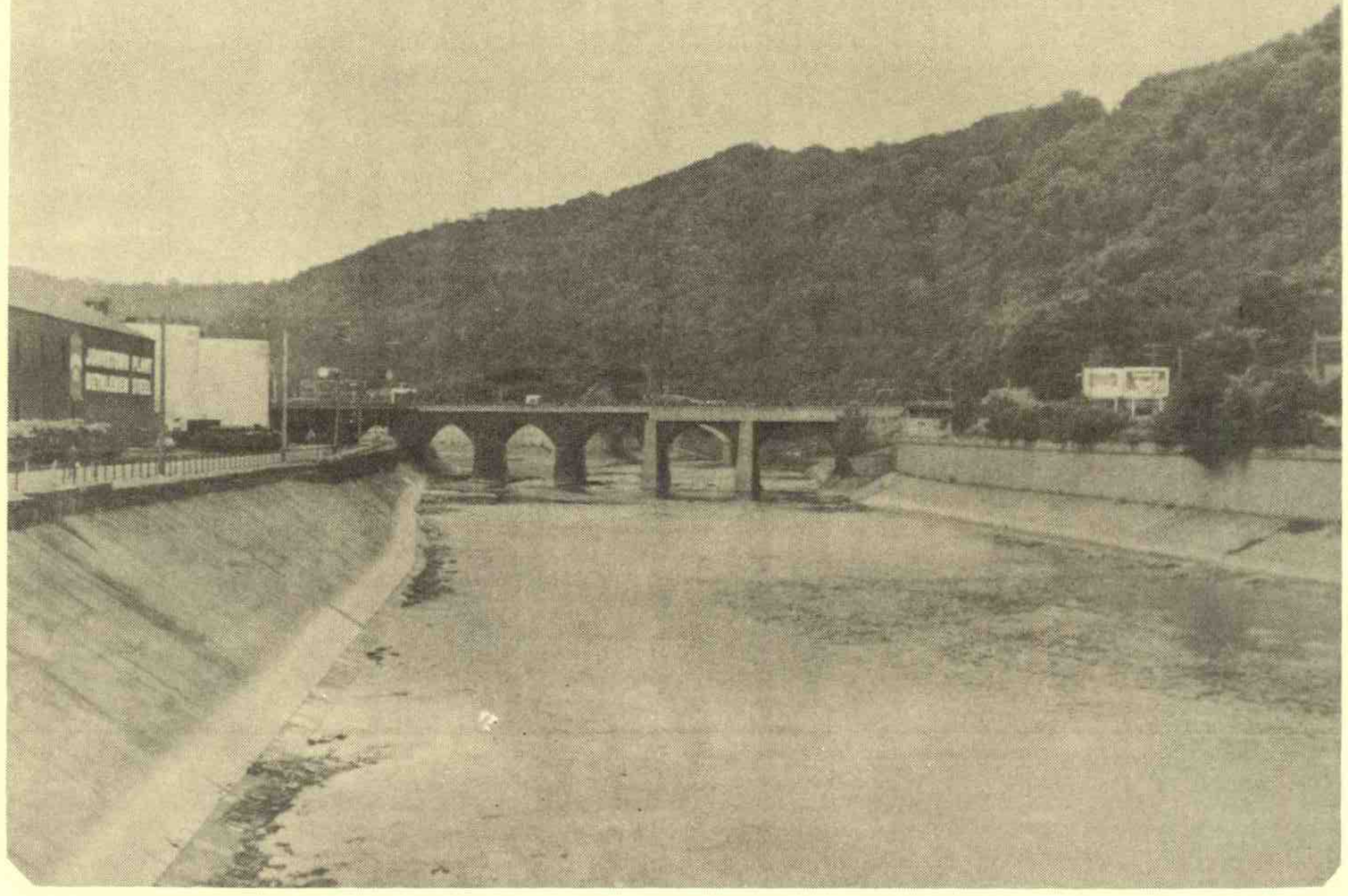
REPORT OF THE FLASH FLOOD DRILL FOR THE PENNSYLVANIA COUNTIES OF CAMBRIA, INDIANA, SOMERSET, AND WESTMORELAND



JOHNSTOWN, PENNSYLVANIA

OCTOBER 5-6, 1978

ARTMENT OF COMMERCE, NOAA
Weather Service
ration With:
MONWEALTH OF PENNSYLVANIA
ncil Of Civil Defense

REPORT OF THE FLASH FLOOD DRILL FOR THE PENNSYLVANIA COUNTIES OF CAMBRIA, INDIANA, SOMERSET, AND WESTMORELAND

Edited By
Gary L. Charson, Hydrologist
Ohio River Forecast Center
October 1978

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION
NATIONAL WEATHER SERVICE, EASTERN REGION

This report could not have been put together without the assistance of Mr. George Schielein, Meteorologist-in-Charge, Weather Service Forecast Office, Pittsburgh; Mr. Dick Lamison, Operations Officer, Pennsylvania State Council of Civil Defense; Mr. Dean Braatz, Flash Flood Hydrologist, Ohio River Forecast Center; Mr. Bill Long, Flash Flood Consultant, Pennsylvania State Council of Civil Defense; and Mr. David Sisk, Flash Flood Coordinator, Weather Service Forecast Office, Pittsburgh.

A special thanks to Mr. Aldo Angelo, Hydrologist, Ohio River Forecast Center for the excellent photographs he took at the drill.

Last, but definitely not least, kudos to my super editorial assistant, Mrs. Betty Knapp.

Gary L. Chauson

The Editor

FOREWORD

The flash flood has become responsible for most of the loss of life in Pennsylvania due to stream flooding. Rapidly rising streams usually occur near centers of heavy storms. These are the same areas in which people are living, working and camping to an extent never experienced before. It is seldom possible for timely flash flood warnings to be issued by the National Weather Service River Forecast Centers, but where cooperative measures taken by county/local agencies are induced, successful issuance of warnings have occurred. Therefore, the answer to the problem lies in the establishment of a local flash flood warning system.

The State Council of Civil Defense, Commonwealth of Pennsylvania, in conjunction with the National Weather Service, is making strenuous efforts to establish a local flash flood warning system in each of the 67 counties in the Commonwealth. The systems being developed under the guidance of County Civil Defense Directors are well underway. Their status range from inception to completion in some cases. Therefore, the training exercise conducted 5-6 October for the four counties of Cambria, Indiana, Somerset and Westmoreland, and the City of Johnstown was timely. The results of the exercise proved the thesis that cooperative measures improve abilities to minimize the loss of life.

Hopefully, the exercise can be established as a model to be used by other counties and states as a training vehicle. The critique notes derived from our exercise may be beneficial to others in the development of systems and the improvement thereto, if for nothing else than avoiding pitfalls.

Oran K. Henderson
Director of Civil Defense

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INTRODUCTION - George Schielein, MIC, WSFO, PIT

The development of County Local Flash Flood Warning Systems in western Pennsylvania was accelerated during the past year by a National Weather Service grant to the Commonwealth of Pennsylvania through the State Council of Civil Defense. The first such Flash Flood Warning Unit in western Pennsylvania dates to 1972 when Westmoreland County began issuing rain gages and set up a method to inform the public of impending flood dangers. These systems have proven effective in providing timely warning for the smaller streams and creeks.

The goal of the Commonwealth of Pennsylvania and National Weather Service is to have Local Flash Flood Warning Systems in each of the 67 counties in the Commonwealth. A strong effort is under way to establish these systems under the guidance and direction of the County Civil Defense.

These systems are begun with an initial visit by the National Weather Service and/or the State Council of Civil Defense with the county. The county is then asked to sign a Memorandum of Understanding with the National Weather Service. Then the county is studied to determine those creeks and streams which have a history of flash floods or are suspect for future flash flooding. Rain gage locations are selected in those affected basins and gages furnished to the county. These rain gages are given to volunteer observers who are expected to call data into the county warning unit. The basin is then surveyed for possible stream staff gages with volunteer observers again expected to call the county warning unit when flooding is possible. The National Weather Service will furnish the gages but installation is a county responsibility.

An organization headed by a Flash Flood Coordinator (and hopefully two trained assistants) is needed at this point by the Flash Flood Warning Unit. It is the responsibility of the coordinator to develop the necessary volunteer staff to help collect rainfall and stream data, and then use flash flood manuals containing forecast procedures furnished by the National Weather Service. The manuals are needed to make decisions as to the degree of flooding in a heavy rain situation. Records are needed to evaluate the forecasting procedure after flood events. Reliable methods of communications are needed to cover all possible emergency situations.

The four counties of Cambria, Indiana, Somerset and Westmoreland taking part during this drill on October 5-6, 1978, had advanced to the point where an evaluation of these systems was possible. The counties are in the drainage of the Conemaugh River Basin. Therefore, the data needed to be shared by downstream counties. It was an ideal situation to hold a drill to test the warning unit in each county plus study inter-county communication. The drill was a success. Small problem areas naturally surfaced so each warning unit can now be made stronger and more responsive from this experience.

Our point in preparing this critique is to stimulate other county areas to hold drills of their Flash Flood Warning Units once in place. As both a hydrologist and meteorologist, it is apparent to me, after being a part of this particular drill that cooperation at all levels of government is needed to stay abreast of any flood situation. The National Weather Service and State Civil Defense staffs and all parties need to stay in touch as long as communications allow. The cooperation at all levels during this drill was excellent. I wish to commend all those involved with this drill for a job well done.

VOLUNTEER RAIN/RIVER COUNTY-NATIONAL WEATHER SERVICE

FLASH FLOOD NETWORK

by Mr. David Sisk, Flash Flood Coordinator,
Weather Service Forecast Office
Pittsburgh, Pennsylvania

Work was initiated for this four-county Flash Floor Drill early this year.

Representatives of the National Weather Service and also of the Western Area Civil Defense visited jointly local County Directors of those areas prone to Flash Flooding. The new Flash Flood Program was explained and thoroughly discussed on these visits. County Commissioners were also visited. Memorandums of understanding were signed by the involved parties.

The National Weather Service prepared individualized Flash Flood Manuals after a careful review with each County Director. Concurrently a detailed analysis of the county's Flash Flooding problems was made.

The uniqueness of each county's topography and basin watershed flooding problems required individually tailored solutions. Rain gages were scattered throughout in a few counties to determine an average county rainfall. The more common rain gage placement was made to provide adequate coverage from headwaters downstream through lower reaches of a basin watershed. Another consideration was to provide, if possible, more than adequate rain gage locations in the various counties. This would help insure against missing localized heavy rainfall if observers were away.

The National Weather Service representatives, in cooperation with the local county Civil Defense Director, then selected numerous locations

for rain gage sites in the county. The responsibility of securing observers in areas of selected sites was then given to the County Director.

The local National Weather Service representatives supplied the County with handouts of rain gages (see illustrations), rain gage observer instruction sheets, Form E-16 (see example), booklet forms for daily measurements, and franked government envelopes.

Site surveys for stream gages were conducted during the summer of 1978. The State Council of Civil Defense then was able to order staff gages thanks to the National Weather Service grant.

The National Weather Service also supplied additional rain gages through October 1978. Henceforth the State Council of Civil Defense has this responsibility via the grant.

After the County Director secured an adequate number of volunteer observers an instruction meeting was held. The purpose of these meetings was to meet, discuss with, and answer any questions of the observers.

The observers were advised of the extreme importance they played in this program. It was stressed that they are the first link in the early local alert and warning program of Flash Flooding caused by intense heavy rains. Most observers displayed both a dedicated and keen interest in this program, and pride in that they would be part of it.

An instruction period was conducted. The observers also were shown graphically how, via the county topography and watershed basins, they were selected. The importance of their measurement reports was stressed again.

Toll free and collect call numbers were provided by the County to their individual observers. The importance of phoning into the County and the National Weather Service immediately reports of heavy rains of short duration and total rainfall was pointed out again.

A Completion Certificate was forwarded via the County Director to each of his observers.

The National Weather Service representative examined, with the County Director, each gage site to select the best possible exposure of the gage.

The reporting and communication of rainfall data in heavy rain situations consist of observers' reports (initially) and subsequent ones to the local County Director (to the National Weather Service if County cannot be reached) and then the reports are relayed to the local National Weather Service office. The National Weather Service then can provide further meteorological, hydrological, radar, and Satellite expertise. It can also update with statements, watches, and warnings as the situation dictates.

The observer provides an "Early Alert" to need to know agencies to act on a plan before communications fail.

At the end of each month the monthly rainfall observing form (E-16) is forwarded to the County Civil Defense Office via a government envelope. Then a copy is made of the form and sent to the National Weather Service for further research and evaluation to improve the forecast graph.

WS FORM E-16 (12-72)
PRES. BY WSOM E-41

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.
NATIONAL WEATHER SERVICE

RECORD OF RAINFALL REPORTER

STATION: Whitegate PA
RIVER DRAINAGE: County
TYPE OF RAINGAGE: 11" CLEAR-VUE
MONTH: Aug | YEAR: 78 | TIME OF OBSERVATION: 07-08 AM LST

DATE	PRECIPITATION BEGAN A	ENDED B	24-HOUR AMOUNT C	CHARACTER D	REMARKS (Special observations, etc.) E
1			0.12		
2			T		T = TRACE of PRECIP (less than .01)
3			T		
4			0		
5			0		
6			M		M = MISSING due to VACATION,
7			M		SICKNESS ETC.
8			0.26		
9			2.91		1.52" 08/7A-4p ; 2.52" 08/6-7p
10			0		REPORT PHONED TO CD/NWS
11			0.59		
12			0.98		
13			T		
14			0		
15			0.09		
16			0		
17			0		
18			0.01		
19			M		
20			0.77		
21			0.43		1/4" DIA. HAIL AROUND 20/8p
22			0		
23			1.36		1.25" 22/5-8p PHONED TO CD
24			0		
25			T		
26			0.15		
27			0		
28			4.91		Hvy RAINS 3.50" 27/4-6p AND
29			0		JOHNSON CREEK flooded AT 7p
30			0		REPORT phoned TO CD/NWS.
31			0		

NOTE: Send this form to Supervising Office monthly.

SUPERVISING OFFICE: Total 12.58"

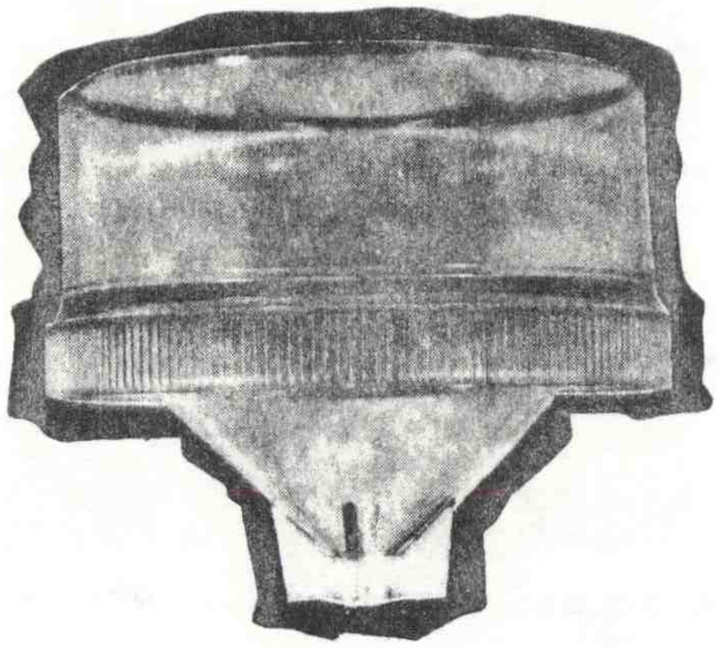
REPORTER: YOUR NAME

WS FORM E-16 (12-72)

U.S. GOV. PRINTING OFFICE: 1977—767-080

OBSERVATION for Aug 1 is 24hrs from 31 July 7A - 1 Aug 7A

A



B

C

10-Inch Plastic Rain Gage

A. Outside Cylinder

B. Collector Ring

C. Inner Measuring Tube

A LOCAL FLASH FLOOD WARNING SYSTEM

By

Dean T. Braatz, Flash Flood Hydrologist
Ohio River Forecast Center
Cincinnati, Ohio

The development of a Local Flash Flood Warning System Centers around the organizational structure of communication needs. Each county will have unique lines of communication but most of all systems will follow closely to the organizational chart in Figure 1.

Rainfall and stream observers are the backbone of the system as they supply the basic information needed to make the system function. They call their reports to a central recieving point such as an Emergency Operating Center in the county. The EOC then notifies the flood coordinator. The role of the flood coordinator is to tabulate the rainfall and stream data and use this information as input to a forecasting method furnished by the National Weather Service. These forecasting methods can vary from graphs and tables to more complicated procedures. They are usually contained in a manual along with other information such as listed in Figure 2. The manual is the chief tool used by the flood coordinator to arrive at a decision as to the degree of flooding based on the rainfall reported and any additional expected rainfall.

At this point, time permitting, the flood coordinator is encouraged to contact the National Weather Service Office having warning responsibility for that county. This communication allows the National Weather Service access to additional rainfall data and gives the flood coordinator an opportunity

to ask the meteorologist what the current weather situation is as indicated by other reports, radar, and satellite. Also the meteorologist can express an opinion to the flood coordinator on the intensity, coverage and duration, of any heavy rains that might affect the county in question. A new decision is now possible, as to any additional expected rainfall, which the flood coordinator can use to adjust any previous decision concerning the degree of flooding.

This step of guidance and coordination is a most important one and can not be emphasized enough. The importance of communicating between the flood coordinator and the meteorologist results in both parties being informed and aware of what is happening now and could happen shortly. Both parties have a responsibility to the other for cooperating fully.

Once a firm decision is made, as to the degree of flooding expected, the county civil defense is informed. If the National Weather Service has issued a Flash Flood Warning, the Civil Defense puts into motion its emergency plans. However, if the National Weather Service has no Flash Flood Warning issued, then the County Civil Defense may issue a warning for their county or a portion thereof, such as: "Tiny County Civil Defense Has Issued a Flash Flood Warning Until 10 AM for The Lazy Creek Community". Then, as soon as possible, notify the National Weather Service that County Civil Defense has issued a Flash Flood Warning. Warnings need to be disseminated quickly via radio and TV, police and fire networks, local radio clubs, etc.

Activity now begins to involve the entire community. If people are to be evacuated only those persons affected should be notified and gotten to

higher ground. Doors will be opened with a greeting of "Hi, I am from the County Civil Defense. Lazy Creek is expected to be out of its banks in 30 minutes and may flood this property, so please be advised to move to higher ground now". Through earlier educational efforts, feedback from persons in the affected area begin to arrive at the CD office.

The flood coordinator uses this type of information to follow how well the forecast of expected flooding is developing. During the storm additional reports of rainfall and stream data are received at the EOC. The Flood Warning Unit is constantly busy following the progress of the storm and from time to time makes contact with the National Weather Service for up-dates on the weather situation. County Civil Defense is in contact with the State Civil Defense for assistance and to pass on needed information.

Out along the creek bank campers must be informed of impending danger and need to be advised to seek higher ground. By all means have people stay out of cars. People drown unnecessarily from driving into swift waters. News of the flood has spread fast throughout the Lazy Creek community. Inter-action among neighbors, family and friends spreads the word. The lead time is important. On fast-rising creeks action must be quick and accurate on the part of the flood coordinator and civil defense.

The flood waters reach a crest. The rainfall has stopped and shortly people can return to their homes and businesses. Once the creek has re-turned to its banks and the threat of additional rains is over, the message of "all Clear" should be issued by the County Civil Defense coordinating with the National Weather Service.

The flood coordinator during the course of the flood needs to be collecting

and holding rainfall and stream data so a post-storm evaluation can be made. The forecast procedures may need adjusting. Data is needed so a review of the procedure can take place. After each flood event look at the flow of data and information so the Flood Warning Unit can become more organized and function more efficiently.

A Local Flash Flood Warning System will need constant attention if it will be ready to act in a flood emergency. One way to accomplish this is to hold a drill. To become efficient at anything we are taught in school, drill it over and over. In designing a flash flood drill there are several ingredients necessary to keep in mind. (See Fig. 3.) What part of the county will the drill cover? How much rainfall will be needed in a design storm to produce a flash flood for the drill? Who will participate and how long will the drill last? Has the drill been coordinated with the National Weather Service, the State Civil Defense, and other local agencies? Have the participants keep a log of their activities so a critique of the drill is possible.

After the drill call a meeting to critique the drill event. Figure 4 shows a list of some ideas you will want to review. Keep in mind the purpose of the drill is to study the efficiency of your Flash Flood Warning Unit. Drills bring people close together in a working relationship so new friendships develop. Keep these informal contacts alive with family events from time to time. Be innovative to keep your Local Flash Flood Warning System active and ready to serve the community.

The Flash Flood Drill held on October 6, 1978, by the Counties of Cambria, Indiana, Somerset, and Westmoreland, PA, was also successful in reviewing

inter-county communication. If your county must rely on rainfall and stream data from a neighboring county, ask for their cooperation.

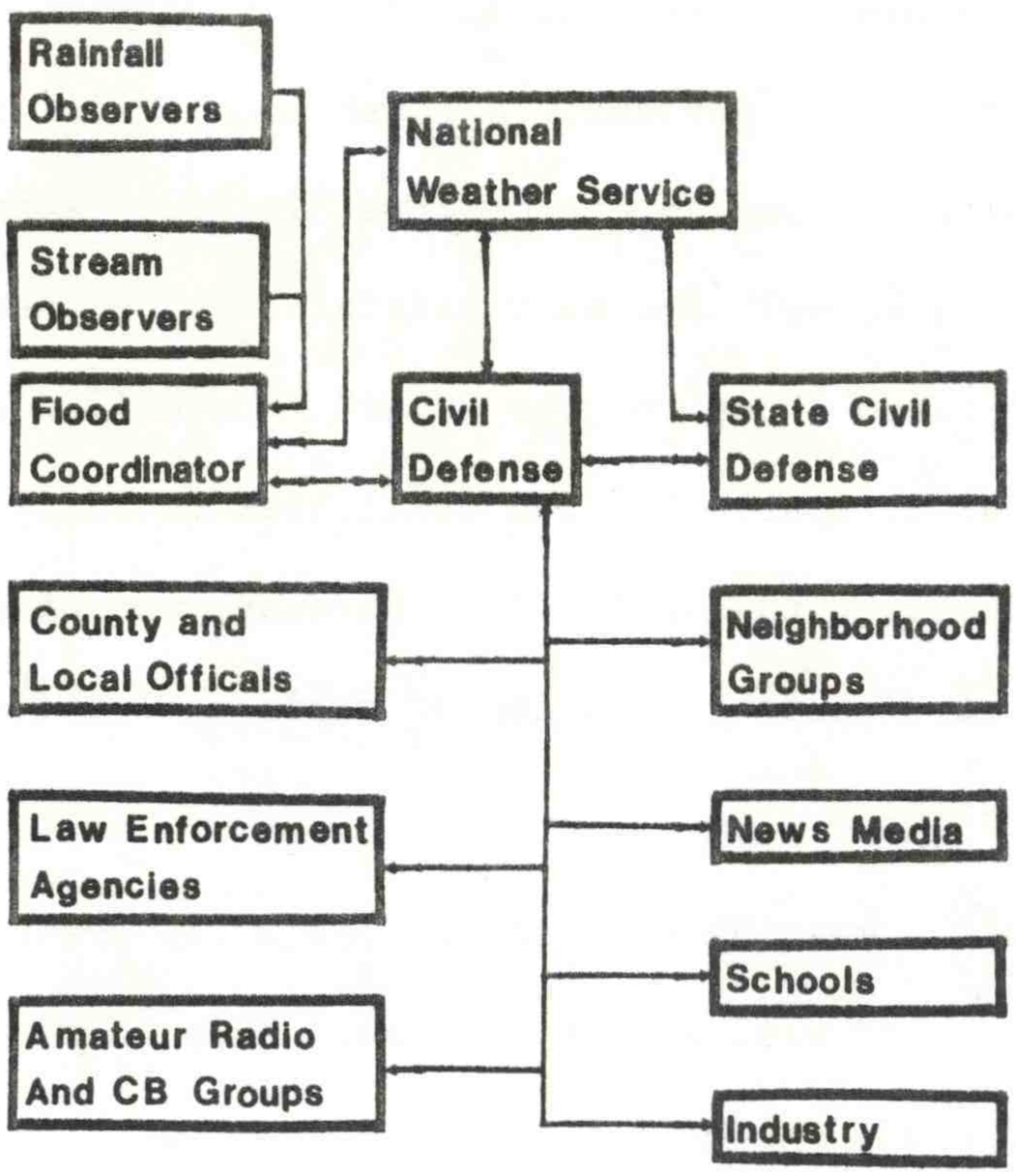


FIGURE 1

CONTENTS OF A FLASH FLOOD MANUAL

1. Purpose
2. Plan
3. Organization
4. Climatology
5. Area Description & Problem Streams
6. Instructions For Rainfall Observers
7. List Of Rainfall & Stream Observers
8. Instructions For Flash Flood Coordinator
9. Graphs And/Or Tables
10. Example Flood Situations
11. List Of Past Floods
12. List Of Support Agencies
13. Warning List
14. List Of Flood Warning Unit Staff
15. Map Of Warning Area

FIGURE 2

INGREDIENTS OF A FLASH FLOOD DRILL

1. Location
2. Design Storm
3. Participation
4. Time Limit
5. Coordination
6. Log Drill Activities
7. Critique Drill

FIGURE 3

RESULTS OF A FLASH FLOOD DRILL

1. Communications
2. Cooperation
3. Data Management
4. Timeliness Of Warnings
5. Use Of Information

FIGURE 4

STATE COUNCIL OF CIVIL DEFENSE
TRANSPORTATION AND SAFETY BUILDING
HARRISBURG, PENNSYLVANIA

September 6, 1978

SUBJECT: Flash Flood Drill

TO : Elected Officials and Civil Defense Directors

A drill will be held in early October, 1978 to test the effectiveness of Flash Flood Self-Help Programs. The test will cover Cambria, Indiana, Somerset and Westmoreland Counties. It is being sponsored jointly by the National Weather Service and the Pennsylvania State Council of Civil Defense. The program will consist of an afternoon session on October 5, 1978 at the Johnstown Armory, where each participating county will present a (brief) review of their Flash Flood Program. This could include the history of the county's Flash Flood Program, flood problem areas and such things as existing communications network, how it works and future needs and problems that are foreseen.

An agenda for the entire program is attached. The actual drill will occur from 8:45 A.M. to 11:00 A.M., on October 6, 1978. Each county will operate from its own base of operations or Emergency Operations Center. A storm that actually occurred about sixty years ago over the Ohio Valley will be used as the basic scenario for the drill. The rainfall and river reports to be made available will be supplied to the reporting network observers a few days before the drill. They will be told what and when to report. As the rainfall reports are collected, the flash flood coordinator and other assistants in the county will prepare forecasts with their existing procedures, prepare flood statements for release and take what measures they would under an actual flood emergency. Written statements should be prepared and a full chronological record of events that occurred should be kept. The degree of public participation is to be determined by each participating political subdivision.

Prior arrangements should be made with action agencies in various communities by the flash flood coordinator for the county, so they can execute a smooth plan of operation with a minimum disruption of routine daily operations in the community or under alarm in case flood figures from the practice are heard by the public. Any public announcements should be preceded and concluded with the statement "this is a test".

We believe that this is likely one of the largest and best planned flash flood drills that has been held so far in the nation. Already many man-hours have been expended in the organization of it.

The storm producing the flood will be of 24-hours duration, but is run through in two hours. Fifteen minutes of drill time will be equal to three hours of actual time. The storm used is not an unusual or freak one, but one that could occur in any part of Pennsylvania during most any season of a year.

Everyone will return to the Johnstown Armory for an afternoon recap of the drill on October 6. Each coordinator should be prepared to give a short critique of the exercise, giving all the things that worked well along with any problems that did occur, hopefully few. A final published joint report will be made by the National Weather Service and Civil Defense by November 30, 1978. The critique and final report should provide a solid basis for overall improvements in emergency measures and procedures.

Here is a brief description of each agency's responsibility:

STATE COUNCIL OF CIVIL DEFENSE AND LOCAL CIVIL DEFENSE DIRECTORS

1. Help design the storm and disseminate it to rainfall observers.

2. Assist counties during the drill.

3. Help coordinate getting needed data across county boundaries.

4. Co-sponsor the drill.

5. Coordinate county drill plans.

6. Invitations to attend -- government and county officials, etc.

7. Evaluate the drill.

8. Update emergency plans and procedures.

9. Emergency communications.

NATIONAL WEATHER SERVICE

1. Help design the storm and prepare data for mailing to observers.

2. Assist counties during the drill.

3. Prepare meteorological support for drill and assistance from Weather Service Forecast Office during drill.

4. Co-sponsor the drill.

5. Evaluate the drill.

COUNTY CIVIL DEFENSE ORGANIZATIONS (Cambria, Indiana, Somerset and Westmoreland)

1. Coordinate the dissemination of data across county boundaries.

2. During flood drill, collect data and issue warnings.

3. Keep a log of the full operation of the drill.

4. Some operations that could be planned before and executed during the drill:

   a. Emergency staff operations to include direction and coordination
   b. Closing streets and roads
   c. Neighborhood shelters
   d. Evacuations
   e. Emergency communications
   f. Testing of emergency plans and procedures

5. Coordinate forecasts and obtain rainfall forecasts from the National Weather Service during the drill.

CITY OF JOHNSTOWN AND OTHER CITIES AND BOROUGHS THAT MIGHT WANT TO PARTICIPATE

1. Send flood data to the respective county operation centers and obtain forecast information from them.

2. Some operations that could be planned before and executed during the drill:

   a. Closing streets and roads
   b. Neighborhood shelters
   c. Evacuations
   d. Emergency communications

This drill is planned to provide valuable training for your individual counties. Your full support is requested.

Oran K. Henderson

ORAN K. HENDERSON
Director of Civil Defense
State Council of Civil Defense

George H. Schielein

GEORGE H. SCHIELEIN
Meteorologist-in-Charge
Pittsburgh Weather Forecast Office

Attachment

FLASH FLOOD TRAINING SEMINAR AND DRILL

Pennsylvania Army National Guard Armory
Johnstown Municipal Airport
Johnstown, PA

OCTOBER 5 - 6, 1978

For

Cambria, Indiana, Somerset and Westmoreland Counties, PA
and the City of Johnstown, PA

Sponsored by: State Council of Civil Defense, Commonwealth of Pennsylvania and the National Weather Service.

PROGRAM

Program Committee:

Dean T. Braatz, Chairman	NWS, ORFC, Cincinnati, OH
George Schielein	NWS, WSFO, Pittsburgh, PA
Charles Ryland	NWS, WSFO, Pittsburgh, PA
Dave Sisk	NWS, WSFO, Pittsburgh, PA
Ralph Folino	NWS, WSFO, Pittsburgh, PA
Bill Long	SCCD, Pittsburgh, PA
Elmer Schenk	Cambria County CD, Ebensburg, PA

Local Arrangements Committee:

Elmer Schenk	Cambria County CD, Ebensburg, PA
Barbara Mulvehill	City of Johnstown, PA
Richard Fromback	Cambria County, Ebensburg, PA

OCTOBER 5, THURSDAY

Session Chairman - J. Robert Stimmel

11:30 - 12:30 PM	Registration
12:30 - 1:10 PM	Welcome and Opening Remarks
	Charles R. Tomljanovic, Mayor City of Johnstown, PA
	T. T. Metzger, President Cambria County Commission
	Rep. John P. Murtha 12th Congressional District of PA

1:10 - 1:15 PM	Presentations
1:15 - 1:30 PM	Flash Flood Goals of the Commonwealth of Pennsylvania. Paul Y. White, Western Area Director, SCCD, Indiana, PA
1:30 - 1:45 PM	National Flash Flood Program. John Monro, Program Leader for Flash Floods, Office of Hydrology, NWS, Washington, D.C.
1:45 - 2:00 PM	Improvements In Warnings and Dissemination. George Schielein, Meteorologist In Charge, NWS, WSFO, Pittsburgh, PA
2:00 - 2:15 PM	Volunteer Rainfall Observer Networks and Communications. David Sisk, Meteorologist, Flash Flood Coordinator, NWS, WSFO, Pittsburgh, PA
2:15 - 2:30 PM	Local Flash Flood Warning Systems. Dean T. Braatz, Flash Flood Hydrologist, Ohio River Forecast Center, Cincinnati, OH
2:30 - 2:45 PM	Break

Session Chairman - Paul Y. White

2:45 - 3:00 PM	The Corps Role and Assistance Available Under Flash Flood Conditions. C. Dayle Miller, Emergency Operations Manager, U. S. Army Engineer District, Pittsburgh, PA
3:00 - 3:15 PM	Streamflow Data and Stations. David Richards, Supervisory Hydrologist, U. S. Geological Survey, Pittsburgh, PA

3:15 - 4:10 PM	Reports on Local Flash Flood Programs. Cambria County, PA Elmer Schenk, Director Cambria County Civil Defense Indiana County, PA Roger Stivison, Director Indiana County Civil Defense Somerset County, PA James Welsh, Executive Director Somerset County Civil Defense Westmoreland County, PA James K. Laffey, Executive Director Office of Civil Preparedness Elwood Leslie, Executive Director Westmoreland Conservation District City of Johnstown, PA Jack Painter, Director Johnstown Civil Defense
4:10 - 4:25 PM	Flash Flood Drill Briefing. Bill Long, Consultant, SCCD, Pittsburgh, PA
4:25 - 4:30 PM	Closing Remarks
5:30 - 6:30 PM	No Host Cocktail Hour, Holiday Inn, Johnstown, PA

OCTOBER 6, FRIDAY

FLASH FLOOD DRILL

8:45 - 11:00 AM	Drill session to be held in each of the four counties and the City of Johnstown. (NWS and SCCD overseers will be assigned to each local office.)

Session Chairman - George Schielein

1:30 - 1:35 PM	Opening Remarks

1:35 - 2:15 PM	<u>Community Reports on Flash Flood Drill</u>. Cambria County, PA Elmer Schenk, Director Cambria County Civil Defense Indiana County, PA Roger Stivison, Director Indiana County Civil Defense Somerset County, PA James Welsh, Executive Director Somerset County Civil Defense Westmoreland County, PA James K. Laffey, Executive Director Office of Civil Preparedness Elwood Leslie, Executive Director Westmoreland Conservation District City of Johnstown, PA Jack Painter, Director Johnstown Civil Defense
2:15 - 3:15 PM	<u>General Discussion and Drill Evaluation</u>. Panel members - Paul White, J. Robert Stimmel, Bill Long, Dave Sisk, John Monro and Dean Braatz
3:15 - 3:25 PM	Break
3:25 - 3:45 PM	Flash Flood Movie
3:45 - 4:00 PM	<u>Cooperative Community Efforts In The Flash Flood Program</u>. Charles Ryland, Principal Assistant, NWS, WSFO, Pittsburgh,PA
4:00 - 4:15 PM	<u>Awareness and Permanence of a Community Flash Flood Program</u>. J. Robert Stimmel, Central Area Director, SCCD, Selinsgrove, PA
4:14 - 4:30 PM	Summary and Closing Remarks

STATE COUNCIL OF CIVIL DEFENSE

NEWS RELEASE

For Release: IMMEDIATE
9/29/78

FOR FURTHER INFORMATION, CONTACT:
John Comey, Public Information Officer
Telephone: (717) 783-8150

HARRISBURG - The first multi-county test of the new Flash Flood Self-Help Warning Systems in the nation will be conducted by the State Council of Civil Defense and the National Weather Service on Thursday and Friday, October 5 and 6, in Cambria, Indiana, Somerset and Westmoreland Counties.

The program will include a review of the flash flood programs in each of the four counties on Thursday afternoon October 5 in the 876th National Guard Armory opposite the Johnstown Airport.

"The actual drill will occur from 8:45 a.m. to 11:00 a.m. on Friday, October 6," explained Col. Oran K. Henderson, Director of the State Council of Civil Defense. "Each county will operate its own base of operations or Emergency Operations Center. A storm that actually occurred about 60 years ago over the Ohio Valley will be used as the basic scenario for the drill."

The exercise will be a response to rainfall and river conditions reported throughout the morning by the county flash flood network observers using the same system and procedures that would be implemented in an actual

(more)

severe rain storm.

As the rainfall reports are collected, the flash flood coordinator and other assistants in the county will prepare forecasts with their existing procedures, prepare flood statements for release and take what measures they would under an actual flood emergency.

"The degree of public participation is to be determined by each participating political subdivision," Henderson stated. "This is essentially a proper exercise with the local government's response written rather than actually implemented. However, each community is free to use this test to the degree they feel will best serve their local needs. This could include actual evacuations and other emergency actions in the community."

Henderson explained that the National Weather Service records from the storm in Ohio 60 years ago will be fed into the Emergency Operations Centers through the existing county reporting network as if it were happening at that moment." The storm used is not an unusual or freak one," the State Director added, "but one that could occur in any part of Pennsylvania during most any season of a year."

A four-county review and critique will follow the exercise at the 876th Armory Friday afternoon.

The Flash Flood Self-Help Warning System is a new program funded by the National Weather Service which is being developed in Pennsylvania on a county-by-county basis by the State Council of Civil Defense.

The system is intended to provide the necessary rainfall and river height information which, when reported through the county network observers, will enable local and county officials to accurately determine local existing

conditions and the danger of flooding in that county.

"This moment-by-moment information of actual local conditions is combined with data supplied by the National Weather Service on soil saturation, run-off rates and other complementing factors to enable local government to accurately determine the threat of flash flooding and implement emergency actions when the threat becomes a danger to the community. This National Weather Service report of conditions is updated twice a week to each county and the system that has been developed to combine and evaluate the local information is accurate and not complicated," Henderson stated.

"We recognize that the National Weather Service does a fine job in predicting regional weather potentials but it is unrealistic and dangerous to expect this National Service to be capable of monitoring and predicting conditions for a community or even a county where the conditions for a flash flood are developing." Henderson added, "Each county and community must take every available step to insure its own safety. It is our responsibility at the State level to provide the necessary instruments and assistance in the development of the system. But it is the responsibility of the local and county elected officials to accept this assistance and implement the system."

"The National Weather Service has been designing this Flash Flood Self-Help Warning System for the past year and a half, working directly with all the states in the nation. This will be the first national test of the program on a multi-county level and it is attracting a great deal of attention from across the country."

###

COMMONWEALTH OF PENNSYLVANIA

STATE COUNCIL OF CIVIL DEFENSE

Western Area Office
Indiana University of Pennsylvania
Indiana, Pennsylvania 15701

September 15, 1978

Hon. John H. Dent
House of Representatives
2104 Rayburn Office Bldg.
Washington, D. C. 20515

Dear Congressman:

Enclosed is information pertaining to the October 5-6, 1978 Flash Flood drill to be conducted in Cambria, Indiana, Somerset and Westmoreland Counties. This information has been sent to all political subdivisions in these Counties.

You are cordially invited to participate in the drill.

Sincerely,

Paul Y. White,
Director

PYW:dcd

Encl.

COMMONWEALTH OF PENNSYLVANIA

STATE COUNCIL OF CIVIL DEFENSE

Western Area Office
Indiana University of Pennsylvania
Indiana, Pennsylvania 15701

September 15, 1978

Hon. John P. Murtha
House of Representatives
431 Cannon Office Bldg.
Washington, D. C. 20515

Dear Congressman:

Enclosed is information pertaining to the Flash Flood Drill to be conducted on October 5th & 6th, 1978 in Cambria, Indiana, Somerset and Westmoreland Counties. This information has been sent to the heads of all political subdivisions in the four-County area.

Your participation in this highly important Civil Defense program is deeply appreciated.

Sincerely,

Paul Y. White,
Director

PYW:dcd

Encl.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Federal Building
1000 Liberty Avenue
Pittsburgh, PA 15222
September 20, 1978

DEAR COUNTY OBSERVER:

A drill will be held in early October 1978 to test the effectiveness of your County Local Self-Help Flash Flood Program. This drill will encompass Cambria, Indiana, Somerset and Westmoreland Counties. It is being sponsored jointly by the National Weather Service and the Pennsylvania State Council of Civil Defense. This drill will occur from 8:45 A.M. to 11:00 A.M. on October 6, 1978. A storm that actually occurred about sixty years ago over the Ohio Valley will be used for the drill.

This letter is being sent to inform you about this drill, since you are part of the County Self-Help Flash Flood Program as either a rainfall and/or river observer and since time does not permit a visit to all of you by either the National Weather Service or your County representative in person. Toward the end of September you will be mailed an Instruction Sheet and letter of rainfall to be reported. You will be told what and when to report. Also, a brief description of the simulated storm will be presented.

We would appreciate your assistance and cooperation in this drill, if you have the time to participate in it. Hopefully, we will be able to visit with you after the drill, when time is more available.

Your cooperation in this important program is most appreciated.

Sincerely,

David D. Sisk

David D. Sisk, Meteorologist
Flash Flood Coordinator

DDS:dcd

COUNTY OF CAMBRIA CIVIL DEFENSE

Court House
EBENSBURG, PENNSYLVANIA 15931

CAMBRIA COUNTY CIVIL DEFENSE
PHONES: 472-9797
472-9726
472-9727

September 26, 1978

Dear Staff Member:

As you are probably aware a flash flood program and drill will be held in Cambria County, October 5 and 6, 1978.

The two day program will consist of an afternoon session October 5th in the Armory at the Johnstown Airport and a drill session from 8:45 A.M. to 11:00 A.M., October 6.

Present plans call for activation of the County Emergency Staff on Friday morning October 6, as part of the drill.

We will appreciate it very much if you will be present at the Cambria County Civil Defense Office in the Court House in Ebensburg at 8:00 A.M. on the morning of October 6th, so as to participate in the drill session.

Thank you very much for your cooperation in this matter and with kindest regards, I am

Sincerely,

Elmer J. Schenk, Acting Director
Cambria County Civil Defense

EJS/jml

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service
Federal Building
1000 Liberty Avenue
Pittsburgh, PA 15222

September 28, 1978

Dear

Enclosed you will find the necessary information to participate in the Flash Flood Drill on October 6, 1978. As a volunteer rainfall observer, you play a key role in providing the basic data needed for your County Civil Defense and other cooperating agencies to maintain a high degree of awareness during heavy rainfalls.

Please call your County Flash Flood Coordinator (Civil Defense) on the drill day, as instructed, as if actual rain had occurred. As indicated on the attached form, call at the time shown in column 1. Relay the information contained in the remaining three columns, including the remarks. FOR EXAMPLE: At 8:45 A.M. on October 6, 1978, you call the County number provided and say ....."This is the (your location), PA observer. At 10:00 A.M. LST the rainfall has totalled 2.58 inches. It continues to rain hard. Little wind. Minor street flooding." (LST = Local Standard Time). When you phone in your reports, if the line is busy, please try again immediately, or another phone number if provided. We have tried to stagger the calls as much as possible. Your involvement in this drill will enable your County Flash Flood Coordinator cooperating with the State Council of Civil Defense of Pennsylvania and the National Weather Service to evaluate the effectiveness of your County's communication and preparedness in the issuance of timely and accurate information of impending flash flood problems. The experience you and your fellow County volunteers gain in the drill may save lives and reduce property damage when an actual heavy rain produces a flash flood.

A brief description of the storm system is also enclosed.

I wish to take this opportunity to thank you for your involvement in such a worthwhile endeavor. Rewards from your interest in a successful flash flood program in your County can only be measured in the knowledge that you may be saving the lives of neighbors and friends in a disastrous flash flood.

Sincerely yours,

George H. Schielein

George Schielein
Meteorologist-in-Charge

GS:dcd

Encl.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL WEATHER SERVICE
River Forecast Center
905 U.S. Post Office & Courthouse
Cincinnati, Ohio 45202

Thank you for your interest by participating in the "Flash Flood Training Seminar and Drill" to be held in Johnstown, PA, on October 5-6, 1978. A block of rooms has been set aside at the Holiday Inn, Johnstown, for October 4-5, 1978. Please make your reservations directly with the Inn by calling 814-266-5851, or by mail to Holiday Inn, 1540 Scalp Avenue, Johnstown, PA, 15904. The Inn is located on SR56, 1/4 mile east of U.S. 219. When making reservations, mention the Cambria County Civil Defense.

If you will be needing special equipment such as slide projectors, viewgraphs, etc., please contact the National Weather Service Forecast Office, Pittsburgh, PA. Their telephone number is 412-644-2882.

A copy of the agenda is enclosed.

Sincerely,

Dean T. Braatz
Flash Flood Hydrologist

Enclosure

FLASH FLOOD DRILL SCENARIO

by
Bill Long, Consultant
SCCD, Indiana, Pennsylvania

A Flash Flood Drill was held for four counties in Southwestern Pennsylvania on Friday morning, October 6, 1978. The counties were Cambria, Indiana, Somerset, and Westmoreland. The drills were held in the County Civil Defense offices, which are in the Court Houses, except Indiana County, where the office is on Gompers Avenue in Indiana, Pennsylvania. The Cambria County Court House is in Ebensburg, Pennsylvania; the Somerset County Court House is in Somerset, Pennsylvania; and the Westmoreland County Court House is in Greensburg, Pennsylvania. The exercise ran from 8:30 a.m. until 11:00 a.m., with a 24-hour drill storm compressed into this real time frame.

The rainfall for this storm was obtained from one that actually did occur over the Ohio Valley in the Spring of 1918. It was moved over the 4-County drill area with the maximum rainfall center near Johnstown and this storm was used to generate more than the sixty rainfall reports used in the drill. Since this data was used for the October drill, about the only storm that could generate this much rain over such a widespread area would be the remnants of a tropical storm that would follow a path a little North of Tropical Hurricane Camille that caused so much flash flooding in 1969.

The scenario for this drill follows:

METEOROLOGICAL SITUATION:

During the last part of September, a very strong Easterly wave was spotted on the intertropical front by satellite over the Lake Chad Region of Central Africa. The wave moved Westward with an unusual amount of convective activity through Nigeria to the Guinea Coast of Africa, where it moved into the Atlantic Ocean. By September 28, it had intensified into a very strong hurricane, with winds obtained by aircraft in excess of 120 mph. The position then was several hundred miles East of the Leeward Islands and it was named "Marjie." On the last day of September, "Marjie" was passing South of Puerto Rico in the Carribean Sea. It had produced very heavy rain with considerable flood damage and some loss of life to that small island. The early part of October, "Marjie" moved into the Gulf of Mexico and started to turn Northward, abandoning its Westward track.

Late on the night of October 4 (Figure 1, page 34), "Marjie" made land-fall near Cameron in extreme Southwestern Louisiana. The storm packed 100 mph winds and torrential rains. The rainfall map for the 24-hour period ending at 7 a.m. EST, October 5, is Figure D, page 35. The Weather Map for 1 p.m., October 5 (Figure 1), is included. At that time, a weakened Tropical Storm "Marjie" was centered in Western Tennessee. Light rains from it had reached Indianapolis, Indiana, and Louisville, Kentucky, while heavy rains were falling over the lower Ohio Valley. At this time, the future path of "Marjie" was in doubt.

A storm centered over North Dakota with a trailing cold front through the Great Plains might move East fast enough to pick up the storm and cause it to move Northward toward Chicago, Illinois, and the Great Lakes. This would produce little or no rain over the drill area.

A cold frontal system with its accompanying upper air trough extended from New England Westward to the Great Lakes Region. The NMC computer analysis did drop this front Southward and took "Marjie" Northeast up the Ohio Valley and then Eastward to near Philadelphia, Pennsylvania, by 7 p.m. on October 6.

The prognostic surface maps (Figures 3 and 4, pp. 36 and 37) show the position of "Marjie" as North of Huntington, West Virginia, at 7 a.m. on October 6, with heavy rains just approaching the drill area. This was the approximate path of the storm and was responsible for extremely heavy rains as the low moved through the area. The appropriate prognostic charts are included.

When it became apparent that heavy rains would likely occur from the prognostic track of this storm, certain preparations were made for heavy rains to visit the drill area. (QPF) Quantitative Precipitation Forecast Charts covering the event are included (Figure 6, p. 39).

Updated County Flash Flood Index numbers were issued by the National Weather Service and sent on the Civil Defense teletype at 3:30 p.m. on October 5. The Index of 2.0 for the drill counties was very low for early October, but very heavy rains had been experienced earlier in the week and streams were much above normal early October levels. The purpose of the drill was to generate crests in the Johnstown area near those of July, 1977.

The National Weather Service issued a Flash Flood Watch covering all of Western Pennsylvania on the Civil Defense teletype network at 3:40 p.m. on October 5 and it was valid from 10 p.m. on October 5 through noon on October 6. Preparations were made by Civil Defense officials at that time to alert key and "Need to Know" persons about the flood potential of this storm. A pre-storm briefing was made after 4:00 p.m. on October 5 for the various persons who attended the Flash Flood Drill Program at the Johnstown Armory. The meteorological package was presented along with the list of drill overseers and flash flood coordinators for each county. Overseers from both Civil Defense and the National Weather Service were present in each drill operation site, including the City of Johnstown. The only exception was that only Civil Defense overseers were present in Westmoreland County at Greensburg, Pennsylvania. A general list of duties for the overseers was provided and is included.

After the drill, all participants returned to the Johnstown Armory for a wrap-up of the exercise. The prognostic surface charts were "so good," they were used as actual surface maps for the post-storm briefing. The storm track of Tropical Storm "Marjie" is included, along with the actual 24-hour rainfall map of the flooded area. Greatest rainfall amounts were 6.00 inches at Stony Creek Boro; 5.90 at Elton; and 5.80 inches at Dale Boro.

Appropriate mid-storm summaries were made available to the news media for each county at about the half-way point in the drill. A complete drill summary was also available to the news media shortly after it was over and before the "open session" critique. These releases are included in this report.

(FLASH FLOOD DRILL BRIEFING)

METEOROLOGICAL ASPECTS

1. History of Storm
2. 1 PM Surface Map - October 5th
3. PCP Map - 7 AM - October 5th
4. Forecast Map for 7 AM - October 6th
5. QPF Map to 7 AM - October 6th
6. Forecast Map for 7 PM - October 6th
7. QPF Map to 7 AM - October 7th

PREPARATIONS FOR STORM

1. New Indexes
2. Flash Flood Watch
3. Scenario for Drill
4. Times of the Drill
5. Rules for the Overseers
6. Who are Overseers
7. Who are FF Coordinators

COMMUNITY PARTICIPATION

(Mostly a paper drill.
Think to write up what we could do at township/boro levels.)

1. Where to get boats
2. Emergency Routes to Shelters, Hospitals, Evacuate Schools.
3. How to Warn People
4. Who Closes Roads
5. How to get Best Media Coverage of Warnings
6. Where can you get assistance to man phones - Radio Backup - Water & Power.

THE FINAL - BOTTOM LINE TO COMPLETE THE FLASH FLOOD PROGRAM FOR A COUNTY IS A WORKABLE SOP STANDARD PLAN OF OPERATION.

LET'S USE THIS AS A START.

4-COUNTY SIMULATED FLASH FLOOD DRILL

(Cambria, Indiana, Somerset, Westmoreland)

Tropical Storm Marjie produced heavy rainfall amounts over the lower Mississippi Valley early yesterday, October 5th, in excess of six inches in many places.

The exact storm's path is presently uncertain, but indications are that it will move up the Ohio Valley and pass through West Virginia or Southern Pennsylvania on Friday, October 6th.

Due to the heavy rains of this past week, the soil is quite saturated, and streams are above normal, particularly in Southwestern Pennsylvania. The National Weather Service in Pittsburgh has issued a Flash Flood Watch this afternoon for all of Western Pennsylvania and the Northern West Virginia Panhandle, valid from 10:00 P.M. tonight until noon Friday, as a threat of further heavy rains from this storm is possible. High winds from this storm may cause some damage to trees and disruption of power and telephone service.

County Civil Defense offices in Western Pennsylvania have been alerted and are prepared to start continuous operation as the storm approaches.

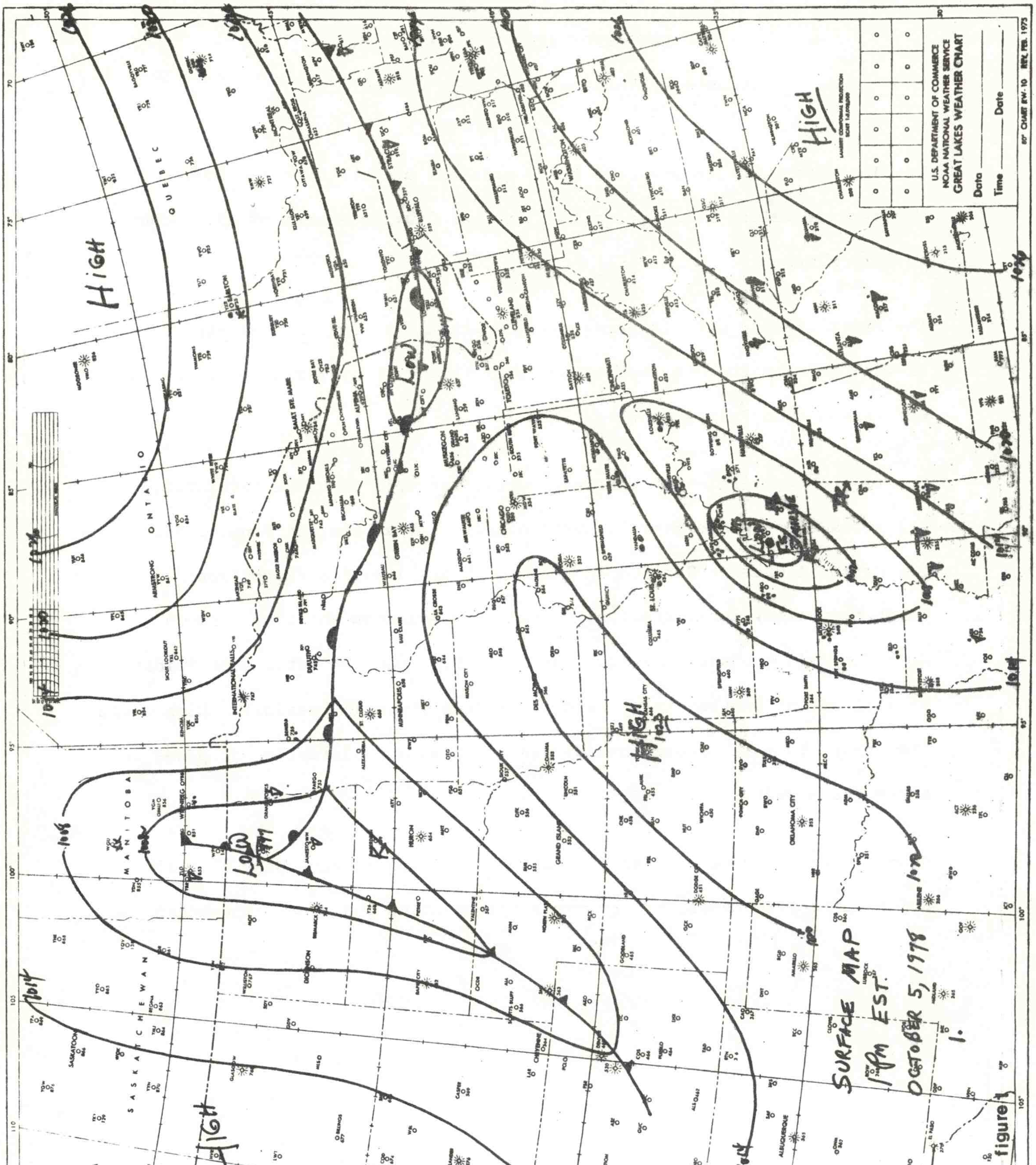

U.S. DEPARTMENT OF COMMERCE
NOAA NATIONAL WEATHER SERVICE
GREAT LAKES WEATHER CHART
Date
Time
Date
HIGH
HIGH
HIGH
HIGH
LOW
LOW
QUEBEC
ONTARIO
MANITOBA
SASKATCHEWAN
ALBERTA
SURFACE MAP
1PM EST.
OCTOBER 5, 1978

figure 1.

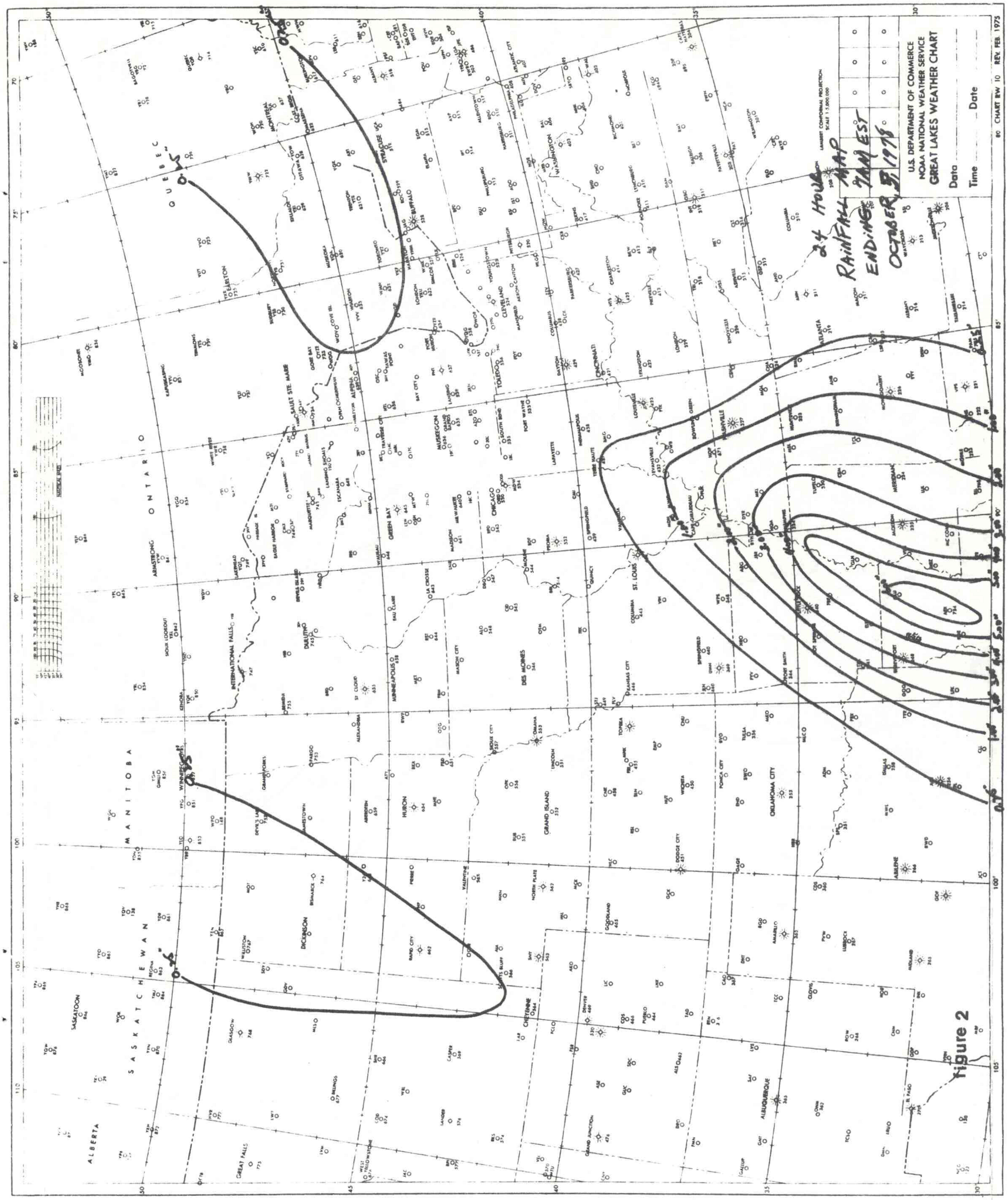

24 HOUR RAINFALL MAP
ENDING 7AM EST
U.S. DEPARTMENT OF COMMERCE
NOAA NATIONAL WEATHER SERVICE
GREAT LAKES WEATHER CHART
LAMBERT CONFORMAL PROJECTION
Date
Time
80 CHART RW 10 REV. FEB. 1975
QUEBEC
ONTARIO
MANITOBA
SASKATCHEWAN
ALBERTA

Figure 2

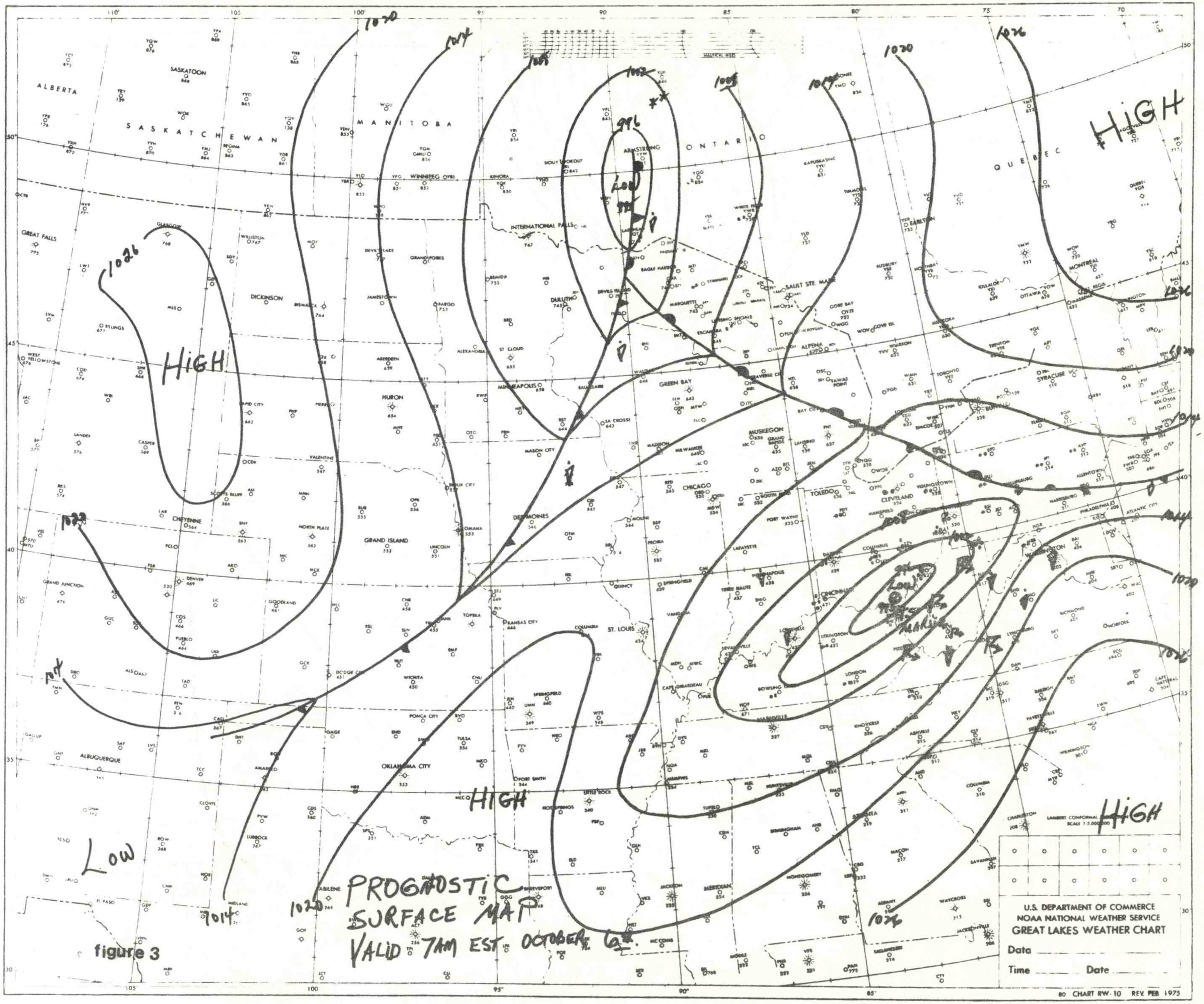

HIGH
HIGH
HIGH
LOW
LOW
PROGNOSTIC
SURFACE MAP
VALID 7AM EST OCTOBER 6.
U.S. DEPARTMENT OF COMMERCE
NOAA NATIONAL WEATHER SERVICE
GREAT LAKES WEATHER CHART
Data
Time
Date
80 CHART RW-10 REV. FEB 1975

figure 3

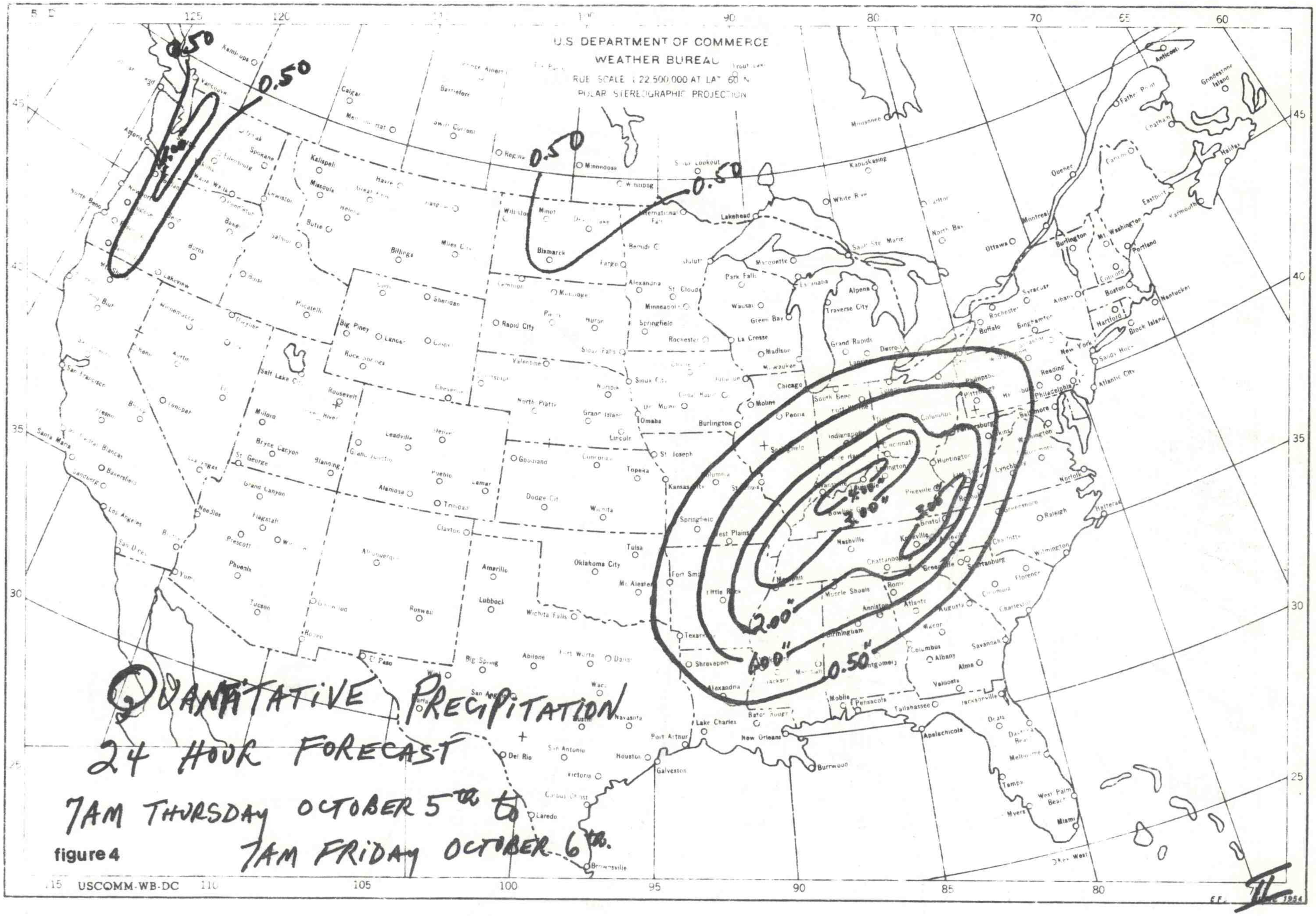

U.S. DEPARTMENT OF COMMERCE
WEATHER BUREAU
RUE SCALE 1:22,500,000 AT LAT 60 N
POLAR STEREOGRAPHIC PROJECTION
0.50
0.50
0.50
0.50
4.00"
3.00"
2.00"
4.00"
0.50"
QUANTITATIVE PRECIPITATION
24 HOUR FORECAST
7AM THURSDAY OCTOBER 5TH TO
7AM FRIDAY OCTOBER 6TH.

figure 4

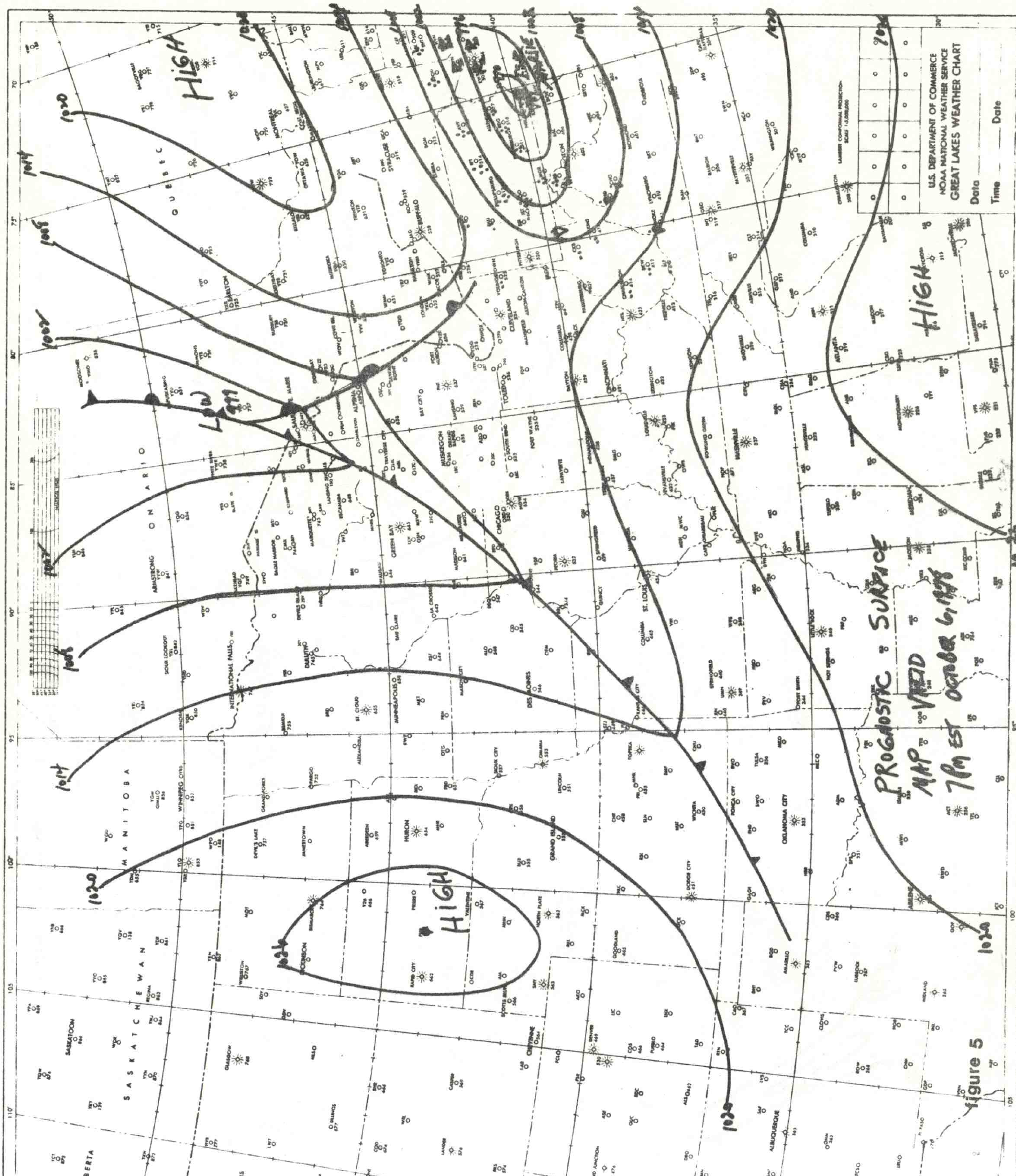

U.S. DEPARTMENT OF COMMERCE
NOAA NATIONAL WEATHER SERVICE
GREAT LAKES WEATHER CHART
Date
Time
Date
60° CHART RW-10 REV. FEB 1975
LAMBERT CONFORMAL PROJECTION SCALE 1:5,000,000
HIGH
LOW
HIGH
HIGH
PROGNOSTIC SURFACE
MAP VALID
7PM EST OCTOBER 6,

Figure 5

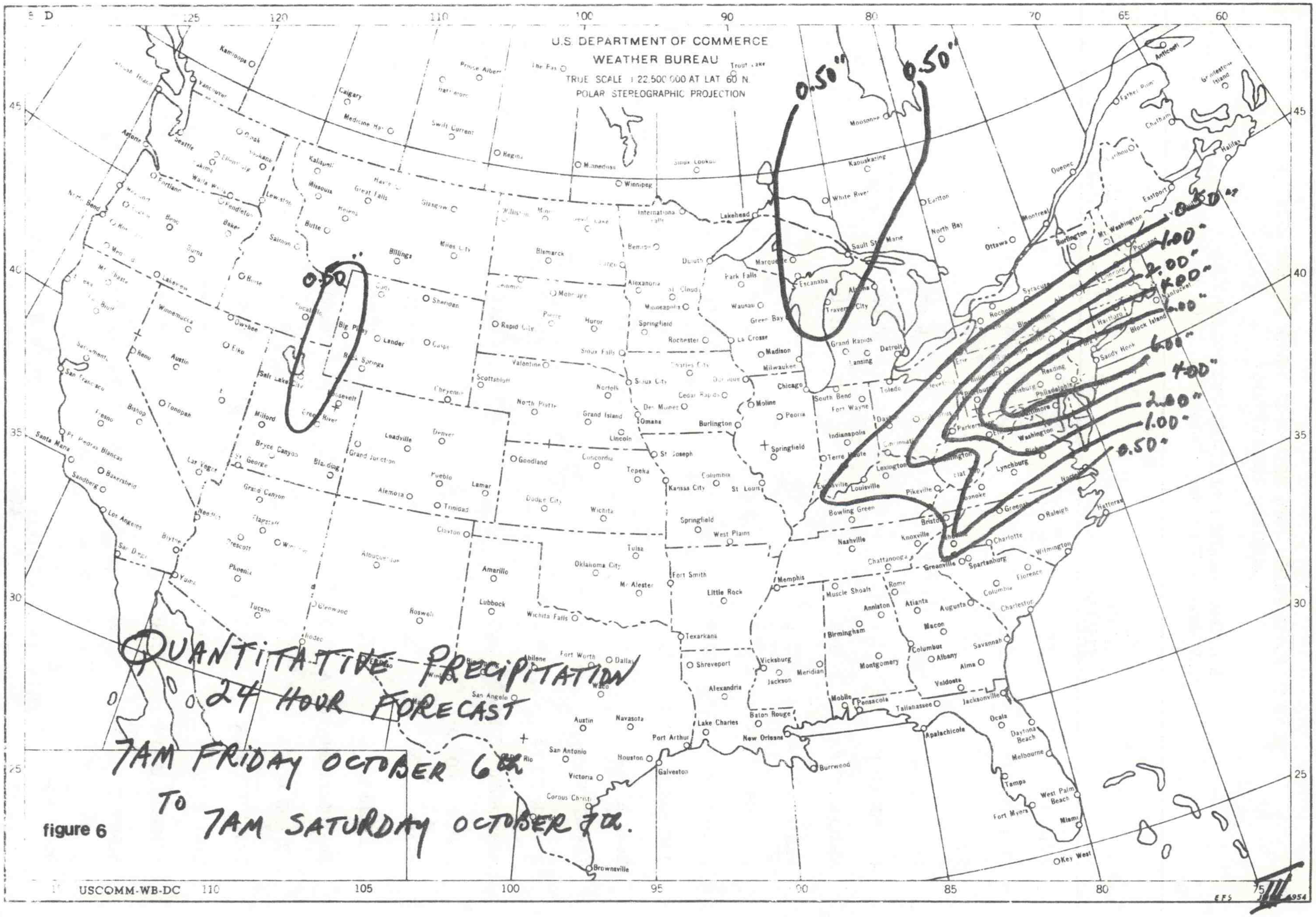

U.S. DEPARTMENT OF COMMERCE
WEATHER BUREAU
TRUE SCALE 1:22,500,000 AT LAT 60 N.
POLAR STEREOGRAPHIC PROJECTION
0.50"
0.50"
0.50"
1.00"
2.00"
4.00"
6.00"
4.00"
2.00"
1.00"
0.50"
QUANTITATIVE PRECIPITATION
24 HOUR FORECAST
7AM FRIDAY OCTOBER 6TH
TO 7AM SATURDAY OCTOBER 7TH.
USCOMM-WB-DC

figure 6

COUNTY FLASH FLOOD (FF) SELF-HELP INDEX NUMBERS FOR
WESTERN PENNSYLVANIA

NATIONAL WEATHER SERVICE, PITTSBURGH, PA
Drill date - Thursday, October 5, 2:00 PM EDT

	FLOOD INDEX NUMBER	ADD SNOW WATER EQUIVALENT TO TOTAL RAINFALL
ZONE 1 PA	***	*****
ERIE CO PA	2.9	0.00
ZONE 2 PA	***	*****
CRAWFORD CO PA	2.6	0.00
WARREN CO PA	2.6	0.00
MERCER CO PA	2.9	0.00
VENANGO CO PA	2.6	0.00
CLARION CO PA	2.6	0.00
FOREST CO PA	2.8	0.00
JEFFERSON CO PA	2.5	0.00
ZONE 3 PA	***	*****
LAWRENCE CO PA	2.8	0.00
BUTLER CO PA	2.4	0.00
ARMSTRONG CO PA	2.5	0.00
INDIANA CO PA	2.0	0.00
BEAVER CO PA	2.5	0.00
ALLEGHENY CO PA	2.5	0.00
WESTMORELAND CO PA	2.0	0.00
GREENE CO PA	2.3	0.00
FAYETTE CO PA	2.3	0.00
ZONE 5 PA	***	*****
CAMBRIA CO PA	2.0	0.00
SOMERSET CO PA	2.0	0.00

END
WSFO PGH

THIS IS A DRILL THIS IS A DRILL THIS IS A DRILL

BULLETIN

FLASH FLOOD WATCH

NATIONAL WEATHER SERVICE
PITTSBURGH, PA

DRILL DATE THUR OCTOBER 5 10 PM EDT

THE NATIONAL WEATHER SERVICE IN PITTSBURGH HAS ISSUED A FLASH FLOOD WATCH FOR ALL OF WESTERN PENNSYLVANIA THROUGH FRIDAY NOON OCTOBER 6.

RAINS ASSOCIATED WITH THE REMNANTS OF TROPICAL STORM MARJIE WILL BE SPREADING NORTHEASTWARD OVERNIGHT AND FRIDAY MORNING. RAINFALL AMOUNTS IN EXCESS OF FOUR INCHES ARE POSSIBLE WITH THIS STORM SYSTEM.

THE SOIL IS QUITE SATURATED AND STREAMS ARE ABOVE NORMAL, PARTICULARLY IN SOUTHWESTERN PENNSYLVANIA.

A FLASH FLOOD WATCH MEANS FLASH FLOODING IS POSSIBLE IN THE WATCH AREA. PERSONS AND AGENCIES IN THE WATCH AREA ARE ADVISED TO CHECK PREPAREDNESS PLANS, KEEP INFORMED AND BE READY TO TAKE IMMEDIATE ACTION IF FLASH FLOODING OCCURS OR A WARNING IS ISSUED.

ADDITIONAL STATEMENTS WILL BE ISSUED.

THIS IS A DRILL THIS IS A DRILL THIS IS A DRILL

SCHEDULED NATIONAL WEATHER SERVICE DRILL
TRANSMISSIONS VIA TELETYPE CIRCUIT TO FOUR-COUNTY AREA
All times are EDT (Eastern Daylight Time)
October 5 - 6, 1978

TRANSMITTED FROM	COUNTIES	MESSAGE AND DRILL TIME	MESSAGE NO.
Western Area (Indiana)	-Indiana & W'moreland		
Central Area (Selinsgrove)	-Cambria & Somerset		
REAL TIME:		DRILL TIME:	
Oct. 5 - 3:30 PM		County Flash Flood Program Nos. Oct. 5 - 2:00 PM	1
Oct. 5 - 3:40 PM		Combined Flash Flood Watch and Updated W.PA Zones 3/5 Oct. 5 - 10:00 PM	2
Oct. 6 - 8:00 AM		River Stage Readings 7:00 AM Oct. 6 - 7:30 AM	3
Oct. 6 - 8:30 AM		Weather Radar Summary Oct. 6 - 7:35 AM	4
Oct. 6 - 8:40 AM		Weather Radar Summary Oct. 6 - 9:35 AM	5
Oct. 6 - 8:45 AM		Flash Flood Warning Oct. 6 - 10:00 AM	6
Oct. 6 - 8:50 AM		W.PA Zone 3/5 Forecasts Oct. 6 - 10:15 AM	7
Oct. 6 - 8:55 AM		Flash Flood Statement Oct. 6 - 12:00 Noon	8
Oct. 6 - 9:00 AM		Weather Radar Summary Oct. 6 - 12:35 PM	9
Oct. 6 - 9:05 AM		Flood Warning Oct. 6 - 2:10 PM	10
Oct. 6 - 9:10 AM		Weather Radar Summary Oct. 6 - 3:35 PM	11
Oct. 6 - 9:20 AM		W.PA Zone Forecasts 3/5 Oct. 6 - 4:00 PM	12
Oct. 6 - 9:30 AM		Flash Flood Statement Oct. 6 - 7:30 PM	13
Oct. 6 - 9:40 AM		Flood Warning Update Oct. 6 - 8:25 PM	14
Oct. 6 - 9:50 AM		Flash Flood Warning Update Oct. 6 - 10:30 PM	15
Oct. 6 - 10:00 AM		Two Weather Radar Summaries Oct. 7 - 12:35 /4:35 AM	16

FLASH FLOOD DRILL

October 5-6, 1978

TIME CHART

REAL TIME October 6	EXERCISE TIME October 6-7
8:30 AM	7:00 AM
8:35 AM	8:00 AM
8:40 AM	9:00 AM
8:45 AM	10:00 AM
8:50 AM	11:00 AM
8:55 AM	12:00 NOON
9:00 AM	1:00 PM
9:05 AM	2:00 PM
9:10 AM	3:00 PM
9:15 AM	4:00 PM
9:20 AM	5:00 PM
9:25 AM	6:00 PM
9:30 AM	7:00 PM
9:35 AM	8:00 PM
9:40 AM	9:00 PM
9:45 AM	10:00 PM
9:50 AM	11:00 PM
9:55 AM	12:00 MIDNITE
10:00 AM	1:00 AM
10:05 AM	2:00 AM
10:10 AM	3:00 AM
10:15 AM	4:00 AM
10:20 AM	5:00 AM
10:25 AM	6:00 AM
10:30 AM	7:00 AM
10:35 AM	8:00 AM
10:40 AM	9:00 AM

SOME DUTIES OF THE COUNTY OVERSEERS DURING THE FLASH FLOOD DRILL:

1. Monitor the operation

2. Provide counsel and assistance on any matter
   (This exercise is a learning procedure.)

3. Check to see that items are not overlooked and that forecasts are moving as needed.
   (Flash Flood and River Warnings)

4. Keep the drill in proper time frame
   (Real vs Drill times)

5. Check to see that data is flowing from and/or to other Counties as needed

6. Check to see proper records are timed and maintained
   (Real Time may be easiest)

7. Call reports of flooding and get information about rain prospects from WSFO, Pittsburgh, if time is available.

FLASH FLOOD DRILL

October 5-6, 1978

O V E R S E E R S

JOHNSTOWN CITY	Don Willson Charles Ryland
CAMBRIA COUNTY	Robert Stimmel Dean Braatz John Monroe
INDIANA COUNTY	Paul Y. White Ralph Folino Joe Dougherty
SOMERSET COUNTY	Ben Towsey Dave Sisk
WESTMORELAND COUNTY	Vic Elish Bill Long

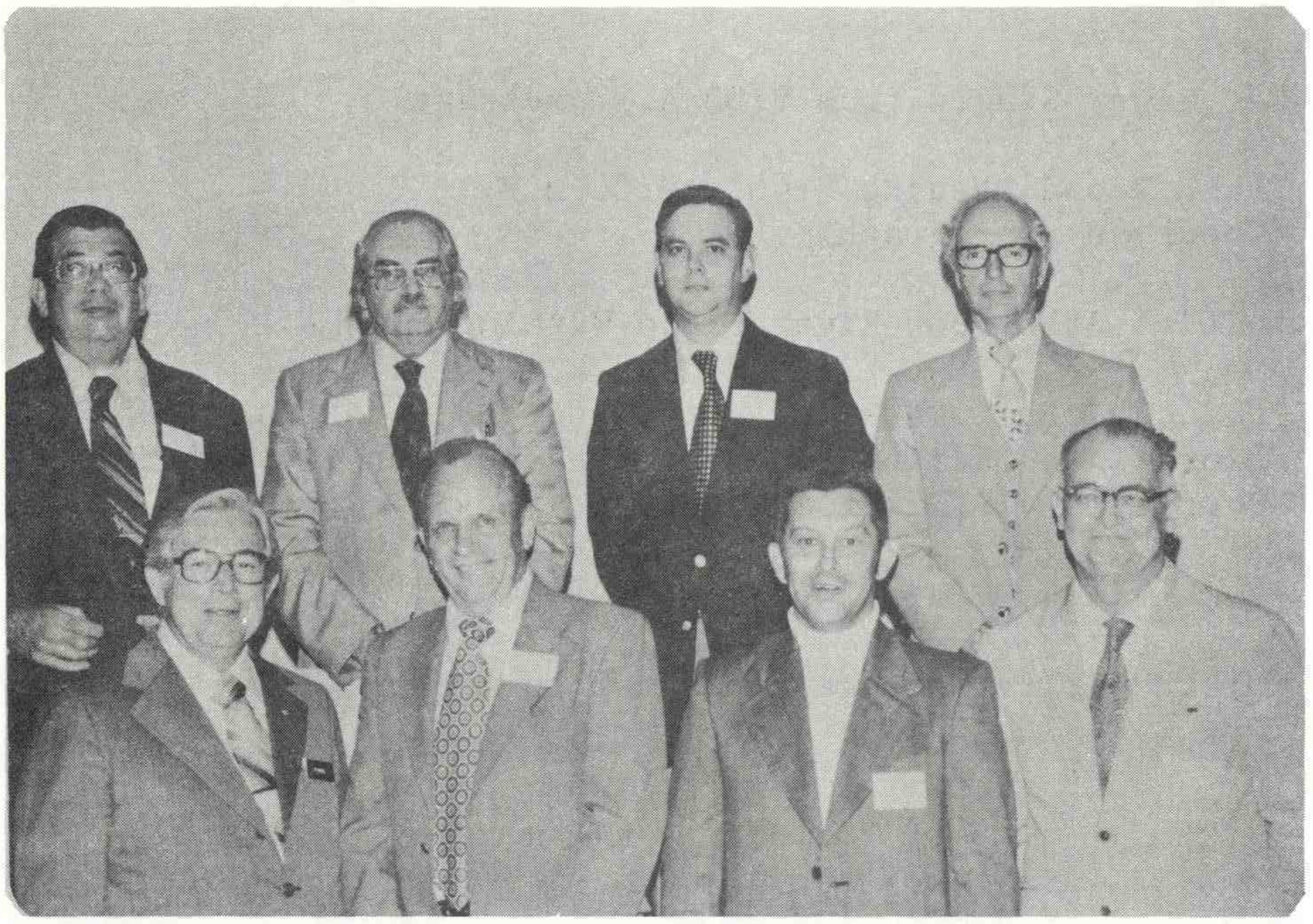
F L A S H F L O O D C O O R D I N A T O R S

CAMBRIA COUNTY	Elmer Schenk
INDIANA COUNTY	Rodger Stivison
SOMERSET COUNTY	James Welsh
WESTMORELAND COUNTY	Elwood Leslie
PITTSBURGH WEATHER SERVICE FORECAST OFFICE	Ray Visneski Theresa R. Rossi
JOHNSTOWN ARMORY NEWS ROOM	George Scheilein and a CD representative

TELEPHONE LIST FOR THE FLASH FLOOD DRILL
October 5-6, 1978

WESTERN AREA CD HEADQUARTERS	412-357-2990
CENTRAL AREA CD HEADQUARTERS	717-374-2055
STATE COUNCIL OF CIVIL DEFENSE, HARRISBURG	717-783-8150
JOHNSTOWN ARMORY	814-535-4801 or 814-535-6866
CAMBRIA COUNTY CIVIL DEFENSE	814-472-9797 or 814-472-9726
(Main Line to use if other two numbers are busy.)	814-472-6600
INDIANA COUNTY CIVIL DEFENSE	412-465-2330 or 412-349-4837
SOMERSET COUNTY CIVIL DEFENSE	814-445-5716 or 814-445-2533 or 443-3753
WESTMORELAND COUNTY CIVIL DEFENSE	412-834-7007
"" GREENSBURG POLICE (Data Collection)	412-834-4980
"" WESTMORELAND MANOR (Teletype)	412-834-0200
JOHNSTOWN - FIRE CHIEF SPECIAL NUMBER	814-539-8761 EXT 20 - 21
WEATHER SERVICE FORECAST OFFICE, PITTSBURGH	412-644-2882 or 412-644-2888
WEATHER SERVICE OFFICE, HARRISBURG (Where CD Teletype Interchange is located)	717-782-3739

FLASH FLOOD DRILL ATTENDEES



Top row from left Ralph Folino, WSFO Pittsburgh; Charles Ryland, WSFO Pittsburgh; Dave Sisk, WSFO Pittsburgh;and Paul White, SCCD.

Bottom row from left Bob Stimmel, SCCD; George Schielein, WSFO Pittsburgh; Dean Braatz, ORFC, Cincinnati; Bill Long, SCCD.

County Civil Defense staffs. From left: James Laffey and Elwood Leslie; Westmoreland County; Bill James and James Welch, Somerset County; Roger Stivison, Indiana County; and Elmer Schenk, Cambria County.

CAMBRIA COUNTY

1. Get River Stages from 8:00 A.M. message.

2. Flash Flood Warning 8:40 - 9:00 A.M.
   (Check on your graph)

3. Initial Johnstown River Flood Warning 9:10 A.M.

4. Produce Johnstown River Forecasts and update as needed. Send average rainfall to Indiana and Westmoreland Counties and collect data from Somerset and STN25 (Johnstown).

5. Flash Flood Warning Update 9:50 - 10:00 A.M.

6. Return entire package to Johnstown Armory.

INDIANA COUNTY

1. Get Seward River Stage from 8:00 A.M. message.

2. Flash Flood Warning Release by 8:55 - 9:00 A.M.
   (Check on your graph)

3. Get data and make Seward forecast as backup exercise.
   (Don't release it, if you have one from Greensburg.)

4. Flash Flood Warning Update 9:50 - 10:00 A.M.

5. Need to get rainfall data from Cambria County and Seward forecast from Westmoreland County.

6. See how Flash Flood Warning is issued in County.

7. Return this package to Armory briefing.

SOMERSET COUNTY

1. Get Confluence River stages from 8:00 A.M. message.

2. Flash Flood Warning 8:50 - 9:00 A.M.
   (Check on your graph)

2A. See how Flash Flood Warning issued through County.

3. Confluence Forecast 9:10 - 9:15 A.M.

4. Confluence Forecast Update 9:50 - 10:00 A.M.

5. Flash Flood Warning Update 9:55 - 10:05 A.M.

6. Call Westmoreland and Cambria with average basin rainfall.

WESTMORELAND COUNTY

1. Get Yock and Seward River stages from 8:00 A.M. message.

2. County Flash Flood Warning released by 8:55 - 9:00 A.M.
   (Check on your graph)

3. Give Seward Flood Warning to Indiana County. Call Johnstown as needed.
   (River and rainfall data)

4. Yock Flood Warning 9:10 A.M.

5. Revised Yock and Seward Flood Forecasts by 9:30 - 9:45 A.M.

6. Flash Flood Warning Updated 9:50 - 10:00 A.M.

7. See how Flash Flood Warning is disseminated.

8. Return entire package to Armory.

RAINFALL

DRILL INSTRUCTION SHEET for the Morning of OCTOBER 6, 1978

LOCATION EBENSBURG COUNTY CAMBRIA

CIVIL DEFENSE COUNTY PHONE NO.

TOLL FREE 472-9797
472-9726

All the simulated rainfall data below begins after the regular 7AM Local Standard Time Daily Observation.
All rainfall increments are the TOTAL AMOUNT since the Storm begins after 7AM Local Standard Time.

NOTE: If you have the time, call National Weather Service in Pittsburgh also: COLLECT 412-644-2888 or TOLL FREE 800-242-0510

TIME to Phone your County Civil Defense DRILL MORNING October 6, 1978	SIMULATED RAINFALL DATA for DRILL	TOTAL RAINFALL AMOUNT to Report	REMARKS to mention to your Civil Defense
	10 AM	2.00"	Street and sewer flooding in town.
	1 PM	3.00"	Serious basement floodings. Intersection RT 22 & 422 underwater. Mud slides.
	4 PM	3.70"	Local Vol. Fire Dept. evacuating people and pumping throughout city.
	7 PM	4.20"	Lines down throughout local area..
	10 PM	4.30"	State Police closed off RT 22 to Cresson
	1 AM	4.50"	
	4 AM	4.80"	
	7 AM	5.00"	

RIVER/CREEK AT BETHLEHEM STEEL FOOTBRIDGE, CONEMAUGH RIVER

DRILL INSTRUCTION SHEET for the Morning of OCTOBER 6, 1978

CIVIL DEFENSE
COUNTY PHONE NO.
TOLL FREE: 535-711 EXT-255
472-9797

LOCATION JOHNSTOWN STN 25 COUNTY CAMBRIA

472-9726

~~CIVIL DEFENSE~~
CITY PHONE NO.
TO CALL FIRE CHIEF HENNGER EXT-20

All the simulated River or Creek Stage readings below begin after the regular 7 AM Local Standard Time Observation
R = RISING

TIME to Phone your COUNTY and CITY CIVIL DEFENSE DRILL NORNING October 6, 1978	Simulated RIVER/CREEK DATA for DRILL	RIVER or CREEK STAGE Reading to Report RAIN	RIVER	REMARKS to mention to your CIVIL DEFENSE
844 AM LST	10 AM	2.30"	18.2R	Morrellville Underpass and "D" Street flooded. Raining hard, flooding extensive
901 AM LST	1 PM	3.50"	24.5R	Conemaugh River rising rapidly.
917 AM LST	4 PM	4.10"	27.7R	Conemaugh River at flood stage.
931 AM LST	7 PM	4.70"	30.0R	Flooding extensive.
946 AM LST	10 PM	4.80"	31.6R	
1005 AM LST	1 AM	4.90"	32.1R	Flood Stage 23 Feet
1020 AM LST	4 AM	5.20"	32.7R	Warning Stage 28 Feet
1035 AM LST	7 AM	5.50"	33.8R	
1045 AM LST	10 AM	NONE	34.2	

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL
COUNTY FLASH FLOOD PROGRAM INDEX NUMBERS FOR WESTERN PENNSYLVANIA
NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 200PM EDT THU OCT 5

	FLOOD INDEX NUMBER	ADD SNOW WATER EQUIVALENT TO TOTAL RAINFALL
ZONE 1 COUNTIES		
ERIE	2.9	0.00
ZONE 2 COUNTIES		
CRAWFORD	2.6	0.00
WARREN	2.6	0.00
MERCER	2.9	0.00
VENANGO	2.6	0.00
CLARION	2.6	0.00
FOREST	2.8	0.00
JEFFERSON	2.5	0.00
ZONE 3 COUNTIES		
LAWRENCE	2.8	0.00
BUTLER	2.4	0.00
ARMSTRONG	2.5	0.00
INDIANA	2.0	0.00
BEAVER	2.5	0.00
ALLEGHENY	2.5	0.00
WESTMORELAND	2.0	0.00
GREENE	2.3	0.00
FAYETTE	2.3	0.00
ZONE 5 COUNTIES		
CAMBRIA	2.0	0.00
SOMERSET	2.0	0.00

END
THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL....THIS IS A DRILL

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL
BULLETIN BROADCAST IMMEDIATELY
FLASH FLOOD WATCH

NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 1000PM EDT THU OCT 5

THE NATIONAL WEATHER SERVICE IN PITTSBURGH WAS ISSUED A FLASH FLOOD WATCH FOR ALL OF WESTERN PENNSYLVANIA THROUGH NOON FRIDAY OCTOBER 6.

RAINS ASSOCIATED WITH THE REMNANTS OF TROPICAL STORM MARJIE WILL BE SPREADING NORTHEASTWARD OVERNIGHT AND FRIDAY MORNING. RAINFALLS IN EXCESS OF FOUR INCHES ARE POSSIBLE WITH THIS STORM SYSTEM.

THE SOIL IS QUITE SATURATED AND STREAMS ARE ABOVE NORMAL... PARTICULARLY IN SOUTHWESTERN PENNSYLVANIA.

A FLASH FLOOD WATCH MEANS FLASH FLOODING IS POSSIBLE IN THE WATCH AREA. PERSONS AND AGENCIES IN THE WATCH AREA ARE ADVISED TO CHECK PREPAREDNESS PLANS...KEEP INFORMED...AND BE READY TO TAKE IMMEDIATE ACTION IF FLASH FLOODING OCCURS OR A WARNING IS ISSUED.

ADDITIONAL STATEMENTS WILL BE ISSUED.

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 1000PM EDT THU OCT 5

WESTERN PENNSYLVANIA ZONE FORECASTS...UPDATED

ZONE 3 SOUTHWESTERN
ZONE 5 LAUREL MOUNTAIN AREA
...FLASH FLOOD WATCH UNTIL NOON FRIDAY...
RAIN DEVELOPING OVERNIGHT AND CONTINUING INTO FRIDAY...ENDING SATURDAY MORNING. RAIN MAY BE HEAVY AT TIMES FRIDAY MORNING AND AFTERNOON. LOWS BOTH NIGHTS NEAR 50. HIGHS FRIDAY AND SATURDAY IN THE MID 60S.
WIND EAST 10 TO 20 MPH WITH HIGHER GUSTS THROUGH FRIDAY.
CHANCE OF RAIN 60 PERCENT OVERNIGHT...THEN NEAR 100 PERCENT FRIDAY AND FRIDAY NIGHT.

ZONES 1..2..4..AND 6 UNCHANGED FROM 4PM EDITION.

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

RIVER STAGE READINGS
NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 730AM EDT FRI OCT 6

LOCATION	7AM EDT STAGE IN FEET		FLOOD STAGE IN FEET
STONY CREEK...			
FERNDALE	6.5	FALLING	19.0 FT
LITTLE CONEMAUGH RIVER...			
EAST CONEMAUGH	4.7	FALLING	17.0
CONEMAUGH RIVER...			
JOHNSTOWN FOOT BRIDGE	8.0	FALLING	28.0
SEWARD	7.8	FALLING	12.0
YOUGHIOGHENY RIVER...			
CONFLUENCE	2.9	STEADY	12.0
CONNELLSVILLE	3.1	STEADY	12.0
SUTERSVILLE	3.8	STEADY	20.0

END

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

WEATHER RADAR SUMMARY
NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 735AM EDT FRI OCT 6

AT SEVEN THIRTY AM...PITTSBURGH WEATHER RADAR SHOWED A LARGE AREA OF RAIN COVERING SOUTHWESTERN PENNSYLVANIA...NORTHERN WEST VIRGINIA... AND SOUTHEASTERN OHIO. THE RAIN WAS GENERALLY LIGHT EXCEPT FOR AN AREA OF MODERATE TO HEAVY RAIN FROM JUST SOUTH OF PITTSBURGH TO MORGANTOWN WVA AND OVER TO WHEELING WVA.

THE HEAVIEST RAIN HAS EXPANDED DURING THE PAST HOUR. THE RAIN IS MOVING EAST AT TWENTY MPH.

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

WEATHER RADAR SUMMARY
NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 935AM EDT FRI OCT 6

AT NINE THIRTY AM...PITTSBURGH WEATHER RADAR SHOWED A LARGE AREA OF RAIN OVER MUCH OF WESTERN PENNSYLVANIA...NORTHERN WEST VIRGINIA... SOUTHEASTERN OHIO...AND WESTERN MARYLAND. THE AREA OF MODERATE AND HEAVY RAIN CONTINUES OVER THE LAUREL MOUNTAINS OF PENNSYLVANIA WESTWARD TO JUST EAST OF PITTSBURGH AND THEN OVER TO MORGANTOWN WVA.

THE RAIN IS MOVING EAST AT TWENTY MPH.

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

BULLETIN ACTIVATE EBS
FLASH FLOOD WARNING

NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 1000AM EDT FRI OCT 6

THE NATIONAL WEATHER SERVICE IN PITTSBURGH HAS ISSUED A FLASH FLOOD WARNING UNTIL TEN PM TONIGHT FOR THE FOLLOWING COUNTIES OF WESTERN PENNSYLVANIA...CAMBRIA...INDIANA...SOMERSET...AND WESTMORELAND.

A FLASH FLOOD WARNING MEANS FLOODING IS IMMINENT. TAKE PRECAUTIONS IMMEDIATELY.

HEAVY RAINS HAVE BEEN REPORTED EAST OF PITTSBURGH BY SKYWARN SPOTTERS AND RADAR SHOWS MORE HEAVY RAIN WILL FALL IN THE WARNING AREA BECAUSE OF TROPICAL STORM MARJIE.
ALREADY...OVER TWO INCHES OF RAIN HAVE FALLEN ON SATURATED SOILS... RESULTING IN RAPID RUNOFF INTO STREAMS AND CREEKS.

MORE STATEMENTS WILL BE ISSUED.

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 1015AM EDT FRI OCT 6

WESTERN PENNSYLVANIA ZONE FORECASTS

ZONE 3 SOUTHWESTERN
ZONE 5 LAUREL MOUNTAIN AREA
...FLASH FLOOD WARNING UNTIL TEN PM TONIGHT...
RAIN THIS AFTERNOON THROUGH FRIDAY NIGHT...ENDING SATURDAY MORNING.
RAIN WILL BE HEAVY AT TIMES THROUGH TONIGHT. LOWS TONIGHT AND FRIDAY NIGHT NEAR 50. HIGHS FRIDAY AND SATURDAY IN THE MID 60S.
WIND NORTHERLY 15 TO 25 MPH THROUGH TONIGHT.
CHANCE OF RAIN NEAR 100 PERCENT THROUGH FRIDAY NIGHT AND 20 PERCENT SATURDAY.

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FLASH FLOOD STATEMENT
NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 12NOON EDT FRI OCT 6

...RAIN...HEAVY AT TIMES...CONTINUES ACROSS SOUTHWESTEN PENNSYLVANIA..

CIVIL DEFENSE AND SKYWARN OBSERVES REPORTED TWO TO FOUR INCHES OF RAIN SINCE SEVEN AM. THIS FELL ON SATURATED SOILS AND FLASH FLOODING IS OCCURRING IN MOST COUNTIES SOUTH OF INTERSTATE EIGHTY IN PENNSYLVANIA. THE HARDEST HIT AREA IS THE COUNTIES OF SOMERSET... INDIANA...CAMBRIA...AND WESTMORELAND. MANY ROADS ARE CLOSED BY HIGH WATER.

EXTREME CAUTION IS URGED IF YOU MUST DRIVE. IF YOU LIVE ALONG RIVERS OR CREEKS...BE PREPARED TO MOVE TO A SAFE PLACE. RIVER FORECASTS AND WARNINGS WILL BE ISSUED EARLY THIS AFTERNOON.
A FLASH FLOOD WARNING REMAINS IN EFFECT FOR PARTS OF WESTERN PENNSYLVANIA UNTIL TEN PM TONIGHT.

FURTHER STATEMENTS WILL BE ISSUED.

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

WEATHER RADAR SUMMARY
NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 1235PM EDT FRI OCT 6

...HEAVY RAINS MOVING OUT OF THE LAUREL MOUNTAINS TOWARD CENTRAL PA... AT TWELVE THIRTY PM...PITTSBURGH WEATHER RADAR SHOWED THAT LIGHT RAIN CONTINUED OVER MOST OF THE TRI STATE REGION WITH PATCHES OF MODERATE AND OCCASIONALLY HEAVY RAIN OVER THE LAUREL MOUNTAINS AND SOUTH CENTRAL MOUNTAINS OF PENNSYLVANIA.

THE RAIN IS MOVING EAST AT TWENTY FIVE MPH.

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

BULLETIN BROADCAST IMMEDIATELY
FLOOD WARNING

NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 210PM EDT FRI OCT 6

HEAVY RAINS ACROSS SOUTHWESTERN PENNSYLVANIA SINCE SIX AM CAUSED FLASH FLOODING OF STREAMS AND CREEKS...AND RAPID RISES ON THE RIVERS. FLOODING HAS BEEN REPORTED IN SOUTHERN CAMBRIA COUNTY ON THE STONEY CREEK. THE CASSELMAN RIVER IN SOMERSET COUNTY IS RISING RAPIDLY...AND FLOODING CAN BE EXPECTED THIS AFTERNOON FROM SALISBURY AND MEYERSDALE DOWNSTREAM TO CONFLUENCE AND ITS TRIBUTARIES.

FLOODING CAN BE EXPECTED THIS AFTERNOON AND TONIGHT ALONG THE CONEMAUGH RIVER FROM SEWARD TO JOHNSTOWN PA.

YOUGHIOGHENY RIVER FORECASTS

LOCATION	1PM STAGE	CREST FORECAST	FLOOD STAGE
CONFLUENCE PA	5.8 FT RISING	NEAR 14 FT AT 1AM SAT	12 FEET
CONNELLSVILLE	6.1 RISING	15 TO 15.5 AT 4AM SAT	12
SUTERSVILLE PA	7.7 FT RISING	NEAR 24 FT AT 10AM SAT	20 FEET

CONFLUENCE AND CONNELLSVILLE WILL GO ABOVE FLOOD STAGE AFTER SEVEN PM TONIGHT. SUTERSVILLE WILL GO ABOVE FLOOD STAGE EARLY SATURDAY MORNING.

THESE FORECASTS INCLUDE ONE INCH OF ADDITIONAL RAINFALL THROUGH SEVEN PM TONIGHT. UPDATED FORECASTS WILL BE ISSUED IF NECESSARY.

FLOODING ALONG THE LOWER MONONGAHELA RIVER IS EXPECTED EARLY SATURDAY MORNING. THIS INCLUDES BRADDOCK PA.

A FLASH FLOOD WARNING CONTINUES FOR STREAMS IN THE FOUR COUNTY AREA UNTIL TEN PM TONIGHT.
THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

WEATHER RADAR SUMMARY
NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 35PM EDT FRI OCT 6

AT THREE THIRTY PM...PITTSBURGH WEATHER RADAR SHOWED LIGHT RAIN OVER THE TRI STATE REGION. THERE ARE PATCHES OF MODERATE RAIN LINGERING IN THE LAUREL AND SOUTH CENTRAL MOUNTAINS OF PENNSYLVANIA.

THE RAIN IS MOVING EAST AT TWENTY FIVE MPH.

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL
NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 400PM EDT FRI OCT 6

WESTERN PENNSYLVANIA ZONE FORECASTS

ZONE 3 SOUTHWESTERN
ZONE 5 LAUREL MOUNTAIN AREA
...FLOOD WARNING FOR YOUGHIOGHENY RIVER AND CONEMAUGH RIVER TONIGHT...
...FLASH FLOOD WARNING UNTIL TEN PM...
RAIN TONIGHT...ENDING SATURDAY MORNING. THEN CLOUDY THROUGH SATURDAY NIGHT. PARTLY CLOUDY SUNDAY. LOWS BOTH NIGHT NEAR 50. HIGHS BOTH DAYS NEAR 60.
WIND NORTHWEST 10 TO 20 MPH THROUGH SATURDAY.
CHANCE OF RAIN NEAR 100 PERCENT TONIGHT...THEN 20 PERCENT SATURDAY AND SATURDAY NIGHT.
THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

THIS IS A DRILL - - - - - - - - THIS IS A DRILL - - - - - - - - THIS IS A DRILL

MID STORM SUMMARY -- Release after 9:35 A.M. real time

CAMBRIA COUNTY -- 7:00 P.M. Drill Time

Rain continues to fall over Cambria County. Amounts have averaged about 4.30 inches during the last 12 hours. Heaviest amounts have been in the vicinity of Johnstown with Stoney Creek Twp. reporting 5.30 inches; Richland Twp. and Elton near Windber each measured 5.20; and Dale Boro in Johnstown 5.10 inches.

Flooding in some places is about as serious as July 1977. Most highways are flooded in low spots or closed by mudslides. Travel is difficult and dangerous.

Strong winds coupled with the heavy rains have knocked out telephone and power lines in many areas.

Major flooding is occuring on many of the smaller streams. Especially hard hit are Chest Creek, Paint Creek, Black Lick Creek, Clearfield Creek, Salt Lick Run, Bear Rock Run, and Trout Run as well as the South Fork and Little Conemaugh Rivers. Reports of major flooding are coming from the Johnstown area.

Many persons have been evacuated from their homes; businesses are flooded; and numerous injuries reported. Calls for help are being received from all over the County and things are really getting bad in Johnstown.

If the rain doesn't let up soon, we are going to suffer a major disaster.

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THIS IS A DRILL - - - - - - - - THIS IS A DRILL - - - - - - - - THIS IS A DRILL

MID STORM SUMMARY - Release after 9:35 AM real time

INDIANA COUNTY - 7:00 P.M. Drill Time

Very heavy rain continues to fall in Indiana County. Nearly 3.50 inches have fallen during the past twelve hours. Greatest amounts have been 3.80 inches at Dilltown and 3.70 inches in Homer City.

Flooding in some places as serious as July 1977.

Most highways are flooded or closed by mudslides. Travel is difficult and dangerous. Telephone lines are failing. Cherry Tree is cut off from the outside.

Major flooding is reported on Plum, Crooked, Yellow, Blacklegs, Black Lick, and Two Lick Creeks.

Many persons have been evacuated from their homes and several injuries have been reported.

A major disaster is in the making as the rain continues heavy over this County.

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THIS IS A DRILL - - - - - - - - THIS IS A DRILL - - - - - - - - THIS IS A DRILL

MID STORM SUMMARY -- Release after 9:35 A.M. real time

SOMERSET COUNTY -- 7:00 P.M. Drill Time

Rain heavy at times continues to fall over Somerset County. About 3.75 inches have been reported in the last 12 hours.

Greatest amounts reported have been 4.60 inches from Windber and 4.40 inches from Kooser State Park.

Many highways are flooded or closed by mudslides. Travel is very difficult, and detours numerous. Telephone lines are down and the power is off over large areas.

Major flooding is reported from the Casselman River; Stoney, Paint, and Laurel Hill Creeks; and from Laurel and Coal Runs.

Many persons are being evacuated from their homes; businesses are being flooded and a few persons reported missing.

A major flood is developing with widespread problems reported from the entire County.

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THIS IS A DRILL - - - - - - - - - THIS IS A DRILL - - - - - - - - - THIS IS A DRILL

MID STORM SUMMARY -- Release after 9:35 A.M. real time.

WESTMORELAND COUNTY-- 7:00 P.M. Drill Time

Rain continues to fall over Westmoreland County. Nearly 4.00 inches have fallen during the last 12 hours.

Greatest amounts have been 4.50 inches at Ligonier and 4.20 inches at Latrobe and on Four Mile Run.

Major flooding along with damage from high winds and mudslides have caused a dangerous situation over all the County.

Most major highways are flooded or closed by mudslides. Travel is difficult and dangerous. Telephone lines are failing and power lines are falling.

Major flooding is reported on Jacobs and Loyalhanna Creeks and on Four Mile, Jacks and Slate Runs. Idlewild Park reports major flooding.

Many persons have been evacuated from their homes and a few injuries have been reported.

The Youghiogheny River is rising rapidly and major flooding is expected to develop on it tonight.

All types of emergency supplies are needed in this County as a major disaster is developing.

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FLASH FLOOD STATEMENT
NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 730PM EDT FRI OCT 6

...WIDESPREAD AND DESTRUCTIVE FLOODING CONTINUES...

THE HARDEST HIT AREAS ARE THE COUNTIES OF INDIANA...SOMERSET...
CAMBRIA...AND WESTMORELAND. A FLASH FLOOD WARNING FOR THESE FOUR
COUNTIES REMAINS IN EFFECT UNTIL TEN PM.

IN THE LAST TWELVE HOURS...HEAVY RAIN FROM TROPICAL STORM MARJIE...
RANGED FROM THREE AND A HALF TO FIVE INCHES. MOST SMALL STREAMS
AND CREEKS ARE OVER THEIR BANKS. MANY MAIN AND SECONDARY ROADS ARE
CLOSED OR WASHED OUT. POWER IS OUT IN MANY AREAS.

THE CASSELMAN RIVER HAS ALREADY FLOODED. THE CONEMAUGH RIVER AND ITS
TRIBUTARIES FROM SEWARD UPSTREAM TO JOHNSTOWN IS ALREADY OVER ITS
BANKS. THE YOUGHIOGHENY RIVER WILL GO OVER ITS BANKS THIS EVENING.

ANOTHER QUARTER OF AN INCH OF RAIN IS POSSIBLE BY MIDNIGHT...WITH
ANOTHER HALF INCH POSSIBLE BY EARLY MORNING AS TROPICAL STORM
MARJIE INTENSIFIES OFF THE JERSEY COAST.

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

BULLETIN BROADCAST IMMEDIATELY
FLOOD WARNING UPDATE

NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 825PM EDT FRI OCT 6

THE CREST FORECASTS FOR THE YOUGHIOGHENY RIVER HAVE BEEN REVISED
UPWARD TONIGHT.

LOCATION	7PM STAGE	CREST FORECAST OCT 7	FLOOD STAGE
CONFLUENCE PA	12 FEET	15.5 TO 16 FT AT 5AM SAT	12 FEET
CONNELLSVILLE	11	NEAR 18.5 FT AT 8AM SAT	12
SUTERSVILLE PA	11.5 FEET	NEAR 29 FEET AT 2PM SAT	20 FEET

THESE FORECASTS INCLUDE AN ADDITIONAL THREE QUARTERS OF AN INCH OF
RAINFALL OVERNIGHT. IF LESS RAIN OCCURS...THE RIVER WILL CREST
SOONER AND LOWER THAN THESE FORECASTS.

FLOODING WILL OCCUR OVERNIGHT AND SATURDAY IN THE LOWER MONONGAHELA
RIVER.
THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

BULLETIN ACTIVATE EBS
FLASH FLOOD WARNING

NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 1030PM EDT FRI OCT 6

THE NATIONAL WEATHER SERVICE IN PITTSBURH HAS EXTENDED THE FLASH FLOOD WARNING UNTIL TWO AM SATURDAY FOR THESE COUNTIES IN PENNSYLVANIA... INDIANA...CAMBRIA...SOMERSET...AND WESTMORELAND.

STREAMS AND CREEKS IN THIS DISASTER AREA WILL CONTINUE TO RISE THROUGH THE EARLY MORNING HOURS.

MAJOR RIVER FLOODING IS AND WILL BE OCCURRING OVERNIGHT AND SATURDAY IN SOUTHWESTERN PENNSYLVANIA.

MAJOR FLOODING IS OCCURRING ALONG THE CONEMAUGH RIVER AND ITS TRIBUTARIES FROM SEWARD UPSTREAM TO JOHNSTOWN.

EXTENSIVE PROPERTY DAMAGE HAS BEEN REPORTED.

NO CHANGE TO THE ZONE FORECASTS ISSUED AT 4PM.

MMTHIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

WEATHER RADAR SUMMARY
NATIONAL WEATHER SERVICE PITTSBURGH PA
DRILL TIME/DATE 1235AM EDT SAT OCT 7

AT TWELVE THIRTY AM...PITTSBURGH WEATHER RADAR SHOWED MOSTLY LIGHT RAIN ACROSS PARTS OF WESTERN PENNSYLANIA. A FEW PATCHES OF MODERATE RAIN ARE OVER THE CHESTNUT RIDGE AND THE LAUREL MOUNTAINS OF PENNSYLVANIA. THE RAIN IS MOVING EAST AT TWENTY MPH.
THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL...THIS IS A DRILL

THIS IS A DRILL --------THIS IS A DRILL -------THIS IS A DRILL-------THIS IS A DRILL

FINAL STORM REPORT
on
FLASH FLOOD DRILL

FOR RELEASE ON FRIDAY AFTERNOON, October 6, 1978

A very severe rain and wind-storm passed across the 4-State area on Friday, October 6, 1978. Tropical Storm Marjie moved up the lower Ohio Valley, Thursday night, and was centered in Southeastern Ohio at 7:00 AM, Friday. That was about the time heavy rains started in Cambria, Indiana, Somerset, and Westmoreland Counties in Southwestern Pennsylvania. The storm tracked through Northern West Virginia near the Pennsylvania border and was located near Cumberland, Maryland at 1:00 PM on Friday and moved to near Philadelphia, PA at 7:00 PM, Friday. All during this time extremely heavy rains fell over the drill area.

As the storm moved over the Atlantic Ocean and intensified off the New Jersey Coast, light rains fell over the 4-County area during Friday night and early Saturday morning. The heaviest 24-hour rainfall totals were in the Johnstown area, with the heaviest amounts being 6.00 at Stony Creek Boro; 5.90 at Elton; and 5.80 in Dale Boro. Most all rainfall reports were in excess of four inches, with Northern Somerset, Eastern Westmoreland and Southern Cambria County receiving more than five inches. This rain fell on ground that was already saturated from a general rain storm earlier in the week.

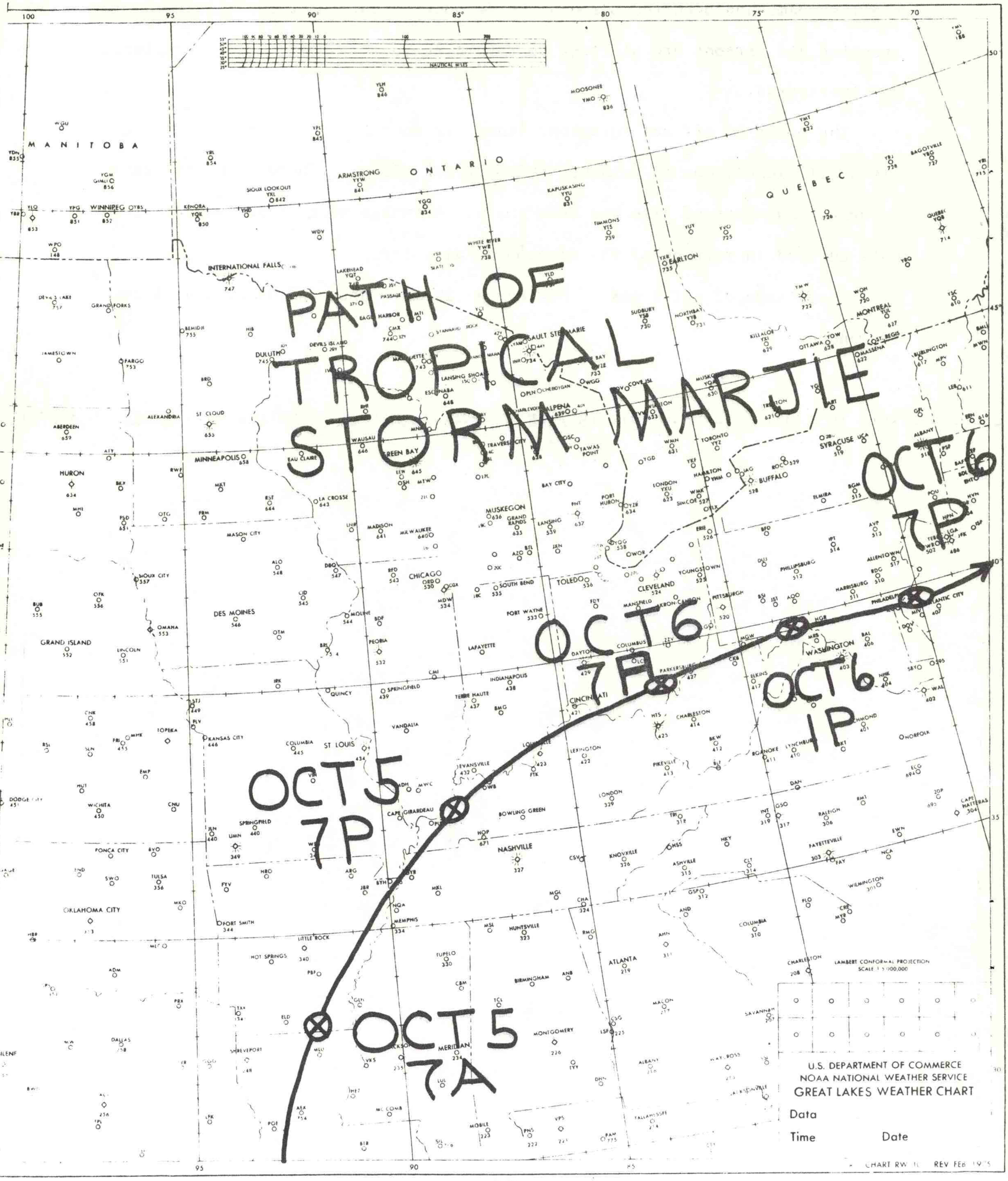
A major flood is developing on the Youghiogheny River, where crests of 4 to 9 feet above flood stage are expected on Saturday, October 7th. Sutersville will crest near 29 feet. Floods of near the magnitude of the July, 1977 flood are occurring on the Conemaugh River and its tributaries. The Bethlehem Steel gage at Johnstown is cresting near 34 feet this Saturday morning. The Ferndale crest will be around 24 feet and Seward will crest near 22 feet, nearly 5 feet below the July crest. Major flash flooding on

small streams has occurred through the 4-County area. Most small streams are receding and persons are starting to return to their flooded homes, trailers, and businesses.

The power is off and telephone lines are down in many areas. Most highways are still closed, due to washouts and mud/rock slides. There have been many injuries, but loss of life has been small. Warnings were issued and people were advised in advance of the developing disaster.

Assistance of all types is now needed in this area and damages will be tremendous.

----------THIS IS A DRILL --------THIS IS A DRILL--------THIS IS A DRILL --------THIS IS A DRILL


PATH OF
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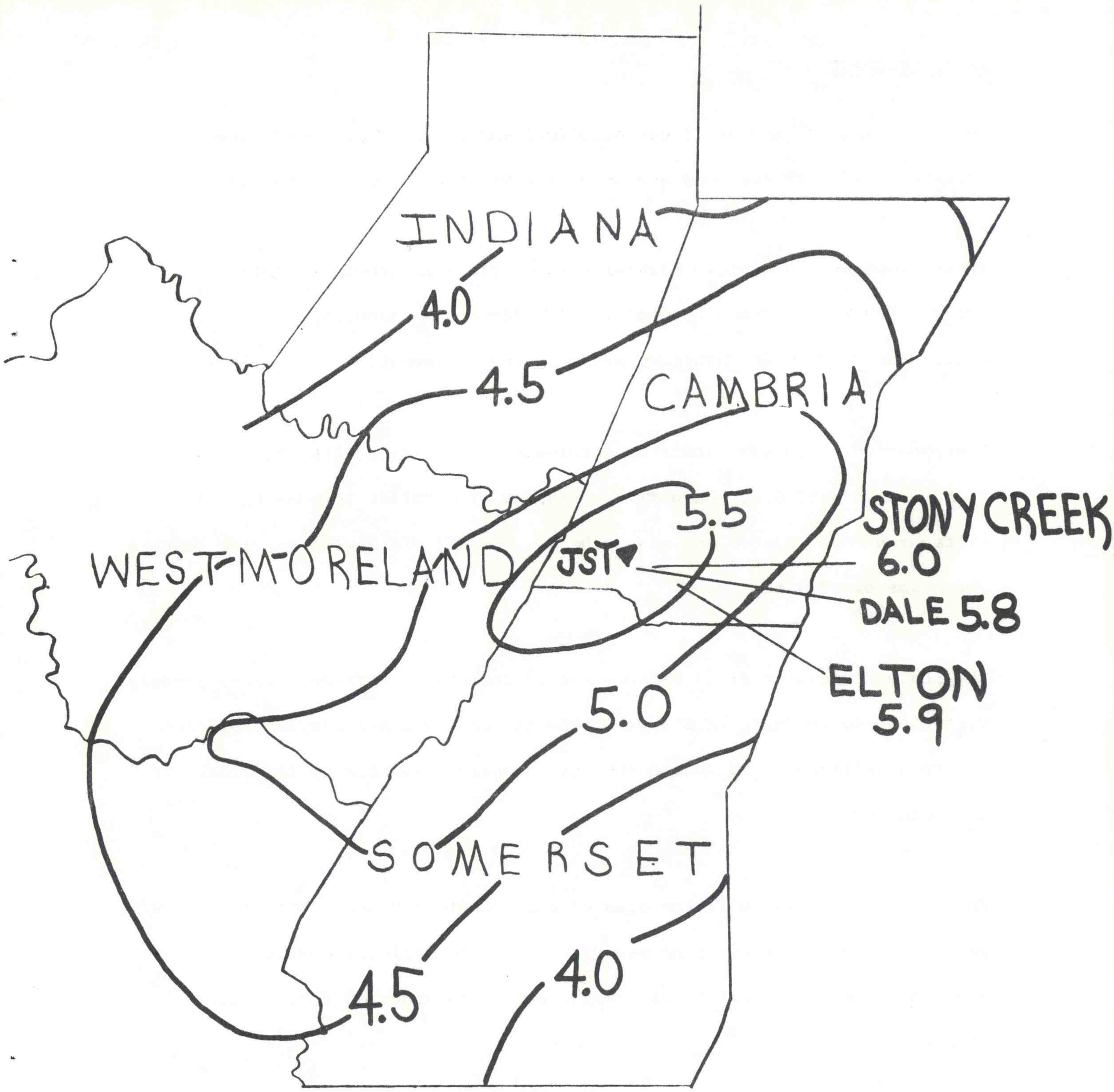


24 HOUR RAINFALL ENDING 7AM OCT 7

MEDIA COVERAGE

Media coverage of the drill was excellent and included pre-event news releases. Five TV stations and several newspapers were in attendance.

TV stations were Johnstown Channel 6 which did a 10 minute feature on their 6PM news. Altoona Channel 10 and Pittsburgh Channels 2, 4 & 11. Radio station WJAC in Johnstown also covered the event.

Newspaper coverage was outstanding throughout the state with the Johnstown Tribune Democrat, Greensburg Tribune Review, The Valley Independent, the Pittsburgh Post Gazette and many others. The UPI did a wire service feature which was excellent.

The State Council of Civil Defense Public Information Officer worked closely with the Meteorologist in Charge of the National Weather Service Forecast Office at Pittsburgh to obtain the best coverage possible by the broadcast and print media.

The Public, especially in the area of the Johnstown Flash Flood of July 1977, was well informed of the combined efforts of the National Weather Service and the State Civil Defense to provide better warnings on future flood problems.

WILLIAMSPORT SUN-GAZETTE — OCTOBER 6-1978 (FRIDAY)

Four Counties Test Flood Warning Setup

JOHNSTOWN, Pa. (AP) — Four western Pennsylvania counties participated in a flash-flood drill that got under way today to test reactions to a disaster similar to the 1977 Johnstown Flood.

All aspects of a sudden flood were to be simulated, including evacuations to mass care centers, mock accidents and reporting of flood conditions on area streams.

The test was sponsored by the National Oceanic and Atmospheric Administration and the state Council of Civil Defense.

The rainfall and flood levels were based on a storm that hit the Ohio River valley in 1918. Forecasts and flood statements were prepared from data on that storm.

Analysis of the results were made in the four participating counties — Cambria, Indiana, Somerset and Westmoreland.

"In light of our history of flooding, the City of Johnstown obviously needs a drill of this nature," Mayor Charles Tomljanovic said when the drill plans were announced.

"It will provide an invaluable learning experience for the people of the city and the administration, and it will enable us to better plan and react in the event of a disaster of any type in the future," he said.

Johnstown Tribune-Democrat, Saturday, October 7, 1978 13

Rain-Gauge System Worked

BY BILL DICKSON
Of The Tribune-Democrat

EBENSBURG — Cambria County's new Civil Defense rain-gauge program not only kept on top of the simulated rainfall and river-risings in Friday's drill — it even flashed flood warnings ahead of the National Weather Service.

That was what it was supposed to do, of course.

To accomplish that was a primary purpose of the multi-county phase of the exercise here at the CD Emergency Operations Center in the basement of the courthouse annex.

Major Improvement

The fact it worked was hailed as a major improvement over the way things were when flash flooding caused heavy damage and the loss of many lives in the July 1977 disaster. Without such a warning system then, the torrential rainfall and rapidly rising streams and rivers caught everyone flatfooted.

Robert Stimmel, director of the CD Central Area (Selinsgrove), told the nearly 60 participants just before the drill began:

"Our flash-flood self-help warning network system should be able to predict trouble and go to work even before the National Weather Bureau in Pittsburgh sends out alerts.

"Then, as the situation in the drill progresses, you'll have to cope with emergency situations that arise."

After the two-hour simulation was over, Mr. Stimmel and Elmer Schenk, county CD chief, called it a complete success.

The flash-flood warning system, funded by the National Weather Service, is being developed in Pennsylvania by the state Council of CD on a county-by-county basis.

Last month this county received commendations from both the weather service and state CD for setting up one of the best systems in the state.

Evaluated Reports

Friday's exercise here differed from the one in Greater Johnstown in that those in the CD center began by evaluating rainfall and river height reports received as though a storm was taking place, and then met simulated emergency problems existing in a wide area of the county.

Agencies that took part included the weather service, state CD, Red Cross, Salvation Army, state police, National Guard, nurses from Laurel Crest Manor, amateur radio nets, county commissioners, Mainline and West Hills police, PennDOT, Forests and Waters and the sheriff's office. Participating in the operations room was former CD Director Mike Kreskosky.

As rainfall and river height reports were collected from the county's network of volunteer observers, forecasts of flood danger were determined and sent to the weather service.

Based on rainfall readings, taken from an actual storm in Ohio 60 years ago, the CD center was able to send Johnstown a flash-flood watch alert, a flash-flood warning (more serious than a watch) and an evacuation recommendation, CD Director Schenk said.

"We also sent five river crest predictions to Westmoreland County and three rainfall averages to Indiana County."

Report Received

Soon after the drill had started, a report was received that the Solomon Run in Johnstown was eight feet deep and that the Stonycreek River was at the warning stage.

Major flooding then occurred along the Conemaugh River and its tributaries from Seward to Johnstown. As the storm abated Johnstown was isolated and had five feet of water downtown.

While such reports were being received, trouble-shooting desks in the CD center were being observed as to how they handled situations such as mud slides and flooding on routes 56, 403, 22 and 422; and requests for drinking water, pumps, falling power and phone lines in the Prince Gallitzin State Park area.

The Tribune-Democrat
Saturday, October 7, 1978
Metro
Page 18

4-County Drill Rated Highly

By BILL JONES
Of The Tribune-Democrat

A four-county flash-flood drill conducted Friday was termed a success by Civil Defense and National Weather Service officials. There were fewer problems encountered than had been anticipated.

An evaluation of the drill was held Friday afternoon at the National Guard Armory near the Johnstown-Cambria County Municipal Airport. The evaluation included reports from the four counties — Cambria, Somerset, Indiana and Westmoreland.

Centered on "Storm"

The drill centered on "Tropical Storm Marjie," which supposedly swept up the Ohio Valley and dumped up to six inches of rain on the four-county area. For the most part, the drill was conducted on paper, except in Johnstown, where the city simulated an actual disaster, complete with emergency vehicles, casualties, evacuation of a portion of Hornerstown and road blocks.

"In going around this morning, I was tremendously impressed with the cooperation we found," said George Schielein of the National Weather Service in Pittsburgh.

"This was a learning exercise," Bill Long of Pittsburgh, representing the State Council of Civil Defense, said. "We were very well satisfied. It went just as planned."

Volunteer rain-gauge observers throughout the four-county area had been given instructions on rainfall and emergency conditions to report to their respective county CD emergency-operations centers at specified times. Personnel at the county EOCs then had to respond as they would in a real flash-flood situation.

"It was kind of a busy morning," reported Elmer Schenk, Cambria County CD director. "I think overall the whole thing went very well. I know those phones were going all the time. Just how many observers called in I really don't know. To the best of my knowledge, we had no real hitches."

2 Jobs Too Much

One thing he learned, he said, was that the county director should not wear the dual hat of flash-flood coordinator. There was just too much going on for one person to handle both jobs. His feelings were echoed by James Welsh, Somerset County CD executive director.

Mr. Schenk said there were a few problems uncovered, but added that his organization would work on those. He said there were plans to add stream patrols in the future.

Mr. Welsh estimated that 85 percent of the calls came through during the drill in Somerset County, and termed that adequate. Two things he said the drill showed were a need for an adequate number of telephone lines and a need for at least two river gauges on the Casselman River.

A-2 Pittsburgh Press, Sat., Oct. 7, 19

4-County Flood Drill Passes Test

By JOE GRATA
Press Staff Writer

EBENSBURG — Flood-prone Cambria County has taken another step to try to prevent recurrences of the tragedies which have struck so often.

In the county courthouse here yesterday, officials went through a "dry run" of a major rainstorm in the first multi-county test of a Civil Defense-National Weather Service Flash Flood Self-Help Warning System.

With a few exceptions, officials were relatively pleased with the drill, which also included Somerset, Indiana and Westmoreland counties.

They used a mythical tropical storm named "Marjie," which dumped up to 5.5 inches of rain on the mountainous region over a 24-hour period.

It supposedly caused rivers and streams to overflow their banks, but volunteers who will handle such developments in the future reported the information so that people could be evacuated from flood-prone areas.

"Marjie" supposedly knocked out power lines, caused mud slides, blocked roads, cut off communications and left entire communities without water and other utilities.

In Cambria County, for instance, volunteers monitored rainfall and river gauges at 33 locations and fed the information to the courthouse here.

Various officials, including volunteer firemen, county Civil Defense people, local police and municipal representatives, used the data to pinpoint locations of flooding, the severity and the time.

Dean Braatz of the National Weather Service said volunteers "hit it within a half foot" with their flood predictions based on the rainfall deposited by "Marjie."

Elmer Shank, Cambria County Civil Defense director, said the mythical storm left considerable property damage, "but I didn't see any loss of life . . . we got the warnings out in time."

He did admit "a bit of a problem" with communications, adding that's why everyone went through yesterday's drill -- to iron out the bugs.

They dispatched a helicopter loaded with medical supplies to Johnstown, where some roads were closed and people evacuated to add a touch or realism to the mock disaster.

Mock disaster or not, Johnstown area people know all too well the ravages of floods, because the city has been flooded 22 times since 1808 and last summer 136 communities were affected and 76 persons were killed when a storm hit unexpectedly.

Flood Drill

'Disaster' Hits City

By JIM SIEHL
Of The Tribune-Democrat

A screaming wail of an early-warning emergency signal at 9 a.m. Friday in Hornerstown triggered a mock flood disaster of a that had all the authenticity of real-life drama. Only the blood and broken bones were missing.

The blasting siren soon was joined by shrill tones of fire trucks and ambulances arriving on the scene.

In the 600 block of Oak Street, firemen were laying hose, ladders were being placed against houses and immediate attention rendered to a dozen "injured" people.

The "victims" were lying on sidewalks, in yards and on porches.

"Internal Injuries"

Barbara Bishop, an emergency-medical technician with the Seventh Ward Ambulance Service, knelt before a "victim" who was wearing a tag with the words "internal injuries."

"Quick," she said with alarm. "He's in shock! We got to move him!"

Meanwhile, she was applying a facial mask hooked to a portable oxygen supply.

The other "victims," with their assortment of designated injuries, were equally bad off. A woman had a punctured lung. There were men with head and spinal injuries and several suffering from shock.

Two men, lying beside a tree, a had broken leg and broken pelvis, respectively.

During the early minutes, there was anxiety by a city fire official over a need for more ambulances.

Then, unexpected problems began developing — "dirty tricks" not in the game plan and meant to complicate and test the ability of the personnel to react and make alternative decisions.

Explosion Reported

There had been an explosion at the Meadowvale School and the building had to be abandoned as a prospective area to transport evacuees from the neighborhood.

A section of Horner Street had been closed by debris from flooding conditions. Emergency vehicles would have to find another route to the scene.

At 9:19, a radio call alerted firemen that a fire had broken out at the Trinity Lutheran Church, a half-block away along Oak Street.

Immediately, an engine company responded and in less than a minute was in action with hose and ladders.

On the negative side, a telephone alarm had gone into fire headquarters eight minutes earlier informing firemen of the church blaze. There was no immediate explanation for the communication lag.

While police, firemen, Civil Defense personnel and volunteers were going door-to-door urging residents to evacuate the area, Mayor Charles Tomljanovic was seen moving from victim to victim expressing his concern.

Counties Pass 'Flood Watch'

By PAUL TESKE
Tribune-Review Staff Writer

A test Friday showed that the four-county area is now better equipped to provide warnings prior to flooding similar to the disaster which struck the Johnstown area in July 1977, according to civil defense officials.

"We are very well pleased with the operational procedures. The test of the system showed it works efficiently," said William Long, consultant to the Pennsylvania Council of Civil Defense.

Long, former flash-flood consultant in Pennsylvania for the National Weather Service, made the comment at Westmoreland County civil defense headquarters in Courthouse Square, communications nerve center for the three-hour drill.

Cambria, Indiana, Somerset, and Westmoreland counties participated in the drill, the first multi-county test in the nation of the new Flash Flood Self-Help Warning Systems.

Observers reported rainfall and river conditions, simulated from records of a storm 60 years ago, to headquarters as a basis for implementing flood-emergency measures.

"We had good informational reports from the outlying counties," related James Laffey, new CD executive director in Westmoreland. "That was the trouble last July. When the Johnstown flood hit, we had no warnings from Cambria, Somerset, and Indiana counties that the flood waters were coming downstream into our county."

Long said that this is the aim of the system: to provide widespread alerts "because flood waters don't stop at county lines."

Westmoreland has had a flash-flood warning system in effect since 1972, the first in the state. It was developed by John Chrin, who was then civil defense director, and Elwood Leslie, executive director of the Westmoreland Conservation District and flood coordinator for the county CD.

Leslie this week received a certificate of award from George Cressman, director of the National Weather Service, in recognition of "significant public service" in developing, coordinating and maintaining that program.

Laffey said Westmoreland's system is being used as the prototype for the statewide network, and thise, in turn, will serve as a guide to national systems.

According to Long, the state's goal is to have all 67 counties operating a flash-flood warning system by October 1979. So far, 54 counties have signed agreements.

After Pennsylvania's system is operational, the timetable calls for Kentucky, West Virginia, and Virginia to be ready to function in the network by 1981.

The warning system is a new program funded by the National Weather Service.

Flash flood drill

Four district communities will participate in a flash flood drill tomorrow and Friday to test the effectiveness of the novel Flash Flood Self-Help Warning Systems designed for Westmoreland County and three other counties.

Sponsored jointly by the National Weather Service and Pennsylvania State Council of Civil Defense, the test will also cover Cambria, Indiana and Somerset counties. It is the first multi-county exercise of its kind in the nation.

Among observers taking part in the program for Westmoreland County are Emil Pawley of Smithton, John Sheppard of Jacobs Creek, Percy Harshman of Sutersville, and Jack Huber of West Newton. All three communities are located on the banks of the Youghiogheny River.

The program will include a review of flash flood programs in each of the four counties tomorrow afternoon in the 876th National Guard Armory opposite the Johnstown Airport.

Civil Preparedness Executive Director James K. laffey and Flash Flood Coordinator Elwood Leslie will coordinate the drill scheduled Friday for Westmoreland County.

According to Col. Oran K. Henderson, Director of the State Council of Civil Defense, the actual drill will take place from 8:45 a.m. tgo 11 a.m. Each county will operate from its own base of operations or Emergency Operations Center.

A storm that actually occurred about 60 years ago in the Ohio Valley will be used as the basic scenario for the drill, Henderson said.

The exercise will be a response to rainfall and river conditions reported throughout the morning by the county flash flood network observers using the same system and procedures that would be implemented in an actual severe rain storm. As the rainfall reports are collected, the flash flood coordinator and other assistants in the county will prepare forecasts with their existing procedures, prepare forecasts with their existing procedures, prepare flood statements for release and take those measures they would under an actual flood emergency.

"The degree of public participation is to be determined by each participating political subdivision," Henderson stated. "This is essentially a paper and communications exercise with the local government's response written rather than actually implemented. However, each community is free to use this test to the degree they feel will best serve their local needs.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL WEATHER SERVICE
River Forecast Center
905 U.S. Post Office & Courthouse
Cincinnati, Ohio 45202

October 12, 1978

Mr. Elmer Schenk, Director
Cambria County Civil Defense
Court House
Ebensburg, PA 15931

Dear Elmer:

I wish to thank you and your staff for participating in the "Flash Flood Training Seminar and Drill" on October 5-6, 1978. Its success weighed heavily on the dedication of those persons giving of their time to assist you in developing a Local Flash Flood Warning Unit.

I enjoyed my association with your staff during the drill. I hope I was of assistance to your flood forecasters. I felt the group of volunteers on your staff did a tremendous job. They were eager to learn and were very cooperative. You should be very proud of their accomplishment.

May I share with you my observations taken during the drill, some of which I have discussed with Bob Stimmel. I offer them as suggestions that you may want to consider to strengthen your Flash Flood Warning Unit.

1. As pertinent information is received over teletype make several copies so each function of the warning unit has access to the information.

2. Relay any pertinent flood information as quickly as possible over the Mainline Police Radio network.

3. Supply several clipboards for each function of the warning unit to use. For example, clipboards containing (a) radar reports, (b) watches and warnings, (c) flood statements, (d) rainfall and stream reports, (e) information from SCCD, etc.

4. Install an intercom so important information can be given to the entire staff at one time.

5. Give unique names to rainfall and stream observing points in Johnstown to eliminate the confusion of where the data is from.

6. Add another person to the flood forecasters staff to handle the smaller streams in the Johnstown area. This forecasting function uses the categorical graph.

7. Place status boards for all to see containing the stream forecasting locations and their current stages and time, if available, the forecast crest, plus any remarks, i.e.,

Location	Time	Stage	Forecast Crest	Forecast Time	Remarks

8. Display a large county map to plot rainfall reports. By using a color code several time periods of data can be plotted for one to see at a glance.

9. Have the flood forecasters prepare a history of flood hydrographs for their use. Use hydrographs during a flood to estimate times an event will occur, such as going above or below flood stage, etc.

10. Train your staff to be specific when requesting information from other counties, the National Weather Service, etc. Also advise persons with incoming requests to be specific. This may involve the use of meteorological terms they aren't used to at this point.

If I can be of assistance in the future, please call on me. Best wishes for continued success in the development of a Flash Flood Warning Unit for Cambria County.

Sincerely,

Dean T. Braatz
Flash Flood Hydrologist

cc: R/H, ER
WSFO, PIT
Bob Stimmel

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL WEATHER SERVICE
2328 Federal Building
Pittsburgh, Pennsylvania 15222

October 19, 1978

Elmer Schenk, Acting Director
Cambria County Civil Defense
Court House
Ebensburg, Pennsylvania 15931

Dear Elmer:

We want to again thank you for all your help with the Flash Flood Exercise. We have gone over all of our reports on the exercise and it was excellent.

It is extremely important that your headquarters collect all the precipitation and river stage reports for Cambria County and from adjacent counties if the program is to work. The City of Johnstown can then contact your office for flood forecast stages on Stony Creek at Ferndale, the Little Conemaugh at East Conemaugh and the Conemaugh at the staff gage near Bethlehem Steel.

If the integrity of the program is to be maintained you must have the total rainfall picture in your area as well as the river stage information.

Our sincere thanks and appreciation for the excellent job you are doing.

Sincerely

George H. Schielein
Meteorologist in Charge

cc: Dean Braatz
ORFC CIN

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL WEATHER SERVICE
National Weather Service Forecast Office
2328 Federal Building
1000 Liberty Avenue
Pittsburgh, PA 15222

October 23, 1978

Dear

I wish to take this opportunity to thank you personally for your cooperation in the recent Flash Flood Drill Exercise in which you participated on October 6, 1978 in your County.

This multi-county drill was the first of its nature in this nation, and as such will serve as the MODEL for future county flash flood programs and drills. Through this drill you, your County Civil Defense and the National Weather Service have learned how to communicate more effectively and to further improve the system.

Without your voluntary cooperation this program would not operate since you are the "eyes and ears in the field." You are the first and most essential link in data acquisition to your County Coordinator and the National Weather Service (Pittsburgh Office), to set the County Warning Program into action.

I sincerely express my gratitude to you for your assistance in the recent drill and hope you will continue to remain an integral and active participant in the National Weather Service/County Flash Flood Program.

Remember, the next time it rains hard, you will know what and who to notify by the phone. Please keep up the good work and God Bless You.

Sincerely,

George H. Schielein
Meteorologist-in-Charge

GHS:dcd

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Room 2328 Federal Building
1000 Liberty Avenue
Pittsburgh, Pennsylvania 15222

Date: October 19, 1978

Subject: Flash Flood Drill
October 6, 1978

To: George H. Schielein
MIC, Pittsburgh WSFO

From: Raymond Visneski
Theresa R. Rossi TR

The two drill participants at the Weather Service Forecast Office in Pittsburgh were prepared by eight AM, well before the drill began. We had copies of all statements and warnings, plus maps showing the path of the storm and the amount of rainfall expected. As rainfall reports came in, we logged the location, time, amount of rain, and any remarks reported. At numerous times during the drill, Civil Defense people called and asked for a QPF (Quantitative Precipitation Forecast). They were told how much more it would rain, for how long, and when to expect the precipitation to diminish.

Several callers reported difficulty getting through. They got busy signals and had to call back. This is how it would be in real life.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
2328 Federal Building
Pittsburgh, Pennsylvania 15222

DATE: *October 20, 1978*

FROM: *Ralph J. Folino, Overseer* Ralph J. Folino
Hydrologist, WSFO PIT

SUBJECT: *Indiana County Flash Flood Drill*
8:30 - 11:00 AM EDT Friday, October 6, 1978

TO: *George H. Schielein*
MIC, WSFO PIT

Mr. Paul White, Western Area Civil Defense and I were the overseers in this Flash Flood Drill. Mr. Roger Stivison, Director, the Assistant Director and two girls were on duty well before the start of the drill. We arrived about 15 minutes before drill time because Mr. White picked me up at the motel.

The drill was run from the garage of Indiana County's two rooms. In one room were the director and assistant director. The other room was quite large with the teletype and the two girls at either end of the room receiving the calls. This was quite a job to take care of two rooms to make sure everything was going smoothly. The Civil Defense Western Area Director did not do much in this drill since I was present. The teletype messages came in on time of the schedule. They were hanging on a billboard in sequence by the numbers.

Most rainfall came to the Civil Defense by the envelopes which I had before the drill and the calls by the observers to the Civil Defense Center. We had two calls from the Cambria County drill and also one call from the Westmoreland Drill with the Seward Forecast. Real time was used in all operations locally. A spot check indicated over 70 per cent of the rainfall and river data were called in during the drill. Coordination with WSFO Pittsburgh was made by the Indiana Civil Defense Office.

In closing, the Indiana County Civil Defense did a good job in this drill.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

2328 Federal Building
Pittsburgh, Pennsylvania 15222

DATE: October 23, 1978

FROM: Charles H. Ryland CHR
Donald L. Willson DLW

SUBJECT: Flash Flood Self Help Drill, Johnstown, Pa.
October 6, 1978

TO: George H. Schielein
MIC, WSFO, Pittsburgh

Space provided Civil Defense was too small, but feel Civil Defense did a creditable job under the circumstances in such cramped quarters. CD's normal quarters are in the Public Safety Building, which is being remodeled.

Rainfall and stage readings from station 25 were on time and logged as they came in. We were told that observer #8, Mr. Lehman on Solomon Run would report directly to Cambria County Civil Defense, but reports came in to Johnstown CD. They were immediately relayed to Cambria County CD.

We found some calls were coming into another office and it took up to five minutes to learn of receipt of the calls. The Fire Department had a disaster excerise going at the same time and this added to the confusion. Over all the excercise went off well considering the size of the quarters.

We recommended that when they move back into the Public Safety Building, they make sure they have adequate phones and Civil Defense be on the spot. It was also recommended that when forecasts and warnings are received, they be typed as they are received and copies be made and distributed to the Civil Defense personnel at each phone immediately.

We commended CD Director Henger and his staff on their part in the excercise.

CRITIQUE NOTES

CAMBRIA COUNTY
Civil Defense Observer - J. Robert Stimmel

The over-all exercise was considered to be most successful.

Cambria County exercise provided the following points to be considered:

1. Communication Centers were too far removed from actual action center.

2. An over-all County Map for the status of the situation is a necessity.

3. Common terminology needed to quickly identify Staff Gauge locations.

4. All messages should be reproduced in numbers needed to keep all coordinators informed.

5. Clipboards needed for messages from Rain Gauge Observers.

6. Clipboards needed for Weather Bureau Messages.

7. County Director can not be the County Coordinator.

Two Cambria County Commissioners were present for the entire exercise.

Cambria County Civil Defense staff members were present to field any problems presented to the County by the Johnstown Exercise.

To maintain awareness and permanence-

1. Have special events:

   a. picnics
   b. meetings
   c. identification
   d. letters of appreciation
   e. recognition
   f. drills

2. Conduct training sessions.

3. Need job descriptions, SOP's, & back-up personnel

CRITIQUE NOTES

INDIANA COUNTY
Civil Defense Observer - Paul White

The October 5 afternoon session was helpful in preparing exercise participants for their role in the on-site activity within counties the morning of October 6.

The October 6 morning activity went very well. All teletype messages were received on schedule and posted. Actions taken on the messages, i.e. alerting the public and emergency staff of the various watches and warnings, were simulated.

Reports from rain gauge observers were received by telephone with little or no delay from scheduled times. Apparently there were no delays due to lack of telephones or operators.

Reports from unwarned locations were pre-positioned in envelopes within the EOC and were opened on schedule. Actions taken, based on reports, were simulated. A log of all actions taken was maintained.

Considering the short time available to prepare for the drill, the staff performed very well. The National Weather Service overseer, Ralph Folino was most helpful in keeping the activities moving. The drill accomplished its purpose of providing valuable training for the Indiana County staff.

During the October 6 afternoon critique too much time and emphasis was devoted to matters not directly related to a warning system, i.e. establishment of communication facilities for use during disaster operations or recovery operations. An effort was made to explain the difference between warning communications and post-warning communications.

CRITIQUE NOTES

SOMERSET COUNTY
Civil Defense Observer - Lawrence B. Towsey
National Weather Service Observer - David Sisk

The day-to-day staff of Somerset County handled the exercise in good fashion. The staff was augmented by additional county employees.

Several deficiencies surfaced along with operational procedures needing revision.

Deficiencies included:

Individual other than director or executive director, should be assigned duty as flash flood coordinator.

Staff assignments need to be reviewed and new assignments made.

Maps and display boards needed in Operations Room.

Additional telephones needed in E.O.C.

Message form needed.

County-wide communication system in addition to telephone needed.

Due to limited size of trained staff present during exercise, many of the functions associated with disaster operations were neglected, emphasis was directed at flood forecasting only.

Future exercises of this nature should have more input from Civil Defense so proper message forms are used and Civil Defense disaster operational functions receive more play.

As a training tool the exercise accomplished its purpose of instructions in utilizing rainfall information to predict flooding conditions on various streams within the County.

EOC is not completed - this handicapped overall handling of drill.

Good to have extra phones -- should have 3 or 4 available.

Need only 1 person to send out data to administrative personnel.

Should supply Observers with extra phone numbers, leaving Administrative phones open for other use.

In real situation need Flash Flood Coordinator to do computations, leaving Executive Director free to submit Situation Reports.

Need Maps, Situation Boards, Extra back-up personnel.

Check list needed - considered lack of this list a deficiency.

Drill would have been easier if time had not been compressed.

Recommend that Rain Gauge Observers should be trained for 3 months prior to drill.

Log Sheets - Need larger space for remarks - over-all improvement needed. (In actual disaster operation message form would be used, then another person make up log sheet) Message Form should consist of original and carbons or use duplicating machine to make copies.

Inter-County Communications - one person delegated to do this -- HAM operators, Fire Network, etc. will be used as back-up.

Feel that since Somerset Co. is rural and rain gauge stations are an asset for early alerting of officials, particularly, can give idea of areas where no rainfall, but can assume from reports in adjacent areas. 12 Observers in Co. -- one location can handle calls -- could handle up to 15 stations (Will probably add 3 more)

For Drill purposes staggered calls worked very well.

Communications is key to Disaster Operations -- back-up system is essential.

From Bill James observations during drill - feel that Somerset Co. needs at least 2 River Gauges on Casselman River.

KEY**
Drill has opened up importance of relating information to Counties downstream from Headwaters.
Feel that with rainfall and F.I. graph can project more easily what might occur. Graph does not project intensity.

Feel that this drill indicated General Flooding rather than Flash Flooding in Somerset County or both occurred at same time.

Flood Stage graph was help, but did not have time to consult as often as should have been done.

TTY messages worked fine, but used tape copies in order to conserve time. Messages should have been spaced farther apart. Without hard copies probably we would have made less use of TTY messages due to compression of time and tabulation of rainfall data from observers.

CRITIQUE NOTES

SOMERSET COUNTY
PAGE 3

Sent 5 letters out to observers who are TWP. Civil Defense affiliated and they will submit critique of drill.

For Drill purposes feel that zone forecasts except for initial transmission should be eliminated.

If TTY problems encountered NOAA weather radio at HQS would be immense aid in giving us warning, watch, statements, and early radar summaries could be received immediately and initially compared to TTY transmission via WSFO Pitt to Har to CD Selinsgrove back to Somerset.

Made little use of last Flash Flood Warning Update around 9:50 p.m. with communications out and people know they have serious problems to contend with, etc.

CRITIQUE NOTES

WESTMORELAND COUNTY
Civil Defense Observer - Victor Elish
State Flash Flood Coordinator - William R. Long

On October 6 the four-county flash flood drill was held. Mr. Bill Long and I were assigned as observers in the Westmoreland Office for the purpose of assisting, monitoring and basically keeping the drill going in relation with the simulated time sequences.

Mr. James Laffey, County Civil Defense Director and Mr. Elmer Leslie, Flash Flood Coordinator were the key county personnel involved in this exercise. There were 3 other individuals who acted as operators, handling the phone calls coming in from their gauge monitors.

The drill began exactly on time and ended the same way. On the whole, the drill went very smoothly. As far as I was concerned, the operation was handled in a noteworthy manner.

As far as the stated schedule, everyone did their part at their assigned time. The monitors were on schedule, the teletype messages were prompt, (thanks to Bill) and the phone calls made to Western Area, Adjacent Counties and to key county officials were made at desired times.

In conclusion, I must say that Civil Defense should feel confident and fortunate to have such a program going in Westmoreland County. And in particular, to have an able individual such as Mr. Leslie in command.

All persons working with the exercise were on duty well before the start of the drill. There was sufficient time for last minute instructions.

During a prior meeting on September 19, 1978 with Mr. James Laffey, Civil Defense Director; Elwood Leslie, Flash Flood Coordinator; and Don Shoaf, Dispatcher, Communications Center, I was assured that they ran through this type of exercise each time there was heavy rain, so they were already experienced. As smooth as the drill ran, this was evident. They started their flash flood program over six years ago.

The drill was run from the new Civil Defense office in the Court House. This caused a lot of extra telephone work, as the CD teletype is in Westmoreland Manor (County Home on Soute Route 119). The first few teletype messages came in late, as the Manor had trouble getting through by telephone. This was solved when one of the Manor employees came and kept one telephone line open from the Manor to the CD office. We had hard copies of the teletype messages to use as we recognized this problem in advance, and didn't have to read all the messages over the telephone.

When they said teletype message number so and so was complete, it was released to the drill participants at that time. As near as I could determine, each taped message came out from Indiana Western Area office right on schedule.

When the CD office move is completed, there should be three teletypes in the area -- one at the Manor; one in the CD office; and one at the Police Station.

Most rainfall and river reports came to the Police Communications Center at a different location and had to be called to the CD office. The persons collecting data, making computations and relaying information were Don Shoaf, Dispatcher, Communications Center; James K. Laffey, CD Executive Director; Elwood Leslie, Flash Flood Coordinator; Stella Poerio, Secretary, CD Office, and a representative from the Manor. Real time was used in all operations locally. A spot check indicated over 80% of the rainfall and river data were called in during the drill. Coordination with WSFO, Pittsburgh was made by the local CD Office.

Rainfall averages for the Stoney and Conemaugh drainage basins were received for preparing the Seward River Forecast from Cambria County. I designed a form for use in the drill for this forecast point. It should be reviewed and revised by NWS before it becomes an integral part of the system. The Seward forecast was relayed to Indiana County.

Certain persons in the County were alerted with the flash flood warnings in accordance with their operating procedures. Jack Huber from West Newton, PA, who takes care of the Youghiogheny River forecasts was present for part of the drill. Flood forecasts for that stream was received by teletype.

Mr. Huber is still critical of the NWS service to the area. He says they can't trust the Sutersville telemark during a rapid rise. He thinks the flood stage of 20 feet is a foot or two too high for the West Newton-Sutersville reach of the River. He thinks they need a possible procedure of their own for making a Sutersville forecast. He has fifteen years of River records. He says the average travel time from Connellsville to Sutersville is six hours. He would like to have travel times computed between Connellsville and all the main cities and boroughs down as far as Boston or McKeesport. It would appear this community could stand a visit from the NWS to discuss their wishes and wants.

Other noteworthy visitors during the drill were County Commissioner William R. Davis; TV Channel 11, Pittsburgh, PA with Linda Goldstein; Paul Teske, Tribune-Review reporter for the Greensburg paper; and Vic Elish, Assistant Director, Western Area Civil Defense.

I was pleased with all phases of the exercise in Westmoreland County.

COUNTY OF CAMBRIA CIVIL DEFENSE

Court House
EBENSBURG, PENNSYLVANIA 15931

[redacted]R
CAMBRIA COUNTY CIVIL DEFENSE
PHONES: 472-9797
472-9726
472-9727

COMMISSIONERS
[redacted]
T. T. Metzger, Jr.
W. Donald Templeton
Joseph P. Roberts

The Cambria County Flash Flood Early Warning System received its' first test Thursday and Friday, October 6 - 7, 1978.

Eleven persons made up the early warning team. They performed their assigned duties exceptionally well. The team was composed of the Flash Flood Coordinator, five telephone operators, three assistants and five persons assigned to compute river stages/crests on the three major rivers in Johnstown and four major streams in North and Central Cambria County, eleven small streams in the immediate vicinity of Johnstown. To say the least, the team did an outstanding job. River and stream stages were determined very well. Those persons computing the stages reported their findings to the flash flood coordinator and to Westmoreland and Indiana Counties. River stages were reported to Westmoreland County six times and Indiana County four times. Stream stage information could have been relayed to Clearfield County had Clearfield County elected to participate in the drill.

As a result of the drill it is my personal opinion that the County Civil Defense Director should not serve as the County Flash Flood Coordinator. From experience gained during the drill I learned there is too much to do in either position to serve effectively in both positions. I cannot speak for other counties but in Cambria County, with 3 rivers, 5 large streams and 11 small streams to cause problems the Flash Flood Coordinator will have a considerable amount of work to do coordinating the flash flood program.

There were a few problems encountered during the drill. They are as follows:

1. Telephone lines into the Johnstown E.O.C. were busy on several occassions.

2. Telephone lines into the Westmoreland County E.O.C. were busy most of the time. The person assigned to telephone Westmoreland experienced extreme difficulty "getting through".

3. A few of the 33 Cambria County rain gauge observers reported difficulty getting through to the Cambria County Emergency Operations Center. This problem was in part due to the heavy telephone traffic on the Court House switchboard. We have three toll free lines and two toll lines in the E.O.C. It was later determined that those observers experiencing difficulty trying to reach the E.O.C. elected to use the toll free lines. All observers will be advised that in an emergency they may telephone the E.O.C. collect if necessary.

4. There was apparently some delay at times, in getting rainfall reports from the telephone operators to the river stage computers although the telephone operators were in the same room as the computers, from ten to twenty-five feet away. Upon conferring with one of the telephone operators, it was discovered that the two times (actual and simulated) was confusing to the operators and that the observers feeding additional information (situation and condition reports) to the operators impeded the flow of the rainfall reports. (When you consider that a telephone call takes several minutes and the time element is compressed such as 1 min. = 12 min. and 5 min. = 1 hr. it is easy to understand how the delays occurred). Also, several observers questioned during telephone conversations with the operators if they should report on local standard time, as there was apparently some reference on the observers drill sheets to reporting on local standard time.

5. There was a little confusion at times determining which stage reports were the main river reports as opposed to stream reports. At the outset of the drill it was observed that one computer, somehow, received a stream stage report which he believed to be a river stage report. The mixup was soon corrected.

6. The NWS Hydrologist suggested maintaining additional actual contact with the NWS Office in Pittsburgh. The flash flood coordinator was not aware that actual contact with the NWS Office should be maintained during the drill as the simulated weather reports were being sent to Cambria County from State Civil Defense Headquarters in Harrisburg, thus leading to the assumption that NWS, Pittsburgh was not involved in the drill.

7. A xerox machine is definitely needed in the E.O.C. to make copies of pertinent weather reports for each river stage computer in cases such as ours where there are several river stage computers.

8. Need additional status boards on which to place information related to river/stream information - also need additional maps of County for information purposes.

9. The drill time was so compressed that the transmission of teletype messages took up to one hour (drill time) considering that it took up to 5 min. to transmit at lease one message. (Bear in mind that it takes up to 8 real time minutes to transmit some weather related information on ordinary days. In a drill situation such as ours, 8 real time minutes is equivalent to one hour and thirty six minutes.

10. To eliminate the delay in the transmission of teletype messages and subsequent delivery to the Flash Flood Coordinator - the drill observer could hand carry the messages and give them to the coordinator at specified times.

11. I firmly believe that futute drills should be spread out over a longer period of real time. A twenty four hour drill compressed into two hours in this case with 3 rivers, 5 large streams and 11 smaller streams to compute made it quite difficult considering all the action to be taken during the drill in Cambria County.

12. If a person had a question in regard to procedure, the question and answer could take 3 to 4 minutes real time which in effect would be 36 to 48 minutes drill time which certainly would detract from the operational aspect of the drill.

13. In my opinion the drill was very necessary and the experience gained will prove invaluable should it be necessary to put the system into operation.

Elmer J. Schenk Director

ELMER J. SCHENK
CAMBRIA COUNTY CIVIL DEFENSE
COURT HOUSE
EBENSBURG, PENNA. 15931

October 16, 1978

Mr. Elmer Schenk
Civil Defense Director
Courthouse
Ebensburg, Pennsylvania 15931

Dear Elmer:

I was pleased to have had the opportunity to participate in the Flash Flood Training Drill of October 6, 1978.

As one of the Flood Forecasters, I received rainfall and river stage readings from various points in the Stonycreek River Basin. These readings were used to porject river crests and potential hazardous flood areas. Some of the areas of difficulty I experienced were: confusion in the names of some of the reporting stations; one of my reporting stations was Johnstown, while there was another Johnstown station 25 and a Colver Station 25; the time constraints placed on the drill were a bit of a handicap. Time needed to do more accurate forecasting would be necessary in a real flooding situation. Time permitting, hydrographs could be prepared for use in analysis of the situation.

I am hopeful that through exercises such as this one, future loss of lives and property damage may be reduced in the event of flash flooding.

Sincerely,

Thomas A. Klaum

Thomas A. Klaum
Principal Planner

TAK/mak

* NOTE: There is only one rain gage observer station 25. The Johnstown station 25 is in fact Johnstown FIRE DEPARTMENT STATION 25.

Phones (814) 662-6801
662-4871

Township of Elk Lick Civil Defense

Richard E. Knecht, Director
P. O. Box 22
West Salisbury, Pennsylvania 15565

Summary of Simulated Flash Flood Drill

October 6, 1978

0800Hrs. Local Radio Bulletin- Flash Flood Warning

1000Hrs. Inch Rainfall - Past Hour

Some minor flooding in low areas, Notify N.W.S. - County C.D. - N.W.S. said to expect more heavy rains - called chief township supervisor and explained what may be coming.

Called Assitant Fire Chief

Called Local REACT - asked them to keep me informed of local problem areas.

1200Hrs. Still Raining

Assitant Fire Chief joins me at my E.O.C. - (My Home) We prepair 3kv generator for radio.

1220Hrs. Assitant Fire Chief - Fire Call on Siren

Also Called up Ambulance Personal

1230Hrs. Call Small Boat Owners

Come up with 6 small boats at firehall - 6 October is local holiday (No School) local Autumn Festival at Springs Pa. Main access road to festival comes from 4 lane Route 48 Maryland. Understand festival turn out is small (due to weather) 1500 people - Usually 20,000.

1315Hrs. Heavy Rain Now

Evacuation ordered for area called Piney (due to Piney Branch Creek).

Phones (814) 662-6801
662-4871

Township of Elk Lick Civil Defense

Richard E. Knecht, Director
P. O. Box 22
West Salisbury, Pennsylvania 15565

1340Hrs. First Piney resident arrives - Fire hall

Asked Township Chief Supervisor to declare state of emergency. And move Township 5 pieces of equipment to higher ground. One section of Boynton isolated due to flash flood from stripmine run off - No danger to those people. Isolated from high water Cassleman River over banks at all lower areas.

1400Hrs. Heavy Rain - Two inches in past 4 Hrs.

Residents of Boynton and West Salisbury moving to higher ground. Salisbury Volunteer Fire Department and REACT assisting in evacuation (notify) N.W.S. -- County C.D. - Telephone still working.

1400-1500Hrs. 3.2 Inches Rain

Route 219 and Route 669 Flooding - Township split in half - Power and Phones out -- Communication strictly radio - C.B. - Fire Band - Local 2 doctors, medical center on emergency power - Handling medical problems Called County C.D. via fire radio of situation - Route 219's - to Maryland still open - send message

Fire hall approximately 200 evacues food. Avalible Local. Grantsville Md. Vol Fire Dept. Handling persons stranded at Springs Festival - Food for 40,000 meals avalible from Springs Festival.

1630Hrs. Cassleman River high water mark - Approximately 40 housing units in dated

Drinking water no problem due to Salisbury Borough. Unique water system.

1800Hrs. Route 669 partially reopened

Using equipment from friends local coal company - Borrowed one generator from friends in Md. Evacues transferred to elementary school. Generator to be used there.

Phones (814) 662-6801
662-4871

Township of Elk Lick Civil Defense

Richard E. Knecht, Director
P. O. Box 22
West Salisbury, Pennsylvania 15565

As this is a paper drill it isnot 100% tested - This drill is based on an SOP that we have recently put together. Better than 50% of the SOP has been tested.

In the event of a flood of this magnitude most outside relief would have to come by air or 4 lane Route 48 in Maryland. Which is approximately 4 miles South of our location. This is due mainly because new highways in our region were never constructed

RECEIVED OCT 10 1978

LIGONIER VOLUNTEER HOSE COMPANY No. 1

Post Office Box 373
LIGONIER, PENNSYLVANIA 15658

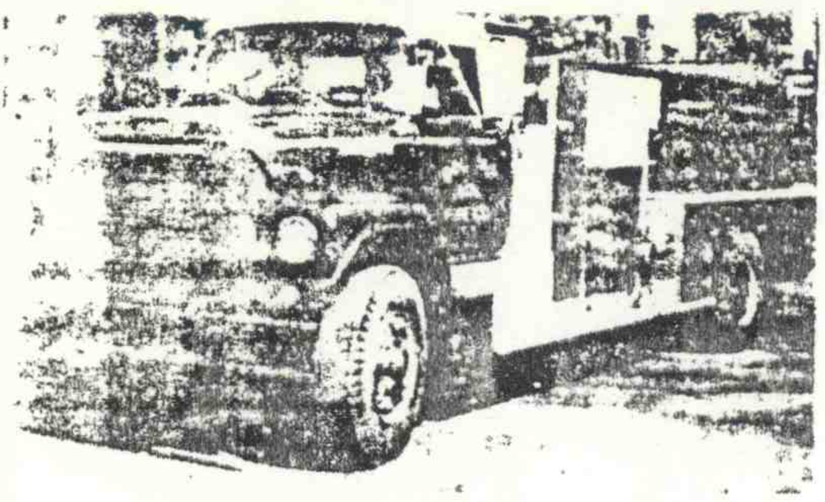
October 6, 1978

Westmoreland County
Civil Defense Director
Greensburg, Pa. 15601

ATTN: Stella

At 0945 hours our whistle was activated for General Flooding in the Loyalhanna Creek area and low lying areas. We responded our units into these areas. During this time we proceeded to use Ligonier Valley Emergency Disaster Plan. After a thorough review of the situation, it was determined the flooding was under control and our units were ordered returned to station. We continued to monitor the situation at the Fire Hall. A stand-by crew contined to stand-by until all threats of flooding had passed.

JAMES B. ST. CLAIR
Fire Chief, Ligonier Borough



Bolivar Volunteer Fire Co.

Washington Street

P. O. Box 3, Bolivar, Pa. 15923

October 12, 1978

Office of Civil Preparedness
Greensburg, Pa.

Re.: Flood Drill October 6, 1978

Gentlemen:

Following is the action taken by Bolivar Volunteer Fire Co. on receiving word of the potential flooding from Office of Civil Preparedness in Greensburg.

1. Sounded siren for General Alarm--Two Long Blasts (Different from Fire Calls, they are on 2 minute Timer).

2. Dispatch truck with P.A. System to warn citizens living in low-lying areas of Bolivar, Ribinson & West Bolivar of flooding and to leave their homes when necessary.

3. Station fire fighting equipment & men in Robinson, have 1 ambulance dispatched from Robinson to Bolivar for stand-by. Close bridge over Conemaugh River (Rt. 259) between Bolivar & Robinson when water rises to bottom of bridge.

4. Station men at bridge over Tubmill Creek between Bolivar & West Bolivar (Flood Prone Area) to close bridge when necessary.

5. Contact Fairfield Fire Co. for assistance in the West Bolivar Area, due to Bolivar Fire being unable to cross bridge over Tubmill Creek.

6. Set up Utility Truck as mobile base station if electrical power fails, otherwise use Base 220-A & 220.

7. Have Fire Police Patrol area to assist public and protect property.

8. Alert Ladies Aux. of Fire Co. to set up emergency housing & feeding at Fire Hall and Robinson V.F.W. Aux. will be notified to do same in V.F.W. Home in Robinson.

9. Evacuate prople when necessary and rope off flooded areas.

The public co-operated very well and felt these drills shou.d be held, to educate everyone what should be done in a time of emergency.

The response of firemen was 11 men our normal daytime crew, but should an actual flood arise more men would be available for they can be excused from work and school.

Sincerely,

Edward J. Speidel

Edward J. Speidel-Chief