

State Water Survey Division
SURFACE WATER SECTION
AT THE
UNIVERSITY OF ILLINOIS

ENR
Illinois Department of
Energy and Natural Resources

SWS Contract Report 333

**FLOODPLAIN INFORMATION SERVICES PROVIDED
BY THE ILLINOIS STATE WATER SURVEY DURING 1982-1983**

by

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Prepared for the Illinois Department of
Energy and Natural Resources

Champaign, Illinois
November 1983



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INTRODUCTION

The federal government has identified approximately 20,000 communities in the United States as having flood hazards. Of these communities, 711 are located in Illinois. Continuing efforts at the local, state, and federal levels to reduce flood hazards have been effective in slowing the rate of increase in flood damages, but the total amount of losses continues to grow. Illinois' share of average annual flood damage is over \$100 million.

Since the creation of the Governor's Task Force on Flood Control in 1973, the State of Illinois has been very active in promoting and guiding non-structural solutions as a way of mitigating these flood damage losses. The Task Force's 1975 report presented a detailed assessment of the state's flood-related programs. In a section on the State of Illinois' Flood Damage Prevention Program, this report noted that the Illinois State Water Survey (SWS) had been given responsibility for maintaining a repository of floodplain information.

The Floodplain Information Repository established by the Water Survey, as well as other Water Survey activities related to floodplain information, have been described by Lardner et al. (1979) in Illinois State Water Survey Circular 137. This Circular and a short brochure summarizing the SWS floodplain information activities (Appendix) have received widespread distribution among public agencies, communities, insurance agents, and consulting engineers.

A unified, coherent program of floodplain management can be developed and administered at the local level only with the technical support of the many other government entities that are responsible for floodplain management. Flood problems generally occur in communities that lack resources to solve problems and develop programs on their own. Any approach to the flood problem begins with a determination of the extent to which a flood hazard exists. A significant step in this direction is to learn what information already is available, how appropriate it is for management purposes, and whether better information should be prepared. The Floodplain Information Repository is a primary resource for this type of information, not only for local officials but for other public and private establishments as well.

Acknowledgments

Pamela Lovett typed the original and final drafts of this report, and Gail Taylor edited it. John W. Brother, Jr., supervised the preparation of illustrations.

THE ROLE OF THE FLOODPLAIN INFORMATION REPOSITORY

Relevance to State Programs

The Floodplain Information Repository provides data relevant to several state programs. Permits issued by the Environmental Protection Agency require that sites such as water and waste treatment plants, hazardous waste sites, and landfill sites be protected from the 100-year flood (flood of a magnitude that would be expected once in 100 years). The Repository often provides relevant information to designers of these projects.

The Governor's Executive Order IV (1979) requires that new construction projects at state-supported facilities be checked to assure that the project is not in a flood hazard area. The Floodplain Information Repository assists state agencies, health facilities, housing authorities, etc., to comply with this order.

Engineers and architects often need information on the 100-year flood elevation and boundary in order to plan projects and to obtain necessary state and local construction permits.

When applying for state permits, mining companies are often concerned about whether their mining activities will be remote from floodplain areas that are unsuitable for mining and need protection from flooding. The Repository can provide the best available information regarding these areas.

Relevance to Federal Programs

The most relevant federal program supported by the Repository is the National Flood Insurance Program (NFIP). A function of the Repository is to keep complete sets of flood insurance studies, maps, and profiles so that this information can be provided on the day it is requested. To obtain this same information from the federal government takes several weeks, if it is available.

When confronted with the NFIP mandatory requirement to buy flood insurance, prospective homeowners in floodprone areas often request the appropriate floodplain maps and flood profiles to determine if property is within the flood boundary or if it is above the regulatory 100-year flood elevation. As flood insurance premiums increase (up to 60% recently) to

reach unsubsidized actuarial rates, the demand for this information is likely to increase.

New rules proposed for the NFIP will require that any new construction in an approximate "A" zone (Flood Hazard Area--no elevations provided) must provide a flood elevation before flood insurance can be purchased (which is mandatory if the mortgage is from a federally insured bank). The Repository can provide this information when it is needed.

Future Role

As the federal government shifts control over programs to the state, the state will assume increased responsibility for floodplain management.

The Association of State Floodplain Managers (ASFPM) has identified appropriate state and federal roles in floodplain management. They have determined that a data repository is an important and necessary state role.

The framework for accomplishing floodplain management responsibilities in the State of Illinois is established with an existing, functioning data repository that can respond to the information needs of those directly involved in the operation of programs to manage floodplain areas in the state.

Financial Support during 1982-1983

Support for the Floodplain Information Repository activities during 1982-1983 has been provided by the Illinois Department of Energy and Natural Resources (DENR), Environmental Management Division, which has now been reorganized into the Division of Policy and Planning. Tim Warren and William Frerichs served in a liaison capacity during the course of the contract period.

THE FLOODPLAIN INFORMATION REPOSITORY DATA BASE

Before beginning a project or purchasing property near riverine areas, an individual must determine if the area of interest is floodprone and to what extent. The purpose of the Floodplain Information Repository is to answer requests on matters such as this, using the best available flood hazard information from the reports on file at the State Water Survey. The Repository relies upon the cooperation of engineers and agencies to provide information to the Water Survey. There are presently over 942 reports in the Repository.

Managing the Data Base

For each report in the Floodplain Information Repository, bibliographic information and applicable key words are recorded onto a Data Entry Form (figure 1) and are then entered into a computerized data base.

Three computer programs have been written to manage this data base. The first program, ENTRY, allows for each item on the Data Entry Form to be indexed into the system. Another program, CHANGE, allows the user to change information already indexed by ENTRY. CHANGE is particularly useful for correcting any mistakes in data entry and for updating reports. The third program, SWAT, retrieves the data that have been entered in the format requested. A series of commands enables a user to search for any combination of bibliographic or stream information items.

Types of Studies Indexed

The reports in the Floodplain Information Repository are divided into nine basic categories. The categories, the total number of reports in each category as of August 30, 1983, and the number in each category that

State Water Survey Division



Water Resources Building
605 East Springfield Avenue
P.O. Box 5050, Station A
Champaign, Illinois 61820
217/333-2211

Illinois Department of
Energy and Natural Resources

DATA ENTRY FORM SURFACE WATER REPOSITORY

- 1) FOR SWS USE ONLY
 - A) I.D. NUMBER _____
 - B) DATE _____
- 2) TITLE OF REPORT _____
- 3) AUTHOR OR AGENCY (CHECK ONE)
 - DOWR - DIVISION OF WATER RESOURCES
 - SWS - STATE WATER SURVEY
 - USGS - UNITED STATES GEOLOGICAL SURVEY
 - SCS - SOIL CONSERVATION SERVICE
 - CCOE - CHICAGO CORPS OF ENGINEERS
 - RCOE - ROCK ISLAND CORPS OF ENGINEERS
 - LCOE - LOUISVILLE CORPS OF ENGINEERS
 - SCOE - ST. LOUIS CORPS OF ENGINEERS
 - MCOE - MEMPHIS CORPS OF ENGINEERS
 - NIPC - NORTHEASTERN ILLINOIS PLANNING COMMISSION
 - MSD - CHICAGO METROPOLITAN SANITARY DISTRICT
 - SWPC - SOUTHWESTERN ILLINOIS PLANNING COMMISSION
 - OTHER; SPECIFY _____
- 4) TYPE OF REPORT (CHECK ONE)
 - FIS - FLOOD INSURANCE STUDY
 - REG - REGULATORY STUDY
 - REC - RECONNAISSANCE STUDY
 - SPS - STRATEGIC PLANNING STUDY
 - PPS - PROJECT PLANNING STUDY
 - FEA - FEASIBILITY STUDY
 - FHA - FLOOD HAZARD ANALYSIS
 - FMP - FLOOD WATER MANAGEMENT PLAN
 - WWP - WATERSHED WORK PLAN
 - FCS - FLOOD CONTROL STUDY
 - FPI - FLOOD PLAIN INFORMATION STUDY
 - OTHER; SPECIFY _____
- 5) YEAR OF ISSUE _____
- 6) LOCATED AT ISWS YES NO
- 7) CERTIFIED STUDY YES NO
- 8) NUMBER OF STREAMS AND TRIBUTARIES (OR OTHER FLOOD PRONE AREAS) STUDIED _____
(Enter data on reverse)

Figure 1. Data Entry Form

were indexed in 1982-1983 are shown in the following tabulation.

Definitions of the nine categories follow. (These categories differ somewhat from the types of reports listed on the Data Entry Form shown as figure 1. The Flood Control Studies category includes three other types of reports listed on the DEF: Feasibility Studies, Flood Water Management-Plans, and Watershed Work Plans. Reports in the Dam Safety Reports category are indexed under "Other" on the DEF.)

| | Total indexed | No. indexed in 1982-1983 |
|--|------------------|-----------------------------|
| 1. Flood Insurance Studies (FIS) | 413 | 55 |
| 2. Regulatory Floodplain Studies (REG) | 9 | 0 |
| 3. Flood Hazard Reconnaissance Studies (REC) | 172 | 10 |
| 4. Strategic Planning Studies (SPS) | 6 | 0 |
| 5. Flood Hazard Analyses (FHA) | 94 | 2 |
| 6. Flood Control Studies (FCS) | 19 | 2 |
| 7. Floodplain Information Reports (FPI) | 43 | 1 |
| 8. Project Planning Studies (PPS) | 15 | 5 |
| 9. Dam Safety Reports (DSR) | <u>171</u> | <u>0</u> |
| | 942 | 75 |

1. Flood Insurance Studies (FIS)

A flood insurance study is the result of a detailed stream analysis, performed for the Federal Emergency Management Agency under their guidelines. Data normally include flood boundary and floodway maps that show the 100-year and 500-year floodplain and 100-year floodway. Also included are flood insurance rate maps that show similar flood boundaries along with flood insurance zone information and elevation reference marks, and flood profiles for the 10-, 50-, 100-, and 500-year floods.

2. Regulatory Floodplain Studies (REG)

These studies include maps and profiles prepared for floodplain regulations administered by the Illinois Division of Water Resources (IDWR) under their authority established pursuant to Section 65f,

Chapter 19, Illinois Revised Statutes. The studies provide orthophoto contour maps depicting the 100-year floodway and floodplain, as well as 100-year flood profiles including IDWR regulatory flood protection elevations (1 foot above 100-year).

3. Flood Hazard Reconnaissance Studies (REC)

These studies are generally furnished by the Soil Conservation Service (under Section 6 of Public Law 83-566) and the U.S. Army Corps of Engineers (under Section 22 of Public Law 93-251). They provide an assessment of current data on the nature of specific problems and an estimate of average annual flood damages. These studies vary in the degree of detail in which they present floodplain information. Generally, approximate methods are used.

4. Strategic Planning Studies (SPS)

These studies are the next phase of study for communities that have severe flood problems noted in a flood hazard reconnaissance study. They show much more detail and explore the feasibility of flood control projects.

5. Flood Hazard Analyses (FHA)

These again vary in detail and generally are floodplain studies used for planning purposes. The majority of these are "Flood Hydrologic Atlas Maps" that show flood boundaries and profiles of historic floods and/or the 100-year flood in northeastern Illinois.

6. Flood Control Studies (FCS)

These studies are generally detailed in nature and include flood profiles and floodplain maps that are the technical basis for planning and design of a flood control project that would lessen the flood hazard.

7. Floodplain Information Reports (FPI)

These are detailed studies of the flood hazard and include profiles and flood boundaries of the 100-year flood and sometimes historical floods or floods greater than the 100-year. These studies were generally prepared by the Corps of Engineers prior to the study efforts of the National Flood Insurance Program and are intended as an aid to local planning and zoning of the flood hazard area.

8. Project Planning Studies (PPS)

These studies vary in the amount of detail given in presenting information about a flood hazard area. They are prepared in the planning and design of a project that may be impacted by floods, such as a bridge or other drainage structure.

9. Dam Safety Reports (DSR)

These reports are analyses of the ability of a dam to pass the 100-year flood and various percentages of the Probable Maximum Flood. These studies use flood routing techniques to determine the 100-year pool elevation of the reservoir behind the dam.

Geographic Breakdown of Reports. Figure 2 gives a breakdown of the geographic distribution of reports by county. This figure indicates which areas of the state have the most severe flood problems and/or potential for development in floodplain areas.

Miscellaneous Floodplain Information

Two other sources of floodplain information are available in the Floodplain Information Repository at the Illinois State Water Survey. These are floodplain maps not indexed into the information retrieval computer program.

The first set of maps, known as "Flood-Prone Area Maps," are available for most Illinois streams that meet the following criteria:

- 1) Urban and suburban areas where the upstream drainage area exceeds 25 square miles.
- 2) Rural areas in humid regions where the upstream drainage area exceeds 100 square miles.

The floodprone areas outlined on these maps have a 1 percent chance of flooding (100-year) during any year. U.S. Geological Survey 7.5-minute or 15-minute topographic maps are used as the bases for the maps (Edelen, 1973).

The second set of maps are prepared by the Federal Emergency Management Agency and are known as "Flood Hazard Boundary Maps" (FHBM). Most floodprone communities and counties in Illinois that do not have flood insurance studies have had a map of this type prepared.

Complete sets of these two types of maps are located at the State Water Survey, with some extra copies available upon request.

OTHER SERVICES PROVIDED BY THE STATE WATER SURVEY

Reviews of 100-Year Flood Discharges

As part of the floodplain services provided under this contract, the Water Survey reviews all 100-year frequency discharge estimates to be used in regulatory floodplain studies. These discharge values, which have been formulated by various agencies and consultants, are formally submitted to the Water Survey for review (figure 3). The Water Survey then checks the submitted value against the value computed by the State Standard Method (figure 4) and recommends that the Illinois Division of Water Resources (IDWR) either approve or disapprove the submitted value. Should any conflicts arise, arbitration is provided by the IDWR and the ISWS.

The approval procedure was established to better coordinate the work of contractors doing floodplain studies in Illinois and to insure consistency of reports. Once a value has been established at a point, only a detailed technical review can cause its alteration. At present, approximately 2025 individual estimates have been approved for the 25 major river basins in Illinois. Figure 5 shows the number of streams in these 25 basins with approved 100-year flow values.

During the past contract period (1982-1983), 98 discharge estimates were reviewed and recommendations were made to the Illinois Division of Water Resources for their approval for use in regulatory floodplain studies.

Engineering Support to Local Officials

The Floodplain Information Repository locates available flood studies and, where there is more than one for the same area, identifies which has

State Water Survey Division



Water Resources Building
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P.O. Box 5050, Station A
Champaign, Illinois 61820

Illinois Department of
Energy and Natural Resources

FLOODPLAIN REPOSITORY DISCHARGE REVIEW FORM

AGENCY OR FIRM _____ DATE _____

SUBMITTED BY _____ PHONE _____

ADDRESS _____ ZIP _____

STUDY NAME _____

1. LOCATION OF POINT OF INTEREST

NAME OF STREAM _____

QUADRANGLE NAME _____ COUNTY _____

1/4 SECTION, TOP & RANGE _____

IDENTIFYING LANDMARK, ROAD
CROSSING, CONFLUENCE, ETC _____

2. DRAINAGE AREA ABOVE POINT OF INTEREST _____ sq mi

3. DISTANCE FROM POINT OF INTEREST TO WATERSHED DIVIDE MEASURED ALONG THE STREAM

CHANNEL _____ mi

4. ELEVATION OF STREAM BED 10% AND 85% OF THE DISTANCE FROM THE POINT OF INTEREST TO THE
BASIN DIVIDE AS MEASURED IN ITEM 3

_____ ft msl @ 10% _____ ft msl @ 85%

5. DRAINAGE AREA IMPERVIOUSNESS (If)

PRESENT CONDITIONS _____ % OF DRAINAGE AREA

FUTURE CONDITIONS (if applicable) _____ % OF DRAINAGE AREA

YEAR AND SOURCE OF DATA USED
TO ESTIMATE % IMPERVIOUSNESS _____

6. DISCHARGES SUBMITTED FOR APPROVAL

| RETURN PERIOD (YEARS) | DISCHARGE (cfs) | |
|--------------------------|--------------------|-------------------|
| | PRESENT CONDITIONS | FUTURE CONDITIONS |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

FLOODPLAIN REPOSITORY
ILLINOIS STATE WATER SURVEY
P.O. Box 5050, Station A
Champaign, Illinois 61820

RETURN COMPLETED FORM TO:

PHONE: (217)-333-0447

Figure 3. Floodplain Repository Discharge Review Form

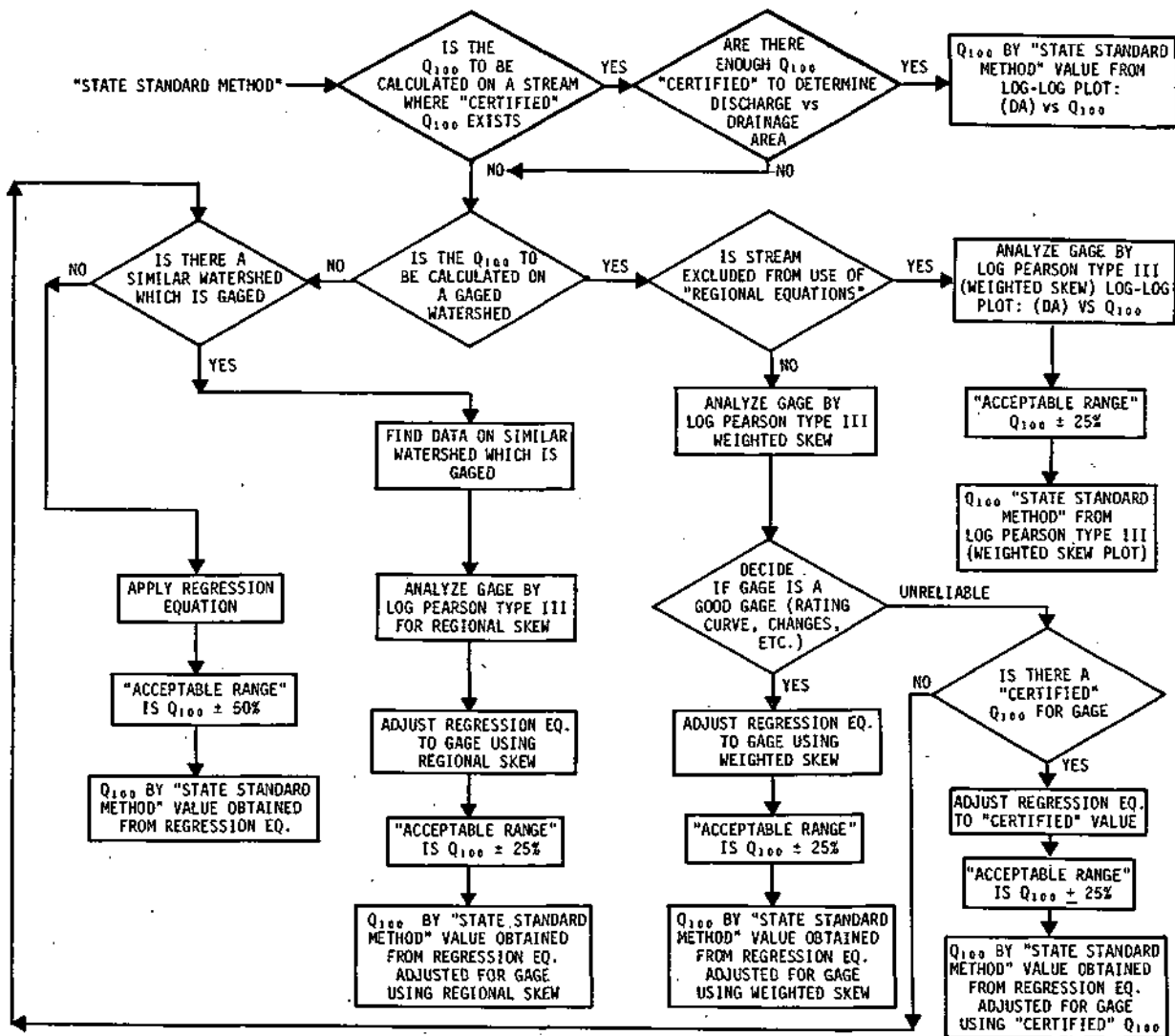


Figure 4. State Standard Method

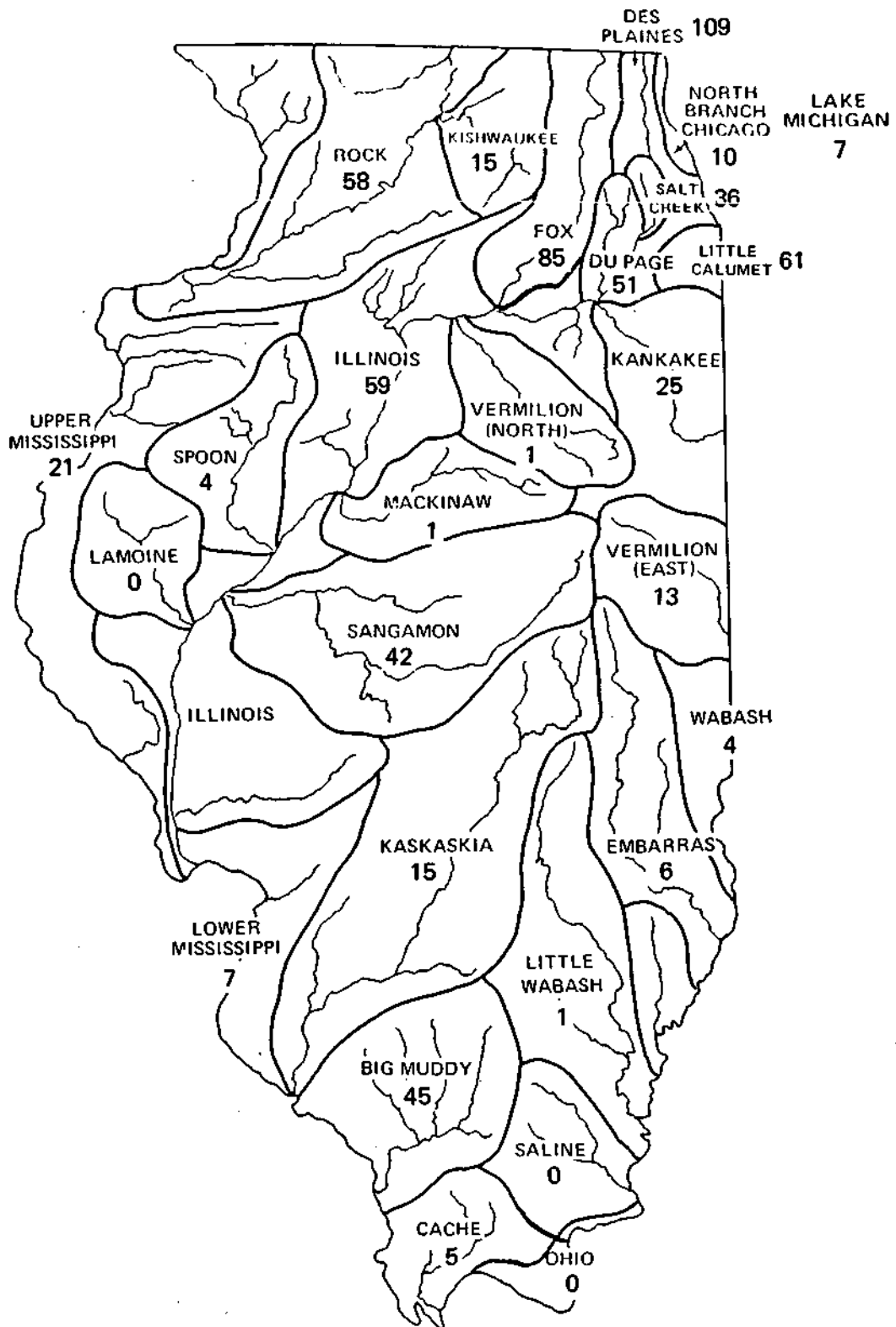


Figure 5. Number of Streams per River Basin with Approved 100-year Flow Values

the best data for regulations. This is explained in the brochure **Floodplain Information Assistance** (Appendix) and in ISWS Circular 137 (Lardner et al., 1979).

Where detailed floodplain data are not available, local officials are advised to calculate approximate 100-year flood depths using the Depth and Frequency Method developed by the U.S. Geological Survey (Prugh, 1976; Lardner and Terstriep, 1982) and to use the results to regulate the floodplain (IDWR, 1981).

Often the Depth and Frequency Method can be complicated and confusing to local officials because they lack in-house engineering support to assist them. Therefore, another service provided as part of this contract was to calculate flood depths with the Depth and Frequency Method on a case by case basis when requested by local governments.

In 1982-1983 there were 12 instances where 100-year flood depths were calculated for local governmental officials to help them in administering their floodplain regulations.

REQUESTS FOR INFORMATION

The Floodplain Information Repository is a service to the State of Illinois. Its importance and usefulness can be measured by the number of requests for information that are answered and by the variety of requestors. During the past contract period (1982-1983), 535 requests for floodplain information were received and answered. This represented a decrease of about 18 requests from the previous contract period, although on a calendar year basis there was an increase. This indicates that the Repository services continue to be well-known. Also, since the National Flood Insurance Program and other floodplain regulatory activities have

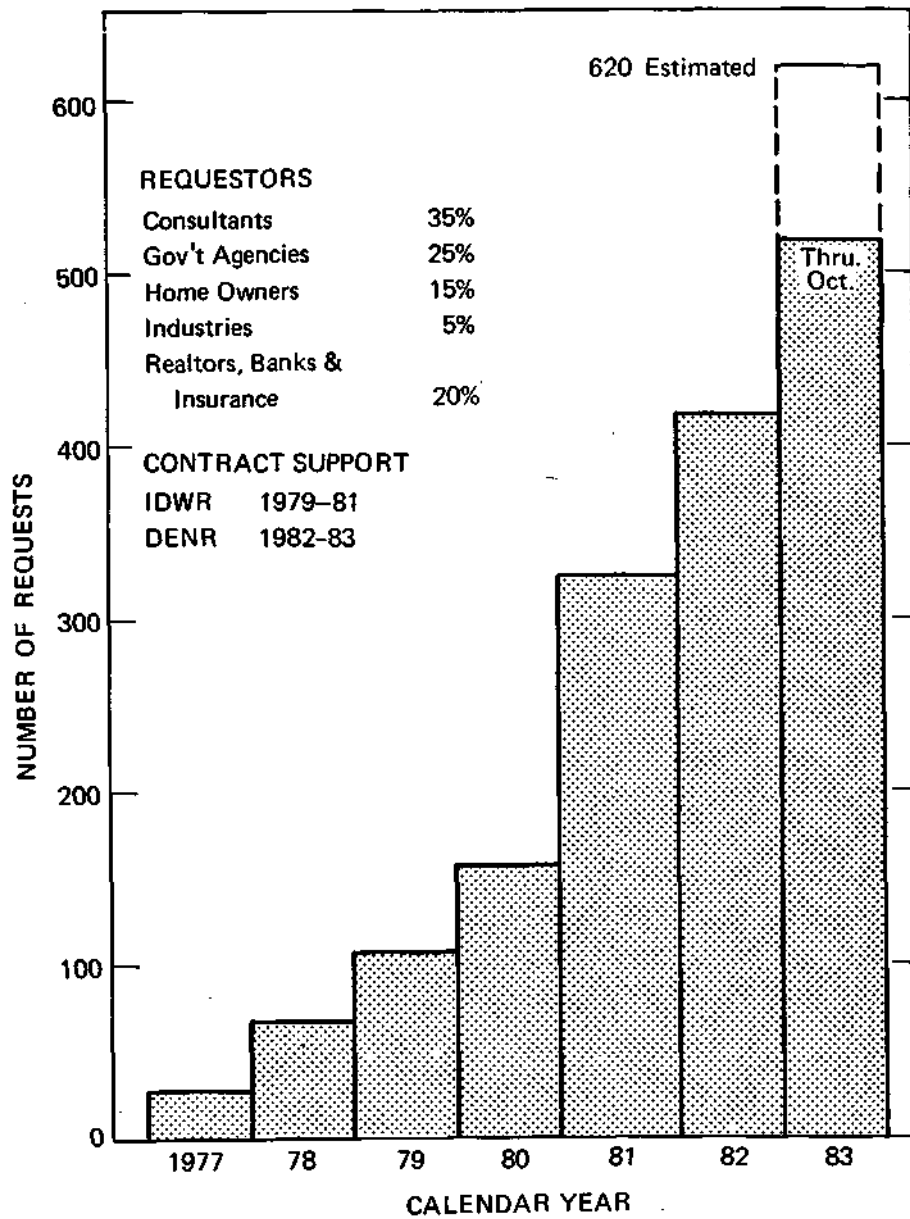


Figure 6. Annual Number of Requests to the Floodplain Information Repository

begun to impact different sectors of the business and government communities, these sectors have in turn relied on the Repository at the ISWS for technical assistance.

The information requests during the contract period are summarized below among these various organizations:

| <u>Requestors</u> | <u>Number</u> |
|---|---------------|
| State Supported Facilities under Executive Order IV | 35 |
| Homeowners | 93 |
| Government Agencies (local, state, federal) | 138 |
| Consulting Engineers | 152 |
| Banks, Insurance Agents, Attorneys, and Realtors | <u>117</u> |
| Total | 535 |

Since the Floodplain Information Repository began in 1975, the annual number of requests has increased each year. The steady growth of this service to the state is evidenced in figure 6, which shows that for calendar year 1983, it is expected that responses will be given to 620 requests, a 47 percent increase from 1982.

The major floods that occurred during 1980, 1981, and 1982 have heightened public awareness of flooding. Part of the increase in requests for floodplain information can probably be attributed to the incidence of recent major flood events. Since there is evidence that this trend in flooding can be expected to continue (Changnon, 1983), it can be expected that the Floodplain Information Repository will continue to receive numerous requests for floodplain information.

REFERENCES .

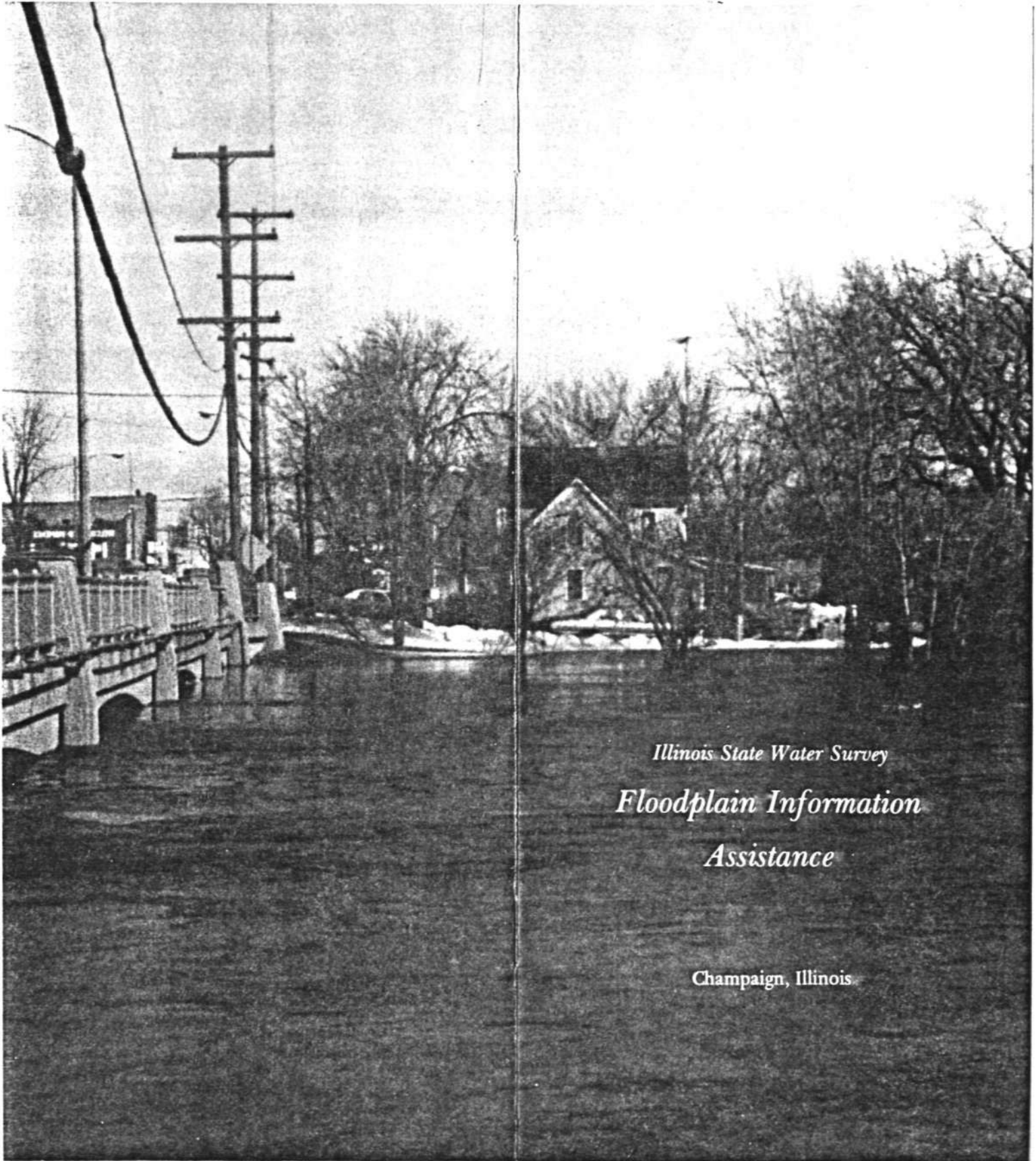
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Illinois State Water Survey
Floodplain Information
Assistance

Champaign, Illinois

INTRODUCTION

A floodplain is defined as that land adjacent to a body of water which acts or may act hereafter as an additional channel and storage space to hold excess streamflows caused by heavy rains and/or melting snow. People's encroachment onto floodplains reduces the flood-carrying capacity of the floodplains, increases flood heights, and extends the flood hazard to areas beyond the encroachment itself. Of the 20,000 communities in the United States identified as having flood hazards, 711 are located in Illinois. The amount most often given as the average annual cost of flood damage in Illinois is \$100 million, although in recent years damage to agricultural, residential, public, and commercial property has exceeded this amount.

The State of Illinois has been very active in promoting and guiding activities for reducing nonstructural flood damage. A 1975 report by the Governor's Task Force on Flood Control presented a detailed assessment of the state's flood-related programs. In a section on the State of Illinois' Flood Damage Prevention Program, this report noted that the Illinois State Water Survey had been given responsibility for maintaining a repository of floodplain information. This repository was to include studies, maps, profiles, and other pertinent information so that all flood hazard information would be compiled at one central location.

In cooperation with the Illinois Department of Energy and Natural Resources and the Illinois Department of Transportation, Division of Water Resources (IDOT-DWR), the Illinois State Water Survey (ISWS) provides an important service for

Prepared in cooperation with
the Illinois Department of
Energy and Natural Resources

May 1983

local building and zoning officials, engineers, architects, planners, lending institutions, insurance agents, realtors, appraisers, and homeowners. This brochure describes the Illinois Floodplain Information Repository and outlines how each of these user groups can avail themselves of this service, relevant to their individual needs. A detailed explanation of these and other ISWS floodplain services is available by writing to ISWS or by calling (217) 333-0447.

SERVICES PROVIDED TO USER GROUPS BY THE ILLINOIS FLOODPLAIN INFORMATION REPOSITORY

A. Local Building and Zoning Officials

Reviews of Regulatory Flood Data

When floodplain data are to be used for local regulation of construction and development, it is vital that local officials use the best data available. To assist them, ISWS provides three floodplain data review services.

1. Flood Insurance Study Reviews

All flood insurance studies that produce new detailed information go through the State Review Procedure in order to be certified by the Illinois Department of Transportation, Division of Water Resources (IDOT-DWR). The ISWS role is to review the 100-year flood discharges in accordance with the State Standard Method (SSM). The SSM compares the discharges with discharges compiled from a regression equation prepared by the U.S. Geological Survey.

IDOT-DWR compares the reported profiles and floodways with other studies and coordinates study reviews by local officials. The end result is that all flood insurance studies have their basic data double-checked and are consistent with other regulatory and 100-year flood studies. Studies that successfully make it through the State Review Procedure are certified by IDOT-DWR. Certification puts a study at the top of the reliability ranking used by ISWS.

2. Reviews of Local Regulatory Studies

For many areas, the only items of floodplain information provided by the National Flood Insurance Program (NFIP) are Flood Hazard Boundary Maps or approximate flood insurance study data. However, other agencies or private firms may have prepared flood studies for such areas. Section 1910.3(b)(4) of the NFIP *Rules and Regulations* (24 CFR, Section 1909-1910) requires local governments to obtain, review, and utilize such studies in their floodplain regulations.

Upon receipt of a flood study, ISWS will issue a letter stating whether the study is the best one available to the Repository and whether it should be used to meet the NFIP requirements.

There are three other types of local regulatory studies that ISWS will review:

- a. Studies done to comply with Section 1910.3(b)(3) of the NFIP *Rules and Regulations* (requires flood elevation studies for developments larger than 5 acres).

- b. Studies done to comply with Section 1910.3(c)(10) of the NFIP *Rules and Regulations* (requires encroachment [floodway] studies for new construction when a flood insurance study provides only flood elevation).
- c. Studies done to appeal a Flood Hazard Boundary Map or flood insurance study. ISWS will tell the requestor whether the appeal study has better data than those which went into the NFIP map.

3. *Provision of Base Flood Elevation Protection Standards*

ISWS will provide base flood (100-year) elevations from existing information. Where detailed floodplain data are not available on a case by case basis, ISWS will instead provide a 100-year flood depth.

B. Engineers, Architects, and Planners

Flood Elevations, Flow Data, Maps, and Reports

Before beginning a project near riverine areas, a determination must be made whether the area of interest is floodprone and to what extent. For example, permits issued by the Illinois Environmental Protection Agency require that water and wastewater treatment plants, hazardous waste sites, landfills, etc., be protected from the 100-year flood.

Cross Sections and Hydraulic Model Data from Flood Insurance Studies

Flood insurance studies have been done for more than 450 Illinois communities. When projects are planned on those streams that

have been studied, it is important to have access to the engineering hydrologic and hydraulic calculations used to produce the detailed flood elevations in those studies. ISWS is accumulating these data as they become available from the Federal Emergency Management Agency.

C. Lending Institutions

Flood Insurance Maps and Technical Assistance for Proper and Timely Location Determinations

In communities that have joined the National Flood Insurance Program (NFIP), an NFIP flood insurance policy is mandatory for all federal and commercial loans for buildings located in Special Flood Hazard Areas. ISWS can aid banks in obtaining maps and technical assistance regarding floodplains.

D. Insurance Agents

Assistance in Determining Accurate Zone Ratings

Flood insurance premiums are based on the flood zone information shown on Flood Hazard Boundary Maps and Flood Insurance Rate Maps. ISWS can aid insurance companies in obtaining these maps and interpreting them.

E. Realtors, Appraisers, and Homeowners

Flood Hazard Information

Whether someone is appraising, selling, or buying property, ISWS can provide objective and current information regarding flood hazards from studies and maps on file.

HOW THE ILLINOIS FLOODPLAIN INFORMATION REPOSITORY OPERATES

A. Data Entered

The Repository is a library of engineering studies and maps done on Illinois rivers. Currently there are more than 950 federal, state, and private studies at ISWS. The following information about each study is on computer file:

- Title of report
- Author
- Type of report (flood insurance study, flood protection plan, etc.)
- Date of report
- Location of report (if not at ISWS)
- Whether the discharges are certified by IDOT-DWR
- Number of streams and tributaries studied

For each stream or tributary in the reports, the following information is entered into the computer file:

- EPA stream code
- Stream name
- County
- USGS hydrologic unit number
- River mile limit of study
- Method of establishing profile
- Reliability ranking (see below)

B. How It Works

A computer program has been developed to cross-reference all of these items of information. Therefore, if an engineer or local official

wants to know what studies have been done on a certain stream, ISWS can produce a bibliography of the appropriate reports.

Any agency that has produced a floodplain study is requested to contribute to the Repository. If a copy of the report cannot be spared, ISWS will provide Data Entry Forms to be filled out by the author.

C. Reliability Ranking

Some studies are prepared by more detailed methods and are reviewed closely by local and state officials. When two reports have been made on the same stream, the report that has used the more reliable methods is more appropriate for floodplain regulations. Therefore, when a report is entered into the file, ISWS assigns a reliability ranking to the 100-year flood elevation data as follows:

1. *State Certified Data*: Elevation data prepared for a Flood Insurance Study or IDOT-DWR Floodplain Regulations. These elevations are based on detailed cross-sectional information and a backwater analysis. They have undergone extensive review by state and local officials.
2. *Detailed Data Prepared for a Federal or State Agency*: Elevation data prepared with detailed cross-sectional information and a backwater analysis but not certified by IDOT-DWR.
3. *Other Detailed Data*: Elevations based on detailed cross-sectional information and a backwater analysis but prepared for some other organization.

4. *Adjusted Flood of Record:* Elevations derived from field observations and/or historical flood elevations. This type of study uses engineering judgment to develop 100-year flood data.
5. *Flood of Record:* Elevations taken from high water marks. This type of report makes no attempt to compute the 100-year flood.

If the Repository has no studies for a stream, the requestor is advised to try one of two other sources:

6. *IDOT Bridge Computations:* Calculations done in order to receive an IDOT-DWR Work in Water Permit. The information should be available for almost every bridge built in the last 20 years. Requests should be sent to:

**Illinois Department of Transportation
Division of Water Resources
Floodplain Management Section
2300 South Dirksen Parkway
Springfield, IL 62764
(217)782-3862**

7. *Depth and Frequency of Floods in Illinois:* This manual, prepared by the U.S. Geological Survey, presents a method for estimating flood depths on rural streams flowing under natural conditions (no bridges, levees, ice jams, etc.). ISWS will send information on this technique to requestors.

State Water Survey Division

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