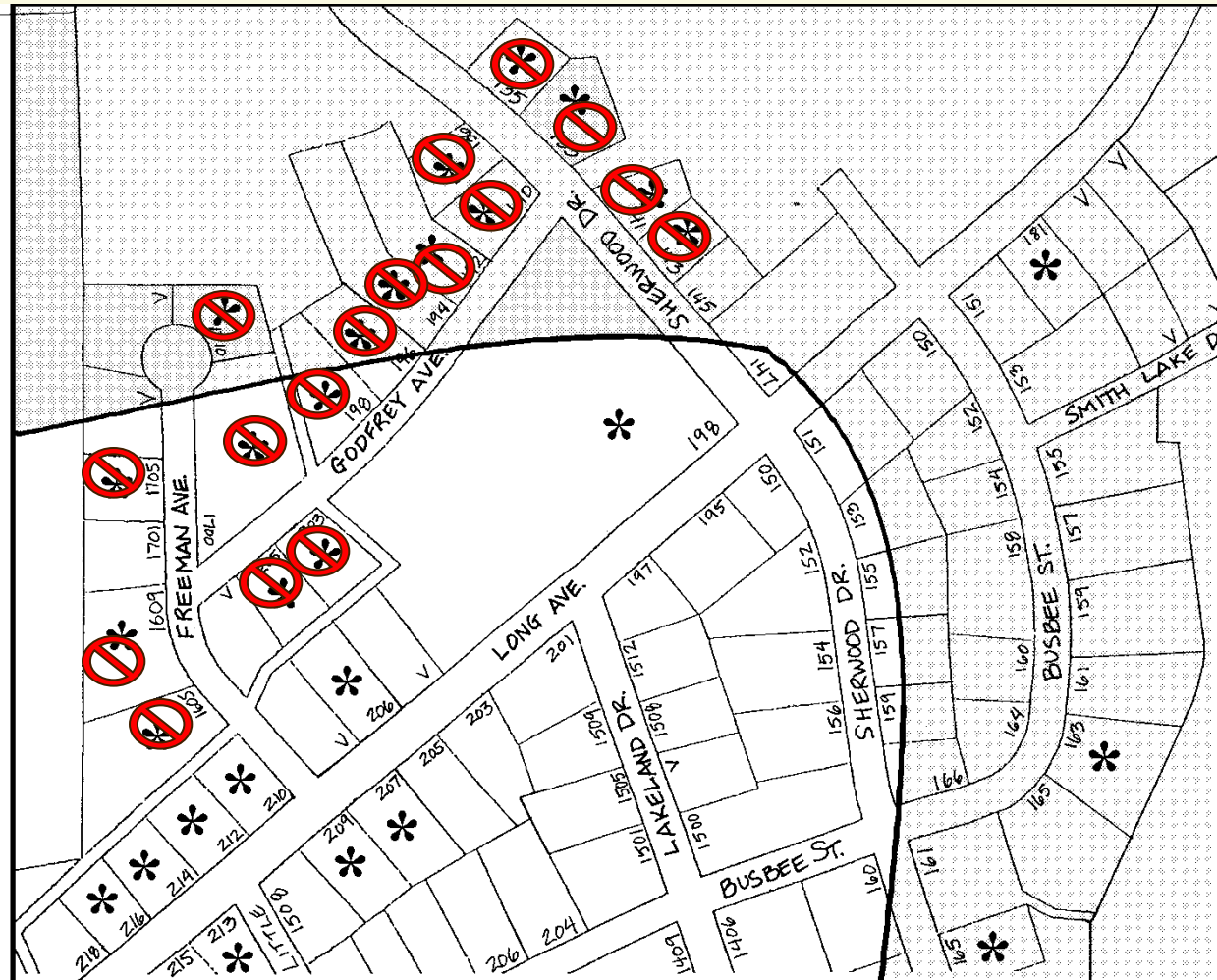
The First Steps – Conway

Step 5. Explain the findings

- ✓ Written plan
- ✓ Who should rebuild and who should not



The First Steps – Conway





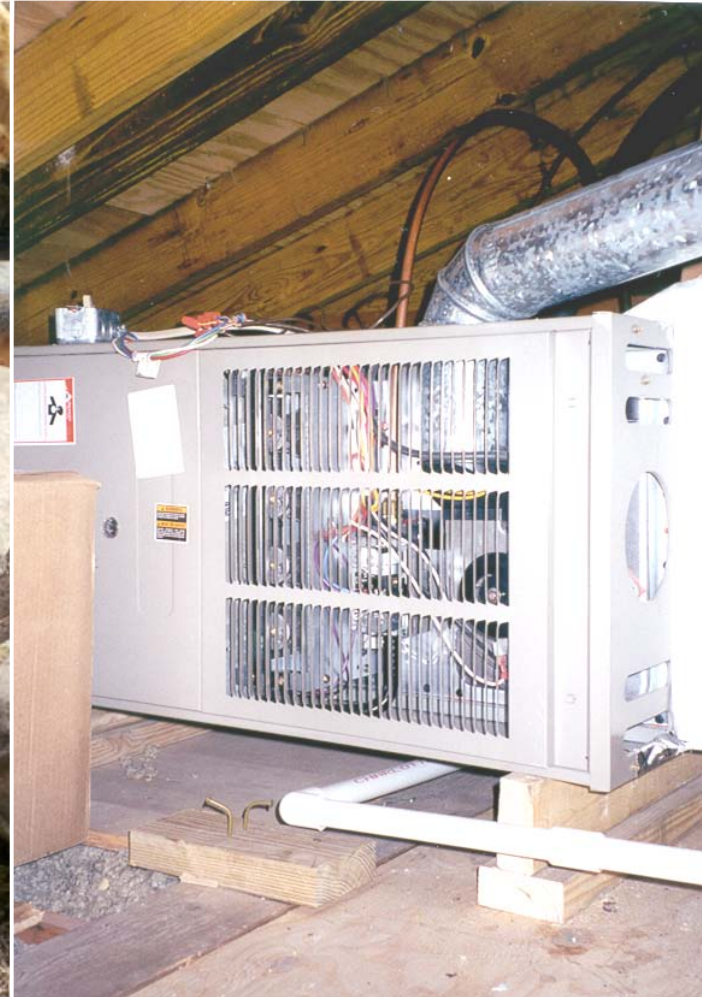
The First Steps – Conway

Step 5. Explain the findings

- ✓ Written plan
- ✓ Who should rebuild and who should not
- ✓ Recommended mitigation measures



The First Steps – Conway





The First Steps – Conway

Step 5. Explain the findings

- ✓ Written plan
- ✓ Who should rebuild
- ✓ Recommended mi
- ✓ Public meeting
Within 2 weeks
of Council
resolution

Public Meeting Agenda

- ✓ Overview of the planning effort
- ✓ Building inspection procedures
- ✓ Mitigation plan recommendations
- ✓ *Advice to Flooded Property Owners*
- ✓ Questions and answers
- ✓ Inspection reports handed out
- ✓ Meeting with owners



The First Steps

Step 6. Plan for the Long Term

- ✓ Clean slate in most hazardous area
- ✓ Receptive public mindset
- ✓ Continue planning committee
- ✓ Review long term alternatives
 - Redevelopment plans
 - Codes, ordinances and standards
 - Education, public information
 - Resident preparedness
- ✓ Develop a resiliency attitude



The First Steps – Conway

Step 6. Plan for the I

- ✓ Full mitigation plan
- ✓ 21 action items
 - Remap floodplain
 - Redevelopment
 - Codes, ordinances
 - Public information
 - Preparedness



City of Conway
South Carolina

Flood Hazard Mitigation Plan



December 1, 1999

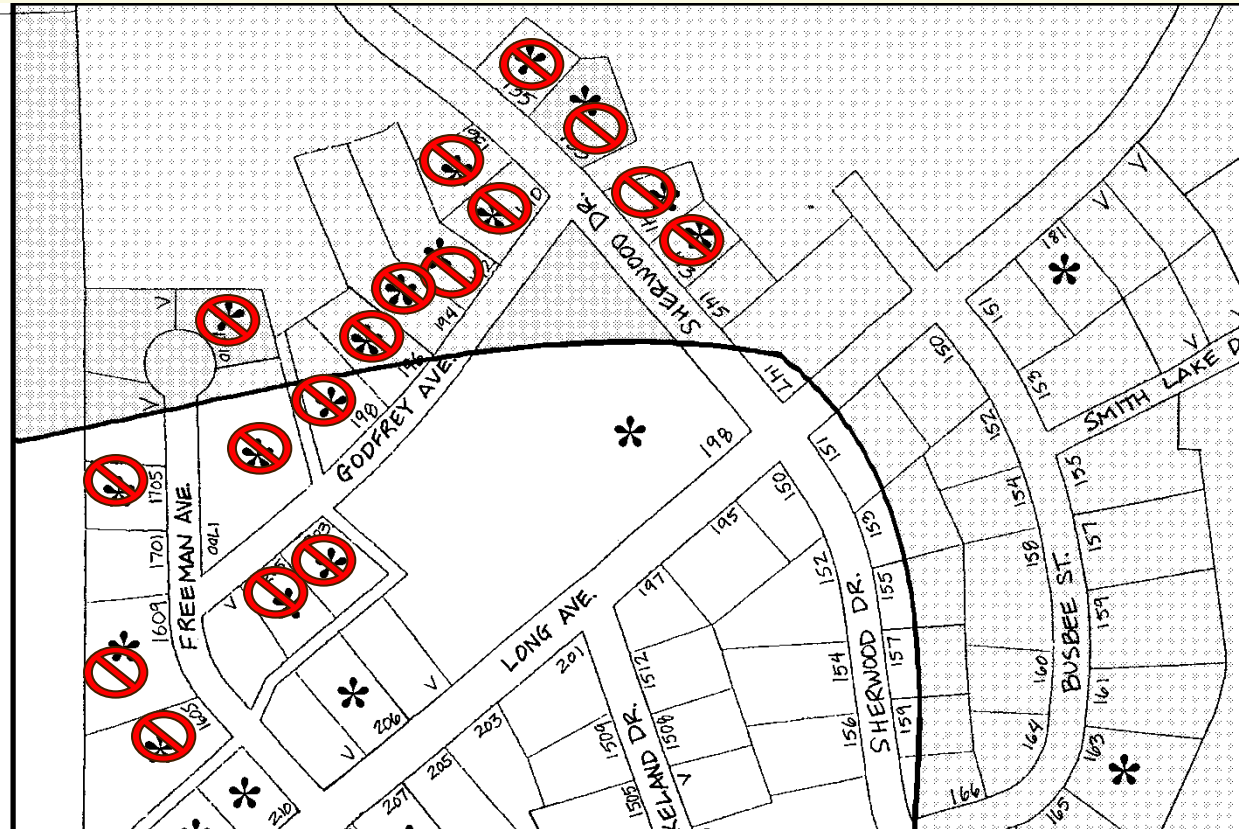
French & Associates, Ltd.
Park Forest, Illinois

DRAFT





The First Steps – Conway



Action item 10. Apply for funding to acquire the substantially damaged buildings



The First Steps





The First Steps – Conway



Action item 11. Prepare an open space/greenway concept plan for the vacant areas



The First Steps

The First Steps Toward a Resilient Community

Step 1. Don't let people return to normal

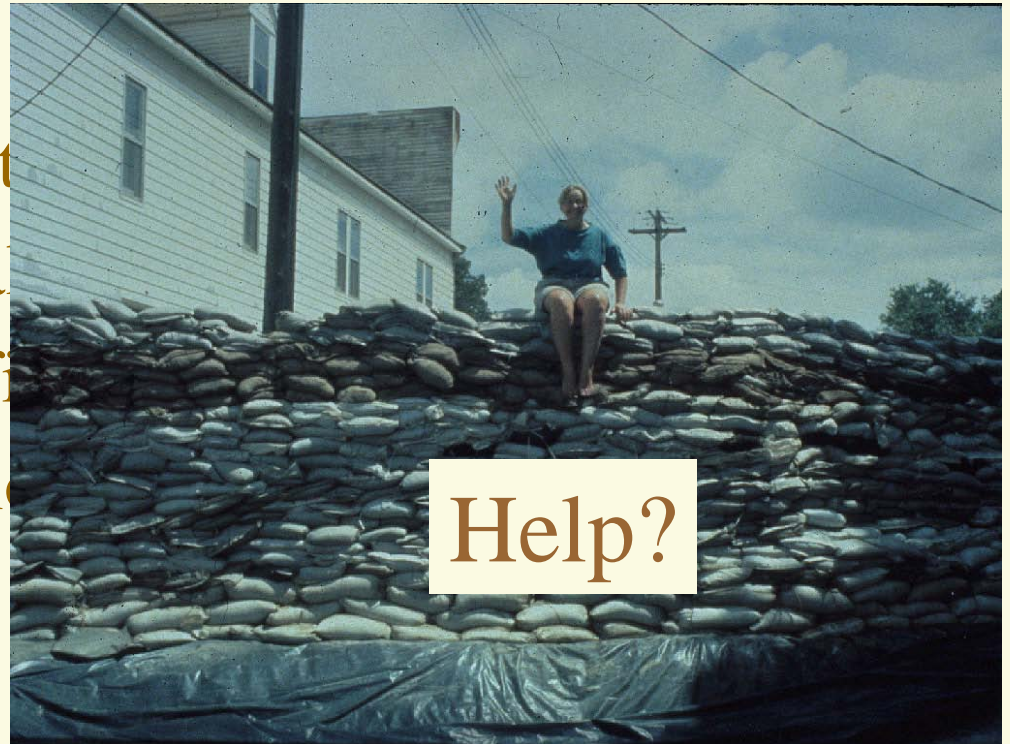
Step 2. Organize

Step 3. Assess the situation

Step 4. Review the assessment

Step 5. Explain the findings

Step 6. Plan for the future





The First Steps

Help – Agencies

GOHSEP

- ✓ Mitigation planning
- ✓ Mitigation funding

La DOTD

- ✓ Floodplain Management

FEMA

- ✓ National Flood Insurance Program
- ✓ Community Rating System





The First Steps

Help – Organizations

- ✓ Association of State Floodplain Managers
 - ✓ No Adverse Impact



- ✓ Natural Hazards Mitigation Association
 - ✓ Patchwork Quilt



- ✓ American Planning Association



Red Stick Parish Flood



1



Red Stick Parish Flood





Red Stick Parish Flood



3



Red Stick Parish Flood



3



Red Stick Parish Flood



4



Red Stick Parish Flood



4



Red Stick Parish Flood





Red Stick Parish Flood



5



Red Stick Parish Flood



5



Red Stick Parish Flood

5





Red Stick Parish Flood



6



Red Stick Parish Flood



6



Red Stick Parish Flood





Red Stick Parish Flood



7



Red Stick Parish Flood





Red Stick Parish Flood





Red Stick Parish Flood

10





Red Stick Parish Flood

10





Red Stick Parish Flood



11



Red Stick Parish Flood





Red Stick Parish Flood



12



Red Stick Parish Flood

Assignment:

1. What do you recommend?
2. How can your office help?

