

DAC Mitigation Tables

The 1987 Illinois Experience

by

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Introduction

Floods recur in the same places. Disaster assistance funds are often spent to repair or rebuild properties that will be damaged again in a few years. One of the most depressing aspects of this cycle is that in many cases repetitive damages can be prevented with some relatively inexpensive mitigation measures, especially where flood depths and velocities are low.

This paper reviews an experiment with a new method of advising and encouraging flood victims to undertake mitigation measures: staffing special mitigation-assistance tables in the Disaster Application Centers (DACs). The Illinois Division of Water Resources (DWR) tried this approach after floods in 1982, 1985, 1986, and 1987. After the last two floods, DWR contracted with Dr. Shirley Laska of the University of New Orleans to survey flood victims to discern whether they undertook any mitigation action, and if so, what encouraged them to do it, and if not, what still stands in their way.

Dr. Laska's findings are reported in ASFPM Technical Report 4. This report describes the project from the perspective of the administering agency. It covers the background of the project, the procedures followed, lessons learned, and recommendations that FEMA implement this approach at the national level.

Background

A state may request federal disaster assistance after a flood or other disaster if the level of damages and cost of reconstruction are beyond the state's capabilities. The federal response is coordinated by the Federal Emergency Management Agency (FEMA). A federal-state-local team conducts a preliminary damage assessment to estimate the severity of damages and to help determine what types of assistance are needed. If the disaster is severe enough, the area may receive a Presidential disaster declaration. When there is a Presidential declaration, FEMA and the state establish a disaster field office (DFO) as a command and control center for the disaster assistance effort.

At the DACs individuals and businesses can learn about and apply for the various state and federal disaster assistance and counseling programs. One or more DACs may be established and publicized; they are usually located in schools or other large community buildings. A disaster victim is greeted by a registrar, who explains the system and directs the person to one or more tables. The tables are usually staffed with FEMA "reservists," people trained in the programs who are called to duty after a disaster declaration.

Illinois has had many experiences with floods and Presidential disaster declarations over the last 10 years. In 1979 substantial portions of the state were flooded and declared. During this event DWR published the first version of *Protect Your Home from Flood Damage*, a handbook for property owners that covers floodproofing, flood insurance, cleanup, and other flood prevention and response activities a homeowner can take. This manual has been revised several times and has been distributed extensively throughout the

country. In 1987, DWR published a complementary manual, *Flooded Basements: A Homeowner's Guide*.¹

Beginning with the disaster declaration for the southern Chicago suburbs in the summer of 1981, DWR undertook a more active post-flood hazard-mitigation program. It became very clear that the post-flood period offered a tremendous opportunity to initiate mitigation measures and redevelop a flood-prone area with flood protection in mind. After a flood, residents and local officials are more interested in flooding; where damage is severe enough, redeveloping the area in a way consistent with good floodplain management can be relatively easy; and special sources of financial assistance exist to help pay for proper redevelopment of areas that receive a federal disaster declaration.

The state's responses revealed that DWR would have to provide technical and financial assistance as quickly as possible to encourage communities and property owners to take mitigation measures. An interagency agreement was therefore executed between the DWR and the Illinois Emergency Services and Disaster Agency. The agreement and the post-flood strategy are covered in the manual *State Flood Response and Recovery Activities*.

The 1982 Flood

In December 1982 flooding in downstate Illinois resulted in a Presidential disaster declaration. DACs were open for a relatively short period so that applications could be completed before the Christmas holidays. DWR was able to put one person in most of the DACs while they were open. This person was located with (and provided assistance to) the map readers' table. At the map readers' table, reservists locate the disaster victim's property on a flood insurance rate map to determine if flood insurance should be required as a condition of disaster assistance.

After the map readers finished with an applicant, the DWR mitigation staff provided advice on acquisition, relocation, and elevation of buildings. These three property-protection measures were appropriate for the deeper flooding in the affected areas, and financial assistance was easiest to obtain for these measures. Some mitigation activities were undertaken. However, there was no follow-up effort with those who were assisted, and the effectiveness of this work was never evaluated.

The 1985 Flood

Following the floods of spring 1985, DWR again attempted to place mitigation staff in the DACs. But because of the number of DACs and other work conflicts, the people staffing the tables had no mitigation experience or knowledge of disaster assistance programs. They were able to do little more than hand out manuals and identify potential sites for acquisition under FEMA's Purchase of Flood Damaged Property Program (Section 1362).

¹All publications mentioned in this report are available from the Illinois Division of Water Resources, 310 South Michigan Ave., Room 1606, Chicago, IL 60466.

The 1986 Flood

The floods of October 1986 gave DWR another opportunity. Heavy rains following a prolonged wet period caught the northern and northwest Chicago suburbs by surprise. The mostly shallow and slow-moving flooding caused an estimated \$34 million in damages, \$28 million to residences and businesses. Many basements outside the mapped floodplains were affected. Worst hit were communities on the Des Plaines River, which set a record flood stage--2 feet over the 100-year flood.

DWR provided one mitigation person to each of the four DACs established. Three of these people were state employees; the fourth was an employee of the Wisconsin Department of Natural Resources brought in at state expense. The DAC mitigation tables were again located with the map readers.

Although the expertise and knowledge were there, the ability to maintain the staffing for any length of time was not. After three days the Wisconsin staff person had to return to her job, and the other three, as in 1985, had to be removed from the DACs to do other mitigation and regular office work. In the three days at the four DACs, staff members directly consulted with 377 people. These represented 24% of the 1,566 people who visited the DACs during those three days.

1987 Flood

In August 1987, flooding affected many of the same areas as the 1986 flood. Even heavier rains fell on the western and northwestern suburbs, and damages were estimated to exceed \$150 million, mostly to residences. More than two-thirds of the flooded homes had basement flooding only. Although much of the flooding was surface runoff outside the floodplains, record flood stages were set on some streams. In some areas the Des Plaines River was almost as high as it had been in 1986. A disaster declaration came quickly, and three to six DACs were operating at any one time.

Mitigation measures appropriate for the area ranged from standpipes to prevent basement sewer backup to dry floodproofing to elevation and acquisition. In three DACs over 95% of the buildings were affected only by basement flooding, most of it from subsurface water. It is estimated that 90% of the damaged buildings could have been protected with floodproofing measures costing under \$10,000 and 60% for less than \$5,000.

DAC mitigation tables were established and staffed by state employees, FEMA reservists, and consultants. The last group was financed at a cost of \$14,000 in state funds. At the end of the first 13 days of DAC operation, 5,733 of the 8,126 DAC visitors had received counseling. This represented 70% of all people entering the DACs.

1987 DAC Mitigation Table Procedures

The initial team of three state employees, four state consultants, and three FEMA reservists underwent a half-day training session on mitigation measures, financial assistance, and

mitigation table procedures. This team began work the next morning at three DACs. Eventually six DACs were open simultaneously. Table staffing varied from three in the busiest centers to one when DAC attendance died down.

Because of state funding restrictions, the use of consultants had to be phased out after a week. Beginning on the fifth day of operations, DAC registrars were cross-trained as mitigation advisors. These people were given a two-hour training session and were able to watch an experienced mitigation advisor for a few hours before they began counseling. The new staff were expected to know only a relatively narrow set of floodproofing activities and were not familiar with building permits, flood insurance, or financial assistance programs. In all, 12 more reservists were trained as mitigation advisors, and eventually most of them worked in every DAC.

A preliminary set of DAC mitigation procedures was drafted for the training session. Several changes were made to these procedures on the basis of experience. The revised version is included as Appendix A. In most cases the mitigation staff counseled all who had some form of damage to their buildings or contents. In some cases, the heavy workload required the registrars to send only volunteers or people located in mapped floodplains to the mitigation table. Sometimes, a backlog of people waiting for the mitigation table resulted in presentations to small groups instead of one-on-one counseling.

The instructions for the mitigation table staff are included as Appendix B. Dr. Laska's earlier work resulted in instructions that the advice be made as personal and as clear as possible. The objective of this was to give the clients very specific recommendations for their property. All visitors received a copy of *Flooded Basements* or *Protect Your Home* or both, depending on whether they had flooding over the first floor.

Staff members spent an average of 9-10 minutes with each person or family. Each table had a supply of "typical building construction" drawings (Appendix C). Clients were asked what kind of buildings they had, and the appropriate drawings would be selected. As a client explained what happened during the flood, the staff member would draw the source of entry and depth of water on the drawing with a blue marker. The staff member would then review the most appropriate measures, again marking up the drawing to show where they would be installed.

Clients were advised briefly of potential funding sources and of flood, sewer backup, or sump pump failure insurance. They were also given the DFO's hotline telephone number to call if they had questions or needed help getting financial assistance. Those few who did call were given follow-up calls within 24 hours.

Each DAC table maintained a mitigation table record (Appendix D). The control number of the DAC application form was recorded in the record to facilitate later follow-up surveys and recall of property owner names and addresses. A continuing record was maintained of summary data such as the total number of properties with flooding over the first floor by community. An example of this record is included as Appendix E.

At the end of the first 13 days, September 9, the control numbers were identified for approximately 250 properties that had been recommended for elevation or relocation or whose owners were interested in selling. The FEMA-state mitigation staff pulled the names and addresses of these properties from the DFO computer. They provided this information to communities to assist their mitigation planning and to help identify target areas for acquisition or relocation. Printouts of residents' names, addresses, and control numbers were provided to four requesting communities along with copies of the completed mitigation table record forms.

Lessons Learned

The appendices show basic materials that can be copied in bulk for future DAC mitigation tables. The following lessons learned are based on the experiences of those who participated in the Illinois project.

Staffing

The experience of participants in the Illinois project led to the following conclusions regarding staffing of the DAC tables:

1. The mitigation tables need to be adequately staffed to properly handle the expected workload. The average time of 10 minutes per client means that one person can help only about 50 people a day. Since 70% of the DAC visitors went to the mitigation table, a DAC should have one mitigation person for every 70 people expected. Even more mitigation people are needed to ensure adequate time to discuss financial assistance opportunities and to prevent staff burn-out.
2. Operation of the DAC tables requires one full-time team leader. This person should be in the DFO to oversee and supply the DACs. This job should not be assumed by the state or FEMA hazard-mitigation coordinator as an extra duty.
3. A mitigation table will not be appropriate for every disaster. Because of the breadth of experience needed and the infrequency of use in any one state or region, a national cadre of mitigation counselors should be trained and deployed where appropriate. No one state or FEMA region can be expected to have the personnel resources to support a trained and experienced team.

Training and Orientation

We made the following observations regarding training and orientation at the DAC tables:

1. Few of the people staffing the mitigation tables had had enough training to adequately prepare them for this job. The initial group was expected to have had enough disaster assistance and mitigation experience to make the program work. However, these people lacked training and experience in areas such as specific floodproofing techniques, working with disaster victims, understanding special disaster assistance programs, and handling the long and grueling hours of DAC work. Only through the energy, initiative, and imagination of these people did the tables start operating on the first day.
2. The most important requirement of this work is technical knowledge of mitigation activities. The major reservation concerning use of the DAC registrars was their lack of such knowledge. A five-day program of instruction should be presented annually to

properly prepare staff for this work. The following subjects should be included in the instruction:

- a. Flood hazard and floodplain management programs
 - b. Building construction techniques and building permit procedures
 - c. Acquisition and relocation programs
 - d. Floodproofing measures
 - e. Disaster assistance programs
 - f. Flood insurance
 - g. DAC procedures
 - h. Dealing with disaster victims
 - i. Advising and motivating property owners
3. Mitigation table staff, especially the out-of-staters, need a pre-DAC orientation on the local situation. Specific subjects that should be included are the flood event, types of damages, typical construction practices, area topography, political organizations, peculiarities of local building codes, and planned flood control projects. The team leader needs a detailed checklist to give to a local or state briefer to ensure that all appropriate information is covered.
 4. The more specific advice and cost estimates that can be provided, the better. The team leader and at least one assistant should be called in time to go on the preliminary damage assessment, which is conducted immediately after the state requests a federal disaster declaration. The objective of the trip would be to identify typical flood damage and building types. A lead time of several days before the DACs open is needed to check the cost and local availability of various measures such as a sump pump or standpipe in area hardware and lumber stores. Up-to-date local information should be provided at the pre-DAC orientation.

Supplies

We learned the following regarding supplies for DAC tables:

1. At least 2,000 of each of the floodproofing manuals should be on hand at all times to ensure that supplies will be adequate when the DACs are opened up. Additional supplies needed include the building drawings and blue felt-tip pens to graphically illustrate water levels on the building drawings. Access to a copying machine is very

important so that new handouts will be available and new building drawings can be made to reflect local situations.

2. All the manuals, typical building drawings, insurance handouts, record forms, and other paperwork were very difficult to manage at the small mitigation tables. Shelves and/or expandable file folders are needed for organization and quick retrieval of the papers.
3. Some relatively inexpensive protection measures exist, such as standpipes and water alarms. Examples of these things should be purchased and present at each DAC table so that clients have tangible examples of possible floodproofing measures. Posters or photographs of actual (preferably local) mitigation projects would also help and could be viewed by those waiting in line.

Record Keeping

The following improvements could be made in the registration form used at the DAC tables and use of the DFO computer:

1. The mitigation table registration form was designed primarily to provide summary data for quick identification of target communities and to keep a record of the control numbers of people assisted. The form's data would facilitate an expected survey of people helped as part of an evaluation of the program. Accordingly, the form should be revised for each occurrence to fit the objectives of record keeping. The forms should not, however, be made any larger because completing them takes time. One idea worth investigating is using a multiple-carbon-copy flow chart or checklist to explain the mitigation measures. One of the copies can be kept as the record form.
2. The DFO computer offers many possibilities for retrieving and sorting information about the people who visited the mitigation table. Some of the information desired, such as estimated property damages (block C.1. on the DAC registration form), is not entered into the data base. The program has other limitations on manipulation of the data. The team leader should become thoroughly familiar with the program and coordinate with the DFO computer staff before the record forms are designed.

DAC Coordination

We learned the following regarding coordination between team leaders, registrars, and DAC activities:

1. The team leader briefed the DAC registrars during their regular orientation the day before the DACs opened. The leader can accomplish the briefing in 10 minutes by summarizing the project, handing out the registrar procedures sheet (Appendix A), and keeping registrar instructions to a minimum (if the applicant had property damage to buildings or contents, the registrar need only check the appropriate box on the

disaster assistance registration/application form). The registrars displayed a high degree of interest in the project.

2. There were still problems of coordination with the other DAC activities. The fact that some of the DAC managers had seen the 1986 mitigation work or were acquainted with the mitigation staff facilitated coordination in 1987. Complaints still arose, however, that the mitigation table held people up and should be outside the DAC or after the final exit interview. The DAC mitigation table staff and the DAC managers eventually resolved most problems of coordination within the DAC.
3. Some time was used to discuss flood insurance. Even people with a flood insurance policy were not always clear about what was and was not covered. It may be appropriate for FEMA to staff a separate flood insurance table with experts who can discuss policy coverage and claims procedures, the mandatory purchase rules, and private basement flood insurance.

Counseling

Our experience with counseling at the DAC tables confirmed the importance of personal contact and advice tailored to individual situations:

1. Personal contact is very important in advising people about mitigation. The mitigation staff should have nametags (first names are sufficient) and otherwise be very personable. Giving clients names and office numbers encourages them to call back if they have questions.
2. One of the objectives of the mitigation table is to "build an attitude" so the clients recognize that they can take steps to protect themselves. The table can be considered successful if clients read the manual when they get home. In many cases, the client already has an idea, and the mitigation staff's job is to confirm that it is a good one, encourage it, and provide additional technical information as needed.
3. Unlike financial assistance applications, each person need not follow a centrally controlled procedure or mandatory format. Each counselor must, however, convey an understanding of and belief in the protection measures they recommend. Some preferred marking up the manuals instead of using the building drawings. Those trained on short notice wanted more literature and formula instructions, which detract from the objective of making everything personal. A checklist would help ensure that all key points are covered.
4. Explanations of risk analysis and detailed cost calculations are not necessary. Homeowners make their own decisions on the basis of the personal impact of the flood and their subjective impressions of how much the flood has cost and the likelihood of recurrence. Detailed cost-benefit analyses can be confusing and can detract from the "attitude building." Providing approximate costs of the various measures, however, can

- be very helpful. Costs should be calculated according to local prices and made available.
5. In some cases the mitigation staff served as a "complaint desk" for people who wanted to discuss problems or complain to the only person who knew anything about local building departments. Although this detracted from providing mitigation information, it made people feel better when they finally left the DAC. It also helped somewhat in identifying potential community mitigation projects, though much of the complaining can prove to be based on rumors or incomplete knowledge of the flood event.
 6. Although the record form includes a column for follow-up, resource limitations prevented any state or federal calls to those counseled. The natural tendency is to let the mitigation tables function independently. The FEMA-state hazard-mitigation team needs to make a special effort to coordinate other activities with the tables. For example, communities should send representatives to watch how the tables work, and perhaps these representatives would follow through with their own residents. At a minimum, people should be given the names and phone numbers of local or state offices that will be available to answer questions or help with financing.

Attitudes and Morale

Staff attitudes and morale were very important for success at the mitigation tables:

1. Mitigation staff were constantly torn between two conflicting objectives: helping the client and getting the client through the DAC as quickly as possible. The second objective was partially imposed by the DAC system and partially by the desire to get to the next client waiting in line. This dilemma and the long hours without breaks caused staff fatigue—a factor that directly affected staffing levels and performance. This problem would be minimized in the future if the mitigation tables were adequately staffed with fully trained people.
2. All of the mitigation staff debriefed felt a sense of accomplishment. Several thought the idea of Dr. Laska's evaluation of the project was a needless expense; they knew it made sense. Others reported enjoying themselves in spite of the long hours. Even a registrar reservist asked where she could sign up to work at the next disaster.
3. An unexpected benefit the mitigation staff observed was that clients left the mitigation table feeling that they could do something for themselves. Until they encountered the mitigation table, many had felt at the mercy of Mother Nature's whims and had been receiving information on what the government could do to help them. Rather than seeing themselves as victims of fate or as dependent on Big Brother, people were starting to see that they could affect their future and take steps to prevent a recurrence of their disaster. Real recovery starts when people feel that they have some control over their situations.

Costs and Benefits

It took approximately 120 staff days to cover all six DACs during the 13-day period. This total includes supervision time and one-half day for training, but does not include travel time or days off. At \$250 per average staff day for salary and per diem, total personnel costs approximated \$30,000. Adding \$5,000 for travel and printing expenses brings the total cost estimate to \$35,000. Over half of this total was paid by the State of Illinois for state staff, consultants, and printing. The balance was paid by FEMA for reservists and some printing.

The cost of counseling 5,733 flood victims was \$6.10 per person assisted. If the tables were fully staffed so that each mitigation person saw a maximum of 50 people per day, the cost would be higher, say \$7.50 per person assisted.

Although the participants were convinced of the benefits of the project, an accurate measure of how many clients actually took mitigation actions must await Dr. Laska's next survey. However, if only eight people took steps to prevent \$5,000 in future flood damages, the project will have paid for itself during the next flood. If only 1% took the same level of protection measure, over a quarter of a million dollars in flood damages will have been prevented. Accordingly, very conservative estimates of the benefits of the project show that they exceed the costs.

Recommendations

1. FEMA should incorporate mitigation tables as a DAC activity where flood and building conditions make floodproofing measures appropriate.
2. The mitigation tables should be staffed with properly trained disaster reservists.
3. A detailed manual of procedures based on Dr. Laska's findings should be prepared and published.
4. FEMA should develop and conduct a week-long training program to prepare reservists to serve at mitigation tables.
5. FEMA should collect drawings and photos of building types and floodproofing examples. This library could be used to make posters and handouts that would fit a variety of local situations.

***Appendix A. DAC Mitigation Table Procedures:
Registrar Activities***

People arrive, sign in, get a number, and wait in the waiting area. If sufficient copies are available, FEMA and state mitigation manuals are in the waiting area for them to read.

When their number is called, applicants go to the registrar. The registrar discusses the applicant's situation and completes the DAC registration form ("FEMA Form 90-69, Disaster Assistance Registration/ Application", Figure 1A). Among the questions the registrar asks is whether the applicant had any property damage.

If real estate or personal property was damaged (Section C.1. on the DAC registration form), the registrar checks box 18 in section D to refer the applicant to the mitigation table. The registrar instructs the applicant that the people at the mitigation table will discuss things that can be done to reduce damages from a similar flood in the future.

The mitigation table staff want to see everyone who can benefit from their advice. If the workload gets too heavy, the staff may request that the registrars do more screening. For example, the staff may be able to see only people whose buildings were severely damaged or only those who are interested in taking measures to protect themselves from future flooding.

U.S. GOVERNMENT PRINTING OFFICE: 1985 - 718-448

FEDERAL EMERGENCY MANAGEMENT AGENCY DISASTER ASSISTANCE REGISTRATION APPLICATION		See Privacy Act on Reverse	CONTROL No. N5141	OMB No. 3067-0009 Expires June 30, 1987
A APPLICANT INFORMATION				
1. NAME OF APPLICANT (Last, First, MI)		2. NAME OF SPOUSE/Co-Applicant (Last, First, MI)		3. SSN
				APPLICANT _____ SPOUSE _____
4. GIVE A BRIEF SUMMARY OF HOW YOU WERE AFFECTED BY THE DISASTER				
5. DATE OF LOSS				
6. ADDRESS OF DAMAGED PROPERTY No. Dir. Street City State Zip 7. COUNTY				
8. PRIMARY RESIDENCE <input type="checkbox"/> NO, go to 9 <input type="checkbox"/> YES <input type="checkbox"/> Own/Rent Free <input type="checkbox"/> Rent <input type="checkbox"/> House <input type="checkbox"/> Mobile Home <input type="checkbox"/> Apartment/Duplex <input type="checkbox"/> Other				
9. CURRENT MAILING ADDRESS No. Dir. Street City State Zip Same as above <input type="checkbox"/>				
10. PHONE NUMBER(S)		CURRENT PHONE	WORK PHONE	ALTERNATE PHONE
11. Was your BUSINESS damaged (includes rental property you own, but not farm, property)? <input type="checkbox"/> YES <input type="checkbox"/> NO				
12. Was your FARM damaged (includes crops, livestock, farm bldgs., machinery; but not FARM HOME)? <input type="checkbox"/> YES <input type="checkbox"/> NO				
13. Have you lost time at work or become UNEMPLOYED due to this disaster (includes Self-Employed)? <input type="checkbox"/> YES <input type="checkbox"/> NO				
14. Are your disaster-related needs LIMITED to BUSINESS or FARM damage, or UNEMPLOYMENT? <input type="checkbox"/> YES <input type="checkbox"/> NO				
15. Do you have EMERGENCY need for CLOTHING, SHELTER or FOOD? <input type="checkbox"/> YES <input type="checkbox"/> NO				
16. Do you have disaster related MEDICAL, DENTAL, or FUNERAL EXPENSES? <input type="checkbox"/> YES <input type="checkbox"/> NO				
17. Was your HOME or PERSONAL PROPERTY affected (includes vehicles)? <input type="checkbox"/> YES <input type="checkbox"/> NO				
18. Do you need any services related to items D9 through D19? <input type="checkbox"/> YES <input type="checkbox"/> NO				
19. HOUSEHOLD	NAMES OF ALL PERSONS LIVING IN HOME AT THE TIME OF DISASTER	RELATION TO HEAD OF HOUSEHOLD	X W U Y/N	continued
		HHH		
20. Has anyone listed above also visited a DAC and applied for assistance? (Name):				
B INSURANCE/HOUSING INFORMATION (Registrar: Advise applicant on disaster housing assistance)				
1. DAMAGE OR LOSSES CAUSED BY: <input type="checkbox"/> Flood <input type="checkbox"/> Wind <input type="checkbox"/> Other <input type="checkbox"/> Rain <input type="checkbox"/> Fire		2. INSURANCE COVERAGE: <input type="checkbox"/> NO INSURANCE <input type="checkbox"/> Homeowners/Renters <input type="checkbox"/> Mobile Home <input type="checkbox"/> FLOOD - Policy No. & Company		
REGISTRAR: If damage is limited to wind, rain and/or fire and applicant has homeowners/renters insurance, check B(2), skip to C.				
3. Have any of the following items been SO SEVERELY affected that you and your family SHOULD NOT LIVE IN your primary residence? <input type="checkbox"/> Foundation/Outside Walls <input type="checkbox"/> Roof <input type="checkbox"/> Only Access (Bridge/Road) <input type="checkbox"/> Debris/Standing Water/Mud <input type="checkbox"/> Utility <input type="checkbox"/> Furnace (Season) <input type="checkbox"/> Other				
<input type="checkbox"/> YES, check B(1) and continue <input type="checkbox"/> NO, continue				
4. Have you made any repairs to the above items at your own expense TO ENABLE YOU TO LIVE THERE? <input type="checkbox"/> YES, check B(1) <input type="checkbox"/> NO - If B3 and B4 above are NO, check B(3) below				
APPLICATION DECISION: B(1) <input type="checkbox"/> Temporary Housing Application B(3) <input type="checkbox"/> No Application - Insufficient Damage/Expense		B(2) <input type="checkbox"/> No Application - Insurance		
5. CURRENT LOCATION: <input type="checkbox"/> Friends/Family <input type="checkbox"/> Mass Shelter <input type="checkbox"/> Hotel/Motel <input type="checkbox"/> Rental Unit		6. PAID FOR BY: <input type="checkbox"/> Applicant <input type="checkbox"/> Red Cross <input type="checkbox"/> No Cost <input type="checkbox"/> Other		
C INCOME INFORMATION (Registrar: Advise applicant on SBA and IFG programs)				
1. DAMAGE ESTIMATE Real Estate \$ _____ Personal Property _____ Other _____		3. INCOME TEST <input type="checkbox"/> Week <input type="checkbox"/> Month <input type="checkbox"/> Year a. Gross Income of Applicant \$ _____ b. Other gross income (include spouse's income, interest, dividends) _____ c. Total (a + b) _____ d. SBA minimum cost of living amount for this size household _____		
2. NUMBER OF DEPENDENTS IN HOUSEHOLD INCLUDING APPLICANT: _____		If 3d is LESS than 3c: Check C(1) below, issue SBA Application. If 3d is GREATER than 3c: Check D1 and go to Section E		
APPLICATION DECISION: C(1) <input type="checkbox"/> SBA Application issued C(3) <input type="checkbox"/> SBA Decline issued - This IS an IFG Application for Housing, Personal Property and Transportation		C(2) <input type="checkbox"/> SBA Application Refused C(4) <input type="checkbox"/> MEDICAL, DENTAL, FUNERAL EXPENSES - This IS an IFG Application		
D REFERRALS (Initial in blank spaces)				
<input type="checkbox"/> 1. Summary Decision (SBA)	<input type="checkbox"/> 6. Business Loans (SBA)	<input type="checkbox"/> 11. Legal Services	<input type="checkbox"/> 16. _____	<input type="checkbox"/> 20. Exit Interview
<input type="checkbox"/> 2. Map Reader	<input type="checkbox"/> 7. Agricultural Aid	<input type="checkbox"/> 12. Social Security	<input type="checkbox"/> 17. _____	
<input type="checkbox"/> 3. American Red Cross	<input type="checkbox"/> 8. Tax Assistance	<input type="checkbox"/> 13. Veterans Services	<input type="checkbox"/> 18. _____	
<input type="checkbox"/> 4. Vol. Agency	<input type="checkbox"/> 9. Local Officials	<input type="checkbox"/> 14. Food Stamps	<input type="checkbox"/> 19. _____	
<input type="checkbox"/> 5. Unemp. Assistance	<input type="checkbox"/> 10. Insurance Services	<input type="checkbox"/> 15. Consumer Svc.		
COMMENTS:				
E CERTIFICATION				
REGISTRAR: Ask APPLICANT to read the CERTIFICATION/AUTHORIZATION on the reverse side and SIGN below.				
APPLICANT: I have read or had read to me and understand the Certification on the reverse of this form. <input type="checkbox"/>				
1. SIGNATURE OF APPLICANT	2. DATE	3. DAC No.	4. NAME OF REGISTRAR (Print)	5. Lead Registrar (Init.)
F FLOOD HAZARD DETERMINATION (This section to be completed by map reader)				
1. COMMUNITY-PANEL NO.	2. MAP DATE	3. ZONES <input type="checkbox"/> Zone A <input type="checkbox"/> Zone V <input type="checkbox"/> Other		
		<input type="checkbox"/> Not Mapped <input type="checkbox"/> No Map <input type="checkbox"/> Floodway		
DIRECTION TO DAMAGED PROPERTY (Nearest cross street and other location aids (sketch map if necessary))				

FEMA Form 90-69, APR 86

REPLACES EDITION OF SEP 85 AND FEMA Form 90-72, SEP 85 WHICH ARE OBSOLETE.

FCO

Figure 1A. The DAC registration form.

**Appendix B. DAC Mitigation Table Procedures:
Mitigation Table Activities**

1. Fill out the first four columns of the mitigation table record form (Appendix D):

Control No.: Use the number at the top of the DAC registration form.

Community: City or village name. If unincorporated, note accordingly, e.g., "uninc. Cook, east of Des Plaines."

Source: Note one or more of the following.

overbank: stream overflowed its banks

sewer: sewer backed up

drainage: more rain than drainage system could handle

Depth: Note approximate depth in basement or over first floor, e.g., "B: 3'" or "FF: 2' + B."

2. Plan A (when there is adequate time and no long waiting line): Use the typical building construction drawings (Appendix C) when reviewing the person's source of flood damage and type of building. Take notes on the drawings as the person talks. Explain the various appropriate mitigation methods for that situation and note your explanations on the drawing. If the person is interested in mitigation funding, review the potential funding sources applicable to that person (e.g. SBA, IFG, 1362, etc.). If a code requirement is needed for funding, advise the person to first have the building inspector contact you before completing the application for SBA or IFG.
3. Plan B (when many people are waiting and in a hurry): Assemble those waiting into similar groups (e.g., those with only basement flooding) and give a general presentation to them. Give them the appropriate manuals and tell them that you can discuss protection measures when they see that you are free.
4. Advise everyone about flood, sewer backup, or sump pump failure insurance, as appropriate.
5. Give clients your name and DFO telephone hotline for them to call if they have questions or need help.
6. Complete the last three columns of the mitigation table record form (Appendix D).

Manual: Which manual did they get? (*Protect Your Home, Basements, or Elevating and Relocating?*)

Recommendation: What did you advise?

Follow up: Is the person going to need more technical advice, help with the building department, or help with disaster assistance? Put "yes" for all potential acquisition or relocation properties.

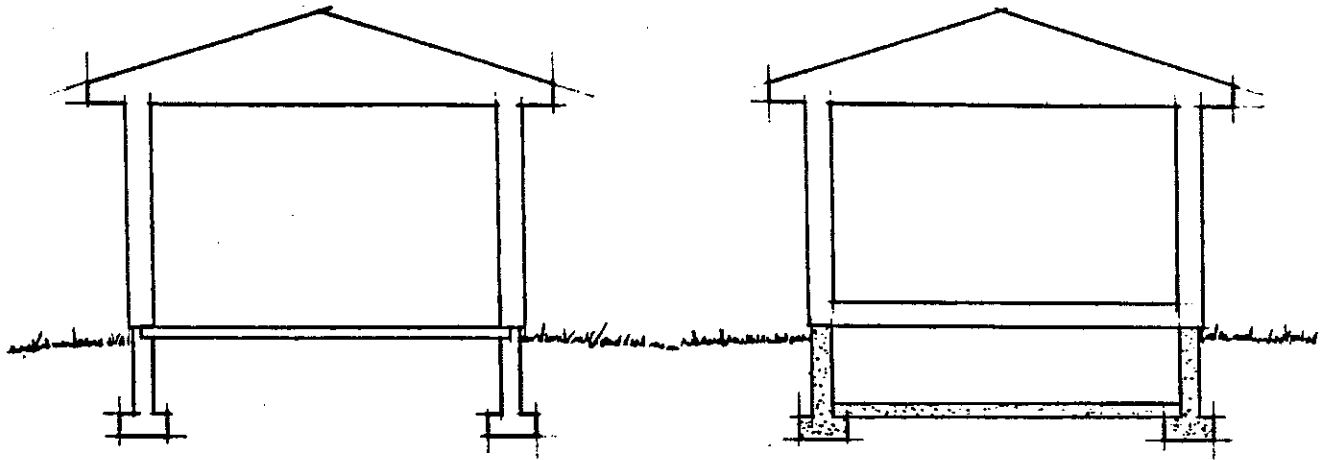
7. Initial Box 18 on the DAC registration form and instruct the applicant on where to go next.

Typical Mitigation Recommendations

<u>Construction</u>	<u>Depth</u>	<u>Recommendation (in priority order)</u>
1. All substantial damage		1. elevate, relocate or sell, give <i>Protect Your Home (PYH)</i> ; if interested, give <i>Elevating and Relocating</i> ; if insured, explain and give 1362 handout
2. Crawlspace	up to 3 ft	1. low levee/berm/floodwall, give <i>PYH</i> 2. elevate or relocate, give <i>PYH</i> ; if interested, give <i>Elevating and Relocating</i> 3. Flood Shield
	over 3 ft	1. elevate or relocate, give <i>PYH</i> ; if interested, give <i>Elevating and Relocating</i>
3. Slab	up to 3 ft	1. dry floodproof, give <i>PYH</i> 2. low levee/berm/floodwall, give <i>PYH</i>
	over 3 ft	1. relocate, give <i>PYH</i> ; if interested, give <i>Elevating and Relocating</i>
4. Garage or outbuilding		1. wet floodproof, give <i>PYH</i>
5. Basements		Give <i>Flooded Basements</i>
Sump backup		1. check pump, get more pumps, drain out on top of ground (check local code)
Sewer backup	up to 3 ft	1. plug or standpipe
	over 3 ft	1. backup valve, overhead sewers
Seepage		1. seal walls 2. subsurface drainage system
Surface flow	up to 3 ft	Treat bi-levels, split-levels, and walk out basements with less than 3 ft same as slab
	over 3 ft	1. wet floodproof, give <i>PYH</i> 2. elevate or relocate, give <i>PYH</i> ; if interested, give <i>Elevating and Relocating</i>

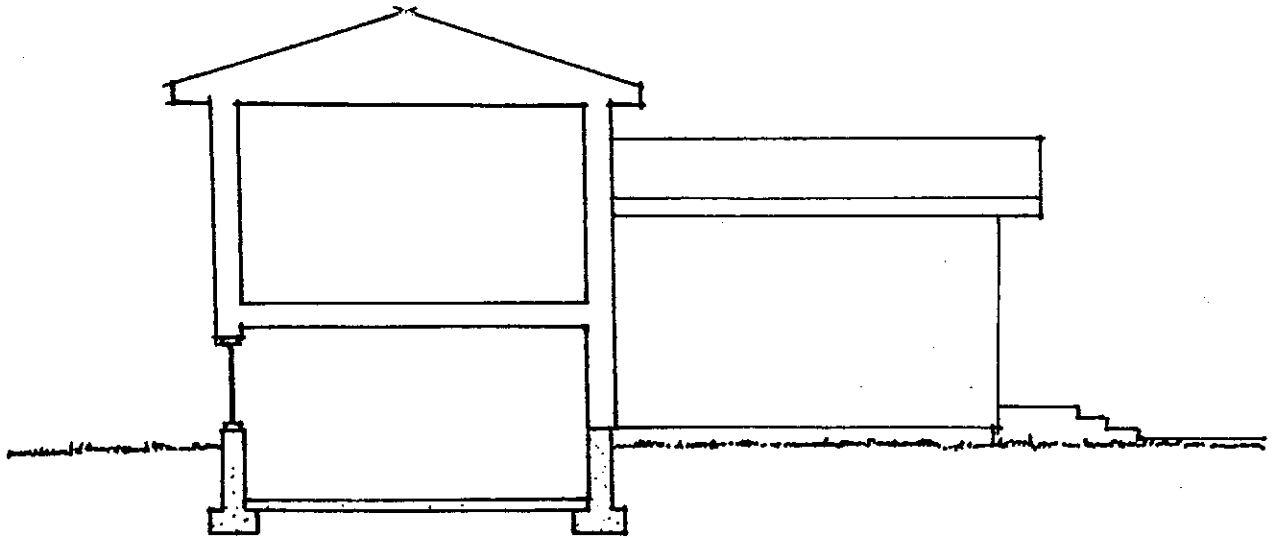
Appendix C. Typical Building Construction Drawings

Note: The actual drawings used were larger, one to an 8½-x-11-inch piece of paper.

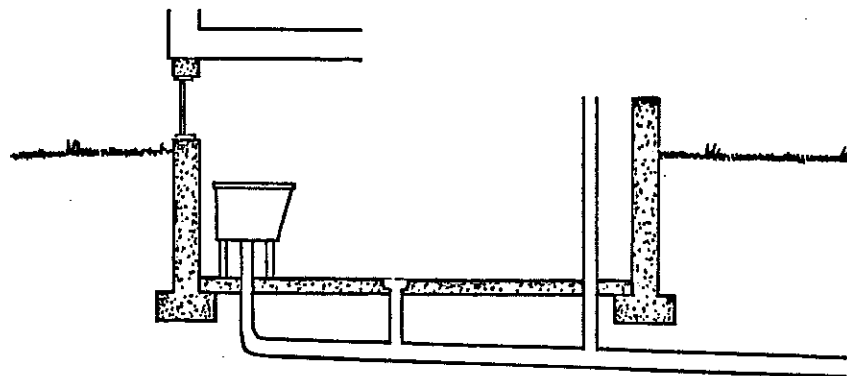


HOUSE ON SLAB

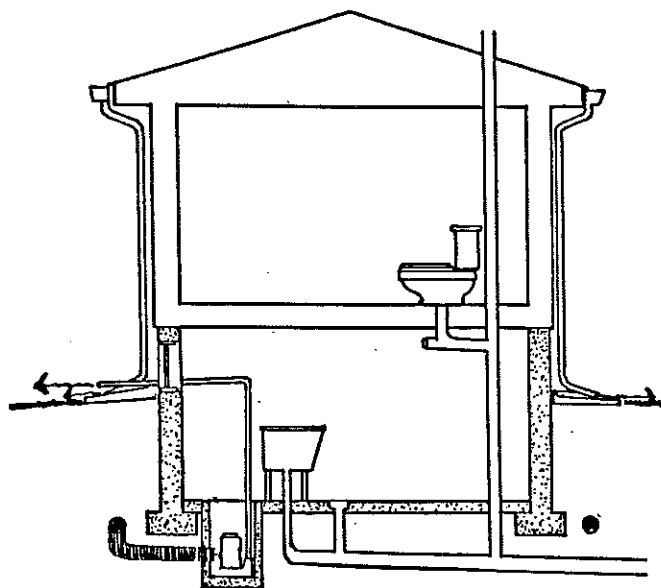
HOUSE ON CRAWLSPACE



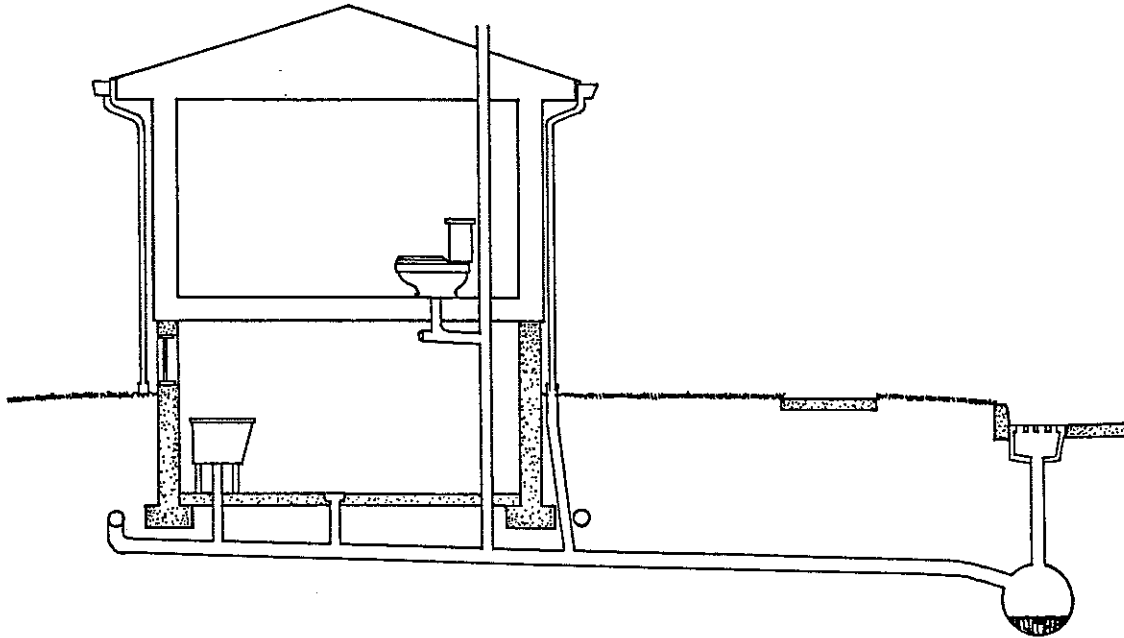
SPLIT-LEVEL HOUSE



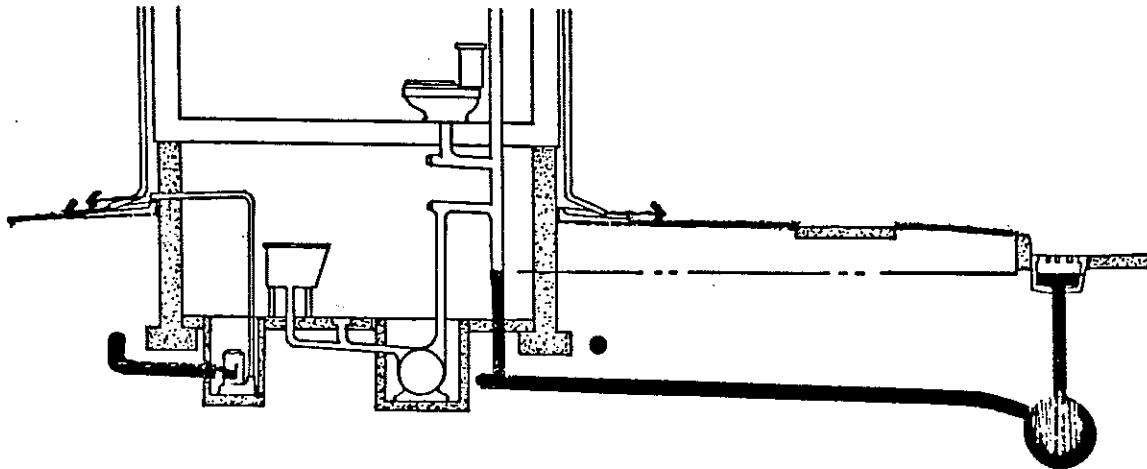
HOUSE WITH BASEMENT, SEPARATE SEWER, NO SUBSURFACE DRAINAGE



HOUSE WITH BASEMENT, SEPARATE SEWER
SUBSURFACE DRAINAGE WITH SUMP PUMP



HOUSE WITH BASEMENT, COMBINED STORM AND SANITARY SEWER



HOUSE WITH BASEMENT, COMBINED SEWER
STORM SEWER INTAKES DISCONNECTED, OVERHEAD SANITARY SEWER

Appendix D. Mitigation Table Record Form

DAC: # 1

MITIGATION TABLE RECORD

Date: 8/31/87

Name: _____

Control No.	Community	Source	Depth	Manual	Recommendation	Follow up?
P-3337	Des Plaines	Surface sewer	3' B	FB	NFI - block windows - in line valve	NO
P-9968	D.	Surface	3" FF Full crawl	ERH	Elevate/relocate (Neighbor hood drain) - in front yard	Yes
P-3338	D.	Surface sewer	1' B	FB	Berm - stand pipe - br. wall - sump	NO
P-3928	D.	Surface sewer	2' B	FB	Bil Sump - check over h. sewer line	NO
P-9919	D.	drainage	3' B	FB	Bil Sump - NFI	NO
P-3927	D.	surface	5" main crawl	ERH	NFI - elevate - (Berm) - Block shield water barrier	NO
P-3376	D.	surface	11" B	FB	Bil Sump - check valve -	NO
P-9991	D.	Surface sewer	2' B	FB	Has had ^{check wall cracks yet} all done already	NO
O-5099	D.	FF FF FF	3" FF Full B.	ER	Elevate or Relocate	Yes
P-3950	C. Schaumburg	Surface	2" FF slab	ERH	" "	Yes
P-3340	D.	surface	0' FF	ERH	" "	Yes
O-5044	D.	seepage sewer	3 1/2' B	FB	Off sewer - sumps - seal walls	NO
O-5053	D.	Surface	4" B	-	shallow wall around base next stairs	NO
P-3341	D.	Surface	7' in. crawl	-	sump? / buy out - house already raised	Yes
O-5065	D.	Surface	1 1/2" FF	-	glass brick - don't want to improve	NO
P-9993	D.	sewer	2' B	FB P+P	Xtra sump - off sewer - stand pipe Bil Valve	NO

Appendix E. DAC Mitigation Table Depth of Flooding Data

DR 798: DAC Mitigation Table

Depth of Flooding Data as of September 18

<u>Community</u>	<u>Basement Only</u>	<u>Over First Floor Under 3'</u>	<u>Over 3'</u>
Addison	210	103	36
Arlington Heights	10	19	10
Bartlett	0	1	0
Bellwood	321	9	3
Bensenville	10	25	15
Berkeley	2	1	0
Bloomington	1	4	0
Brookfield	0	1	1
Carol Stream	6	29	2
Chicago	58	65	42
Cicero	1	0	0
Cook Co. Uninc.	26	54	12
Deerfield	0	0	1
Des Plaines	392	92	27
Downers Grove	0	1	0
Elgin	1	1	0
DuPage Co. Uninc.	1	26	7
Elk Grove Village	0	9	2
Elmhurst	265	91	17
Elmwood Park	1	3	0
Evanston	67	13	1
Forest Park	1	1	0
Franklin Park	3	8	1
Glencoe	1	1	0
Glen Ellyn	34	14	1
Glendale Heights	2	4	1
Glenview	6	9	1
Hanover Park	1	6	1
Harwood Heights	1	2	0
Hoffman Estates	0	3	0
Itasca	1	3	0
Lemont	0	1	0
Lincolnwood	6	2	1
Lisle	0	1	0
Lombard	8	29	6
Lyons	1	2	0
Maywood	54	1	0
Medinah	0	0	1
Melrose Park	0	15	1
Morton Grove	4	9	0
Mt. Prospect	142	21	12
Naperville	0	1	0
Niles	164	5	3
Norridge	3	4	0
Northbrook	2	3	1
Northfield	0	2	0
Northlake	0	5	1
Oak Brook	0	1	2
Oak Park	0	2	0
Oakbrook Terrace	0	1	0
Palatine	1	0	1
Park Ridge	105	35	2
Prospect Heights	0	9	2
River Grove	1	7	0
Riverside	0	1	2
Rolling Meadows	0	6	0
Roselle	2	16	5
Rosemont	2	15	9
Schaumburg	2	6	0
Schiller Park	0	8	2
Skokie	214	71	15
Stone Park	0	13	1
Streamwood	0	2	0
Villa Park	19	28	1
Warrenville	0	1	0
Westchester	2	10	1
Westmont	0	4	2
Wheaton	26	5	2
Wheeling	29	9	5
Wilmette	11	10	3
Winfield	4	4	0
Woodridge	0	0	1
Wood Dale	5	36	21
	<u>2229</u>	<u>999</u>	<u>284</u>

Appendix F. 1987 Illinois DAC Mitigation Table Team

Illinois Division of Water Resources

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Rich Roths
French Wetmore

Federal Emergency Management Agency

Bill Callahan
Susan Josheff
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