

**Flood Operations Plan
for the Iowa Water Science Center
of the U.S. Geological Survey**

Iowa City, Iowa

Revised March 2006

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Iowa Water Science Center Flood Plan

Introduction

One of the primary goals of the and the Iowa Water Science Center (WSC) is the collection of data on flood events. Floods carry a special urgency because timing and preparedness are extremely important. Proper coverage of a major flood requires the full and efficient utilization of the manpower and equipment available to the Iowa WSC. A WSC Flood Plan must be a dynamic set of rules and guidelines that allow for flexibility while meeting the WSC's mission because no two floods are the same.

Project Alert

WSC, Regional, and Reston offices of the U.S. Geological Survey (USGS) are often called upon to furnish information on extreme hydrologic events to other agencies and to members of Congress. It is the duty of the Iowa WSC Flood Coordinator or his assistant to alert the Iowa WSC Director, or Acting Iowa WSC Director, who will in turn alert the Regional and Reston offices, to the occurrence or possibility of occurrence of such an event.

Project Alert is further discussed in WRD memorandum 97.08, dated Nov. 12, 1996, which is made a part of the Flood Plan (Appendix A).

Flood Coordination

The WSC Flood Coordinator, based upon reports received from the field offices, the National Weather Service, cooperating agencies, or other sources, will decide when a flood or a flood potential exists that requires close operational control at the WSC level. Therefore, it is extremely important that the field offices evaluate potential flood situations quickly, accurately, and objectively and then relay their evaluations to the WSC Flood Coordinator.

Operationally, the Iowa WSC is divided into the WSC Office and two Field Offices. The area of responsibility for each field office is shown in figure 1 and the location of current gaging stations are shown in figure 2. The WSC Flood Plan does not alter the basic responsibilities of the Field Office. These offices are charged with the responsibility of constructing, operating, and maintaining all gaging structures within their area of responsibility. During localized or routine flood events, assignments will be made by the Field Unit Chief, while keeping the WSC Flood coordinator informed of the situation. The Unit Chiefs will monitor the flow at gages utilizing the DCP information and phone modem at stream gages as needed. Gages that have phone lines and / or have telemetry are give in Appendices H and I.

Communication during a major flood event is essential for the proper utilization of WSC resources. All communications with cooperators, Region, Reston will be channeled through the Iowa WSC office and the Flood Coordinator or their designee, because major flood events will generally cross Office boundaries.

Therefore, during widespread flooding, the control and assignments of personnel will be handled by the WSC Flood Coordinator. In his absence, the Iowa WSC Director will act as WSC Flood Coordinator or appoint someone in their place. The Hydrologic Studies Section will be responsible for the collection of data needed for their projects. Liaison with the WSC Flood

Coordinator must be maintained to enable assignments of field parties to or from these projects as needed. The Hydrologic Studies Section will provide assistance to the Hydrologic Surveillance Section particularly for measurement of discharge at crest-stage stations, indirect measurements, and flood profiling. A list of priority sites are given in Appendix L. The flood coordinators and their area of responsibility are listed in Appendix B.

Flood Personnel

All personnel in the Hydrologic Surveillance Section are experienced in stream gaging and are capable of independent operation. Every motor vehicle operated by the Hydrologic Surveillance Section is regularly equipped with the necessary instruments, tools, and equipment to collect measurements of discharge at any given time. All other WSC personnel should consider themselves on standby during periods of extreme flooding as they may be called upon to assist the Hydrologic Surveillance Section in the collection of hydrologic information in support of the mission.

List of selected WSC personnel, their telephone numbers and their areas of responsibility are listed in Appendix C. .

Equipment

A complete set of stream-measuring and sampling equipment is maintained by each field person regularly assigned to hydrologic-data collection. A list of equipment needed for flood work is shown in Appendix D. A list of water-quality collection equipment and supplies needed for flood sampling is listed in Appendix E. Additional equipment for routine and emergency use is maintained in each office as listed in Appendix F.

Flood Samples

The determination of water-quality field parameters and the collection of event samples are very important in striving to maintain a high quality data-collection program. Few, if any, of the regularly scheduled water-quality stations are sufficiently rated in the upper half of the flow regime. In order to develop and maintain a complete rating definition, high-flow samples for suspended sediment, major chemical, trace elements, nutrients, bacteria, pesticides, and herbicides, as well as field determination of water temperature, specific conductance, pH, alkalinity, and dissolved oxygen must be collected. To facilitate this end, sample boxes have been prepared with all of the necessary bottles, labels, and paperwork needed to collect a flood sample. All samples should be returned to the WSC office as soon as possible for processing. All necessary steps shall be taken to insure the integrity of the samples, such as cooling the nutrients and use of preservatives as needed.

The WSC Flood Coordinator will determine which stations should be sampled and if there are additional sample schedules needed based on discussions with the Field Office Chiefs, WSC Water-Quality Specialist, NASQAN leader and NAWQA project chief.

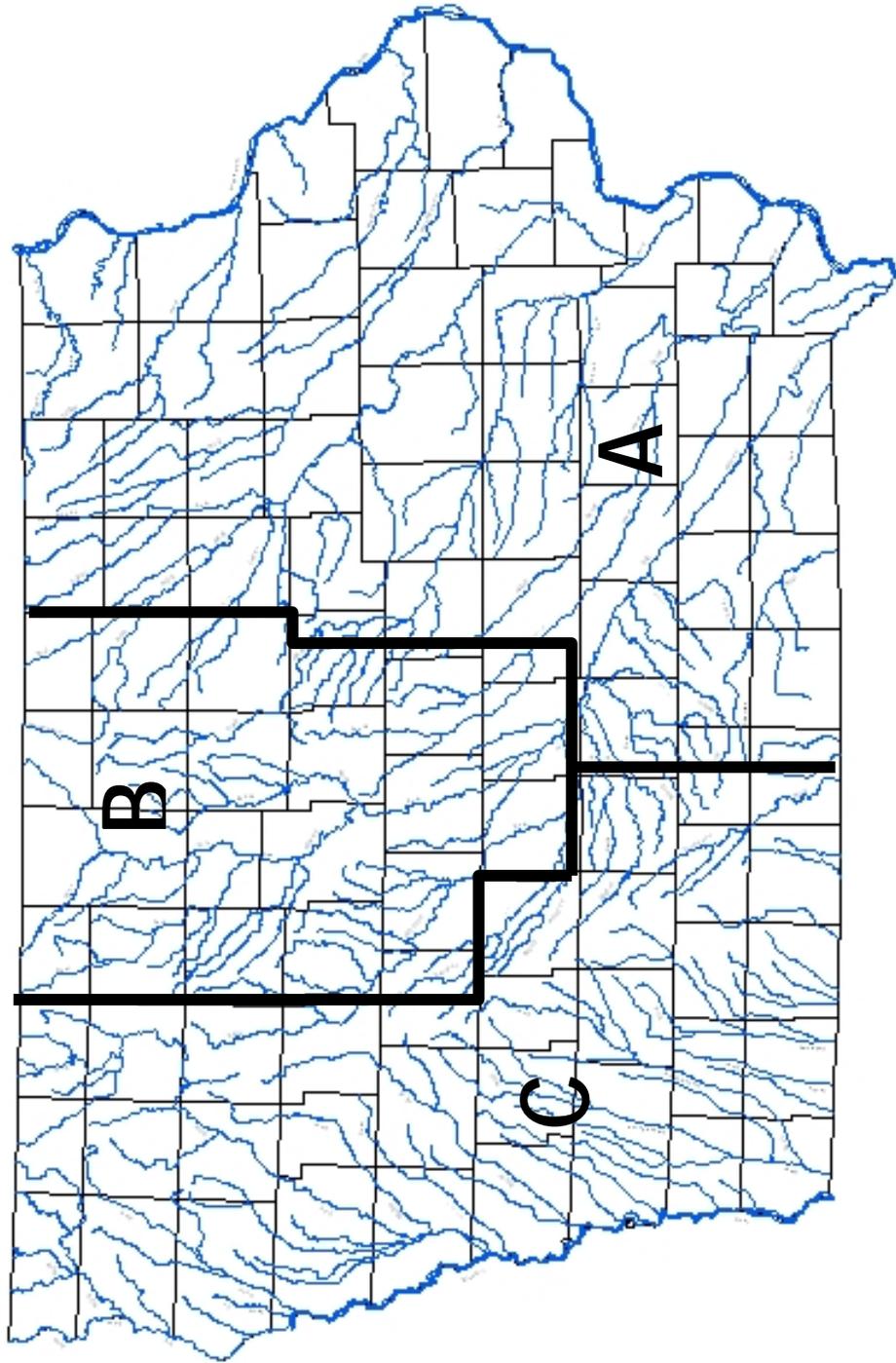


Figure 1. Map of Iowa showing areas of assignment

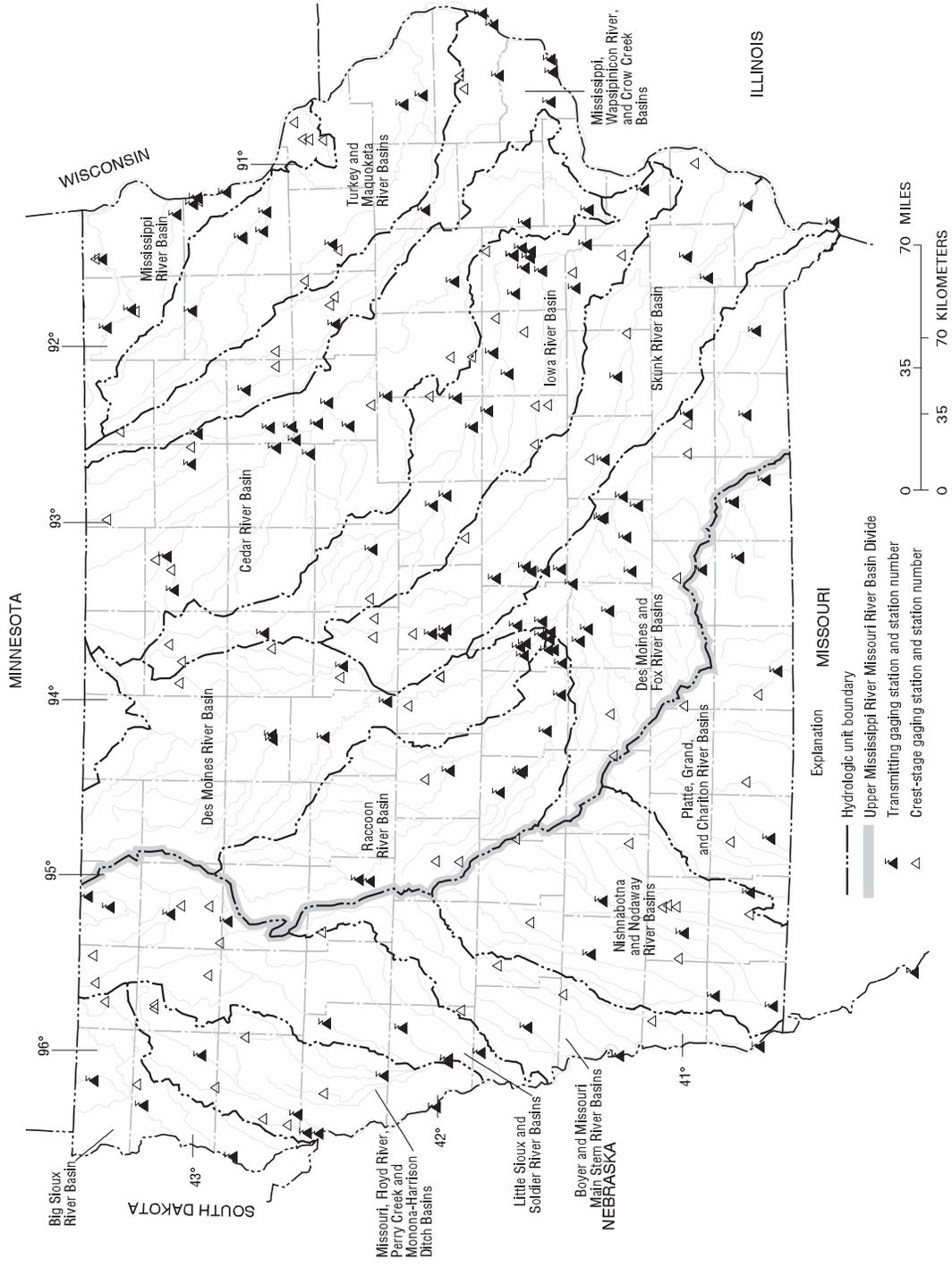


Figure 2. Map of Iowa showing current gaging locations

As always, samples should be obtained from those locations where chemical samples are routinely scheduled anytime a high-water discharge measurement is made. Suspended sediment samples should be collected, with each high-water discharge measurement, at all regularly scheduled sediment-sampling locations. In addition, chemical and sediment samples should be collected at all locations when a discharge measurement is made near or above the peak of record. Water-quality field parameters should be determined at all locations where discharge measurements are made.

Pre-Flood Planning

All equipment shall be checked and maintained in a usable condition. If any equipment is found not to be in usable condition then it is the responsibility of the field person to arrange for repair and return the equipment to usable condition in as short amount of time as possible to maintain maximum efficiency during routine and flood operation. The flood plan is maintained on the Iowa WSC's internal web- page and should be updated as changes occur and it shall be reviewed and updated as needed on an annual basis. Other actions that should be taken by the WSC Flood Coordinator and the Unit Chiefs are:

1. Be alert to flood potentials by monitoring forecast data using:
 - (a) DTN Data Transmission Network
 - (b) Radio and television reports.
 - (c) National Weather Service reports - from local National Weather Service offices (Des Moines, Davenport, LaCrosse, Sioux City, and Kansas City) (Appendix J).
2. Modify field schedules to keep personnel in flood-prone areas as needed.
3. Anticipate the possible shifting of help or equipment within the WSC to assist the field offices if needed.
3. Alert Iowa WSC Director of flood potential.
4. Alert Iowa WSC Director to the potential of requesting assistance from outside the WSC.
5. Alert Iowa WSC Director to arrange flood photography (Appendix K).
6. Alert Regional Surface-Water Specialist as soon as floods are expected, observed, or reported.
7. Inform Reston office as necessary (Appendix A).

Responsibilities and Duties

Responsibility for activating the Flood Plan will rest with the WSC Flood Coordinator. Local floods will be handled by the Areal Flood Coordinators or Unit Chiefs, but the WSC office must be kept informed. Information should normally be transmitted by telephone or cell phone.

On floods of major proportions the WSC office will act as the central information center. This will enable the forecasting and action agencies to have a single point of contact with the WSC. Appendix G has the phone numbers of concerned Federal and State agencies with which to relay flood information to as needed. The phone numbers for the County Emergency Managers for every county in Iowa are given in Appendix M.

All field personnel shall carry with them a working cell phone in order to maintain communication between the field and the WSC office for the relaying of information.

Personnel or equipment will not be shifted between Field Offices without the approval of the WSC Flood Coordinator. When personnel are sent to another area during localized flooding, they will work under the direction of, and report to, the Unit Chief in that area.

Nearly all high-flow partial-record sites carry the highest priority. Every effort must be made to check established ratings and to rate those sites having poor, or nonexistent, ratings.

While on scheduled trips, field personnel are responsible for keeping all assigned stream-gaging equipment in their respective vehicles. All field personnel are also responsible for keeping themselves informed of possible flooding by listening to frequent newscasts, weather summaries, and forecasts. If a report of flooding or of heavy rainfall in the Field Office area is heard, the field personnel should inform the Unit Chief and proceed as directed.

The WSC Flood Coordinator and Unit Chiefs are responsible for keeping abreast of the priority stations within their area of responsibility. Field personnel should utilize the programs available within NWISweb to monitor the stage at their stations on a daily basis and determine if measurements are needed to better define the rating. Flood routes and stations to be measured will be decided based on the level of need and the efficiency of operation.

The following additional suggestions are made to the field personnel as a guide to ensure more thorough flood-data collection:

1. As always, field equipment is to be in good repair and available for flood measurements and sampling.
2. During a flood period, it is the responsibility of each field person to check in with their supervisor and inform them on how and where you can be reached.
3. Water-quality samples are to be collected when directed to do so by the WSC Flood Coordinator and Unit Chiefs using the prepared flood sample boxes.
4. Field measurements of water temperature, specific conductance, and pH should be reported with each discharge measurement.
5. Collection of sediment samples on a rising stage of a flood is more critical than collection of a falling stage.
6. Document and digitally photograph the flood and any unusual flood phenomena, such as bankful stage, flood waves, drift jams, sand waves and any unusual conditions caused by flow, such as damage to gage structures, bridges, roads, controls, etc.

Communications

The Area Flood Coordinators have the responsibility for evaluating actual and potential flood events and reporting promptly by telephone to the WSC Flood Coordinator. Immediately preceding, and during the flood period, these telephone reports should be made every few hours, depending on the seriousness of the flood situation. Contact with the WSC Flood Coordinator at least once a day is mandatory. After the flood crest passes, the reports may be less frequent.

The Office Chief must be sure that all personnel under his direction are aware of, and follow, the communication lines established. During weekends and holidays where there is a storm potential, a "Duty Officer" should be designated if the Office Chief or Field Headquarters Chief will not be available, and the WSC Flood Coordinator should be so informed. In the case of

localized flood events that can be handled by Field Office personnel alone, the Office Chief or Field Headquarters Chief will make definite field assignments and should be the last to leave the office. Field parties consisting of two or more employees experienced in stream gaging should be avoided, unless strongly justified. If the Office Chief is available in the office, personnel should report directly to him by telephone, and he in turn to the WSC Flood Coordinator. In the event that the Office Chief must assist in the field, or the situation develops where all WSC field personnel are needed, the Office Chief should report his departure to the WSC Flood Coordinator before leaving. Field Office personnel and others assigned in the field, upon determining that the Office Chief is not in his office or at home, should then communicate directly with the WSC Flood Coordinator who will make the assignments and keep the Office Chief informed of the situation in this area as it develops. When the situation warrants, the Office Chief should return to the office where, through the WSC Flood Coordinator, Field Office communications will be reestablished for post-flood operations.

During a flood period, each field party should report by cell telephone as often as appropriate, but at least once a day. Each time a party reports in, the following information should be given for each station visited:

1. Gage height (inside and outside, if appropriate).
2. Time and date.
3. Is stream rising or falling? If rising, give estimate of when peak will occur, and estimated gage height. If falling, report peak gage height, time, and date.
4. Was measurement made? If so, give gage height, discharge, water temperature, specific conductance, and pH.
5. Is indirect measurement needed?
6. Is recorder and telemetry equipment operating properly? If not, was peak stage identified?
7. Which water-quality samples were collected?
8. Special information (weather, road conditions, etc.).

During all flood alerts, the WSC Flood Coordinator, or an assistant authorized to act for him, will be available in the WSC office from 0800 hours to 1700 hours on weekdays, weekends, and holidays. During other hours, they can be reached at home. During disastrous flood events, the WSC office will be manned on a 24-hour basis for coordinating and reporting activities.

Appendices C, G, H and I are a listing of telephone numbers that will be useful to WSC personnel in maintaining communications during flood emergencies. The lists include telephone numbers for the following: Survey offices, U.S. Army Corps of Engineers, National Weather Service, State agencies, and telemetered gaging stations.

Photographs

Regular and digital photographs should be obtained by field personnel at the time of flood measurements. These should be of unusual flow conditions and damage to gaging and highway structures.

Aerial photographs should be obtained of major floods by professional photograph companies. This coverage has been requested by Reston. The WSC Flood Coordinator will advise the Iowa WSC Director of the Areas to be covered. The Iowa WSC Director will then arrange for the actual contract with a photographic company. WRD Memorandum 72.21, dated August 10, 1971 (updated by WRD memorandum 77.57, dated March 9, 1977), details this part of the WSC Flood Plan and is listed in Appendix K.

Post-Flooding Operations

Immediately following the passing of the flood crest, post-flood operations begin. These consist of:

1. Recessional measurements will be made to better define ratings, and develop ratings for partial record sites. Gages must be reviewed via the web and visited if necessary, to ensure proper operation.
2. Water-quality field measurements and samples are not necessary on follow- up visits unless there was no water-quality activity during the flood period.
3. At times a gaging station may be inundated or destroyed by flood waters or debris. For gaging stations destroyed or severely damaged, during a flood event, a temporary gage will be installed as soon as possible to reduce the amount of lost record. Pre-build temporary gages are located in the Iowa City warehouse and in the Council Bluffs warehouse.
4. The analysis of rating curves for possible indirect measurements will begin as soon as the first peak gage height is reported and will continue all through the recession. The Unit Chief and the Surface-water specialists will discuss and determine if a indirect measurement is needed. Depending upon the situation, field crews may be set up for this purpose to ensure the most efficient use of all personnel. The WSC office will assign the best personnel available to assist Field Offices in selecting sites for indirect measurements, training of crews, and otherwise assisting in the indirect measurement work.

Safety

It is the responsibility of all supervisors to see that prescribed safety precautions and instructions are observed, and it is the responsibility of each employee to ensure his own safety and that of his fellow employees at all times.

It is imperative that safety practices as laid out in the safety manual be followed at all times. All Job Hazard Analysis and bridge safety plans are to be followed for all routine stations. If the measurement or sampling is to take place at a non-routine site employees are to use common sense where dangerous conditions exist, observe all precautions and take NO unnecessary risks because a streamflow measurement or water sample is not worth a human life. Some of the most important precautions to be observed are as follows:

1. Do not use heavier sounding weights than those recommended for the respective sounding reels. Use the sounding reel with common sense. For example: in Iowa a 100-pound sounding weight is the maximum recommended for a B-56 reel (hand or power).
2. Do not use any sounding weights over 100 pounds on any bridge crane in Iowa.
3. Do not use power units (for reels) unless you have received adequate operating instructions. This equipment is considered dangerous.
4. Do not attempt a boat measurement unless at least one member of the crew is thoroughly trained and has attended boat operator training. Approved personal flotation devices (PFD's) must be used.
5. Do not attempt to make unsafe wading measurements, instead make a measurement from a bridge or cableway.
6. Bridge measurements should not be attempted at sites where a real safety hazard exists unless an adequate amount of safety equipment is available or unless additional personnel (not necessarily) are available to safely watch for, or direct, vehicular traffic. Discharge measurements or samples may be obtained from bridges when site specific bridge safety plans are followed. Data may be collected from a bridge with two or more lanes carrying traffic in the same direction, or a two-lane, two-way bridge carrying very light traffic, without the use of flagmen, when ALL applicable safety guidelines are followed.
7. Discharge measurements should not be attempted or continued during an electrical storm when the storm is directly overhead.
8. Discharge measurements should not be attempted or continued during the actual approach of tornadoes.
9. Discharge measurements made at night should be attempted with extreme caution. Adequate lighting is a must.
10. Approved life preservers must be worn during all measurements when flood conditions dictate their use.

Note: If discharge measurements are not possible under existing circumstances, the field party should contact the assigned Flood Coordinator as soon as practical for further instructions.

APPENDIX - A. Project Alert Overview

Water Resources Information

This page is intended for USE ONLY. It is available on a public webserver only so that employees in the field can access it from any available system in emergency situations.

Project Alert

Project Alert is a critical part of our growing outreach efforts. Its purpose is to make information about emergency situations convenient and available for use by local, State, and Federal agencies and the news media, and to make policy officials aware of our role and contributions.

Your First Priority

The first priority for reporting extreme and/or significant hydrologic events as well as hazardous or potentially hazardous conditions -- such as rapidly rising streams and roads and bridges already, or about to be, inundated -- must be to local emergency-response agencies and to the public via local news media. WSC offices are responsible for getting out the word on events and conditions that have been observed and documented by personnel. The choice of the most effective method for disseminating the information -- direct contact with cooperators and the news media, a press release, World Wide Web, etc. -- will depend in part upon local circumstances and is left to the discretion of the local manager.

Next, Notify Project Alert

Instructions on how to complete a project alert form can be found at tap://water.usgs.gov/project_alert. This is normally the responsibility of the Data Chief.

Your message will trigger a chain of events that could range from notifying senior officials to placing a notice on the "Water Resources of the United States" home page. If we need clarification, someone from Project Alert will get back to you.

APPENDIX - A (continued)

You will receive an acknowledgement of your message within 4 business hours at HQ (Eastern time). If you do not hear from us within that time, you should call 703- 648-5699 and ask for Project Alert.

Tips on Composing an Effective News Release

- * The first paragraph should be a single sentence that summarizes the situation and the role. This is the most important sentence in your statement!
- * Describe the hydrologic conditions as briefly as possible. Keep the language non-technical and express the quantities in terms that are familiar to your audience. (e.g. cubic feet per second, million gallons per day, etc.) Try to use common words instead of technical terms: “flow” instead of “discharge”; “average” rather than “normal” or “median”
- * Try to include stage information, such as the relation of measured or anticipated peak stage to historical high stages or the elevations of bridges, roadways, or other structures, and any observations of inundated areas or facilities.
- * Pictures and graphs, where available, pay large dividends.
- * Where appropriate, let editors know where possibly interesting activities may take place. For example, “Note to Editors: hydrologists will be making flow measurements at highway 15 at Point of Rocks, Maryland, on Monday, February 5. For information on their schedule for photo opportunities, contact...”

APPENDIX - B. List of Flood Coordinators and Area of Responsibility

Name		Area of Assignment	
1.	Greg Nalley	WSC Flood Coordinator	A, B, C
2.	Jon Nania	Surface Water Specialist	A, B, C
3.	Doug Goodrich	Iowa City Unit Chief	A
4.	Joe Gorman	Council Bluffs Unit Chief	C
5.	Dave Conell	Fort Dodge Lead Tech.	B

APPENDIX - C. List of Selected WSC Personnel and Telephone Numbers

Iowa WSC (WRD)

Federal Building, Rm 269
400 S. Clinton Street
Iowa City, IA 52240
Main: (319)337-4191
Fax: (319)358-3606

WSC Personnel - Areas A, B, C

	Office No.	Cellular No.	Home No.
R.G. Middlemis-Brown	(319) 358-3600	(319) 430-6462	(319) 643-2452
G.M. Nalley	(319) 358-3630		(319) 643-3131
D.J. Schnoebelen	(319) 358-3617		(319) 354-1634
V.E. Miller	(319) 358-3631		(319) 351-4360
D.A. Eash	(319) 358-3615		(319) 644-3720

Iowa City Field Office - Area A

Federal Building, Rm 269
400 S. Clinton Street
Iowa City, IA 52240
Main: (319)337-4191
Fax: (319)358-3606

R.D Goodrich	(319) 358-3632	(319) 430-6973	(319) 338-0014
J.F. Cerveny	(319) 358-3635	(319) 430-6931	(319) 358-7795
S.M. Linhart	(319) 358-3637	(319) 430-7016	(319) 857-5374
J.C. McVay	(319) 358-3636	(319) 430-6962	(319) 895-8357
J.F. Nania	(319) 358-3655	(319) 430-6974	(319) 331-3640
A.L Donnelly	(319) 358-3628	(319) 430-6871	(319) 337-2756
S.R. Strader	(319) 358-3620	(319) 430-7024	(319) 688-9440
K.S. Housel	(319) 358-3627	(319) 430-7031	(319) 270-8111
C.D. VanSchepen	(319) 358-3624	(319) 470-9245	(319) 665-4810

APPENDIX - C (continued)**Fort Dodge Field Office - Area B**

205 S. 8th St., RM 244

Fort Dodge, IA 50501

Office: (515) 576-4571

Fax: (515) 576-1692

	Office No.	Cell No.	Home Phone No.
A.R. Conkling	(515) 576-4571		(515) 545-4208
D.T. Conell	(515) 576-4571	(515) 408-2527	(515) 955-3292
J.W. Harms	(515) 576-4571	(515) 408-2528	(515) 955-2668
S.A. Thul	(515) 576-4571	(515) 408-2526	(515) 603-3172

Council Bluffs Field Office - Area C

8 S. 6th St., RM 260

Council Bluffs, IA 51502

Office: (712) 323-8024

Fax: (712) 322-7775

J.G. Gorman	(712) 323-8024	(712) 250-0834	(712) 328-3220
R.L. Kopish	(712) 323-8024	(712) 250-0830	(712) 323-6950
M.J. Noon	(712) 323-8024	(712) 250-0832	(712) 329-4181
J.R. Sondag	(712) 323-8024	(712) 250-0831	(712) 527-4125

APPENDIX - D. List of Equipment Requirements

Current meters Price AA (2)
Aquacalc
Headphones (2)
Stop watches (2)
Tagline reel (Lee-Au 500 ft.)
Hydroacoustic measurement equipment
Laptop
PDA
Tool box and common tools
Steel tape (50 ft.) and weight
Wading rod

Flagging
High Water Mark disks
Hipboots
Waders
Raincoat or rainsuit
Fluorescent vests (2)
Life jackets (2)
Safety equipment for traffic control
First aid kit and manual
Flashlight
Camera (Digital if available)
Stakes, nails, and flagging for high-water marks
Hatchet
Handle level
Rope
Calculator
measurement sheets
Airline and wetline correction table
Current meter rating tables
Copy of WSC Flood Plan
Field folders
Set of County highway maps
Station Operation List

APPENDIX - E. Water Quality Collection Equipment and Supplies

Sample Type List
Buffer 4, 7, and 10 pH
Electrolyte, pH electrode solution
Field Measurement Notes
DI water
Kem wipes
Ice
D.O. probe repair kit
1 l glass amber bottles
300-ml glass sediment bottles
Sterilized 500 mL Nalgene bottle for bacteria sample
Sulfuric acid standard (for Alkalinity)
25-mL pipet
Nitric acid 1.0-mL vial
Sulfuric acid 1.0-mL vial
Filters, 0.45 μ m, 142 mm
Thermometer
Multi probe meter (i.e. Hydrolab or YSI)
Ice chests (2)
Peristaltic pump
Batteries 2-6 volt (for pump)
Filter base, 142 mm (plastic, Teflon, etc.)
Silver Plate filter
Churn splitter
Sampler, suspended sediment
Sampler, weighted bottle
Nozzles, brass and nylon 1/4-inch
Gaskets, rubber and Teflon

Prepared Water-Quality Sample Collection Box, as many as needed, the contents include labels, 4 plastic liter bottles, 1 baked liter amber glass bottle, 1 baked liter clear glass and other misc. needed supplies. The contents and sampling are still under discussion at this time as the Water-Quality Flood Plan is still in draft form.

APPENDIX - F. List of Emergency and Excess Stream-Gaging Equipment Iowa City

1 - ATV with trailer	3 - 30 lb. sounding weight
8 - 60 lb. counter weights	5 - 50 lb. sounding weight
3 - wading rods	4 - 75 lb. sounding weight
2 - sounding reels - Type B-56	4 - 100 lb. sounding weights
5 - current meters - Type AA	2 - 150 lb. sounding weight
3 - 4-wheel bridge cranes	1 - P-61 sampler
2 - sounding reel - Type E	2 - BM-54 bed samplers
3 - power drives for reels	1 - D95 sampler
1 - D96 sampler	3 - Aquacalcs
3 - Temporary gage house	3 - metal heavy duty tag lines
3 - power drives for reel	1 - 2000 ft. boat tag line
2 - 1200 kHz ADCP	2 - 600 kHz ADCP
1 - 14 ft. boat, with 9.9 hp motor, and ADCP mounts	2 - Tri-hull tethered boat
1 - 18 ft. boat, with 70 hp motor, and ADCP mounts	2 - QLiner
1 - 23 ft. boat, two 115 hp motor, and ADCP mounts	1 - Boogie Dopp
1 - 16 ft. flat bed trailer	8 - ADV

Council Bluffs (Field Office)

1 - 2 wheel construction trailer	2 - 30 lb. sounding weights
1 - 2-wheel cargo trailer	2 - 30 lb. sounding weights
1 - motorized 4 wheel crane with trailer	2 - 50 lb. sounding weights
1 - ATV	2 - 75 lb. sounding weights
1 - boat tag line (2,000 ft.)	2 - 100 lb. sounding weights
1 - 150 lb. sounding weight	1 - sounding reel - Type E
1 - power drive for reel	6 - 60 lb. counter weights
1 - 600 kHz ADCP	2 - 1200 kHz ADCP
1 - D96 sampler	3 - sounding reel - Type B-56
1 - 21ft. boat w/ 90 and 15 hp motors w/ ADCP mounts	2 - Boogie Dopp
1 - 18 ft. boat w/ two 90 hp motors w/ ADCP mounts	1 - QLiner
3 - 4-wheel bridge crane (heavy duty)	4 - ADV

Fort Dodge (Field Office)

1- 14 ft. boat, 15 hp motor, and ADCP mounts	2 - 30 lb. sounding weights
1- 16 ft. boat, 300 hp motor, and ADCP mounts	2 - 30 lb. sounding weights
2 - 50 lb. sounding weights	4 - 60 lb. counter weights
1 - motorized 4 wheel bridge crane w/ trailer	1 - boat tag line (2,000 ft.)
2 - ADV	2 - 75 lb. sounding weights
2 - 100 lb. sounding weights	1 - 150 lb. sounding weight
2 - sounding reel - Type B-56	1 - 100 kHz ADCP
1 - QLiner	1 - Boogie Dopp

**APPENDIX - G. List of Telephone Numbers
for Regional and surrounding U.S. Geological Survey offices,
US Corps. of Engineers, National Weather Service and State
Agencies**

U.S. Geological Survey

Central Region Telephone number

Bill Carswell, Regional Hydrologist	Denver, CO	(303) 445-4600
Jim Kircher Assoc. Regional Hydrologist	Denver, CO	(303) 445-4600
Mark Smith, Regional SW Specialist	Denver, CO	(701) 445-4622

Surrounding WSC Offices

Bob Holmes, Illinois WSC Director	Urbana, IL	(217) 344-0037
Jeff Stoner, Minnesota WSC Director	Mounds View, MN	(763) 783-3106
Mike Slifer, Missouri WSC Director	Rolla, MO	(573) 308-3667
Robert Swanson, Nebraska WSC Director	Lincoln, NE	(402) 328-4110
Mark Anderson, S. Dakota WSC Director	Rapid City, SD	(605) 394-3220
Charles Peters, Wisconsin WSC Director	Middleton WI	(608) 821-3810

U.S. Corps of Engineers

Jim Knapp	Kansas City	(816)983-3151
Rob Hallet	Omaha, NE	(402)221-4608
Jim Stiman,	Rock Island, IL	(309) 794-5849
Pat Foley,	St. Paul, MN	(651) 290-5630

National Weather Service

Mariam Baker	Des Moines Forecast Center	(515) 270-4501 ext493
Jeff Zogg	Quad Cities Forecast Center	(563) 391-7094 ext493

State Agencies

Allen Bonini	IDNR, TMDL Section	(515) 281-5107
Mary Skopec	IDNR, Geo. Survey Bureau	(319) 335-1579
Mark Dunn	IDOT, Materials Div	(515) 239-1447

APPENDIX - H. Gaging Stations with Phone Modems

Station Number	Station Name	Phone Number
05387440	Upper Iowa River at Bluffton, IA	563-735-5491
05387500	Upper Iowa River at Decorah, IA	563-382-0043
05388250	Upper Iowa River at Dorchester, IA	563-568-4087
05389500	Mississippi River at McGregor, IA	563-873-2006
05411500	Mississippi River at Clayton, IA	563-964-2332
05420680	Wapsipinicon River near Tripoli, IA	319-882-3373
05422560	Duck Creek at 110th Ave. near Davenport	563-381-3537
05422600	Duck Creek at Duck Creek Golf Course	563-359-9824
05451210	South Fork Iowa River near New Providence	641-858-3538
05453600	Rapid Creek Rain Gage near Morse, IA	319-643-5602
05454000	Rapid Creek near Iowa City, IA	319-339-0226
05454220	Clear Creek near Oxford, IA	319-645-1363
05454300	Clear Creek at Coralville, IA	319-339-0256
05454500	Iowa River at Iowa City, IA	319-358-9695
05455010	South Branch Ralston Creek at Iowa City, IA	319-354-6530
05457700	Cedar River at Charles City, IA	641-228-7603
05458000	Little Cedar River near Ionia, IA	641-394-3201
05458300	Cedar River at Waverly, IA	319-352-1214
05458500	Cedar River at Janesville, IA	319-987-2419
05458900	West Fork Cedar River at Finchford, IA	319-987-2823
05459500	Winnebago River at Mason City, IA	641-423-3149
05462000	Shell Rock River at Shell Rock, IA	319-885-6548
05463000	Beaver Creek at New Hartford, IA	319-983-2778
05463050	Cedar River at Cedar Falls, IA	319-266-6319
05464000	Cedar River at Waterloo, IA	319-233-6805
05464220	Wolf Creek near Dysart, IA	319-476-4118
05464500	Cedar River at Cedar Rapids, IA	319-364-6319
05470000	South Skunk River above Ames, IA	515-232-0557
05470500	Squaw Creek at Ames, IA	515-232-7603
05471000	South Skunk River blw Squaw Ck nr Ames	515-232-9496
05473450	Big Creek near Mt. Pleasant, IA	319-385-4250
05480500	Des Moines River at Fort Dodge, IA	515-576-5721

APPENDIX - H (continued)**Telemetered Gaging Stations with Phone Modems**

Station Number	Station Name	Phone Number
05481650	Des Moines River at Saylorville, IA	515-289-2410
05482000	Des Moines River at 2nd Ave. at Des Moines	515-243-5415
05483450	Middle Raccoon River near Bayard, IA	641-747-2553
05483470	Lake Panoram at Panora, IA	641-755-3646
05483600	Middle Raccon River at Panora, IA	641-755-3717
05484500	Raccon River at Van Meter, IA	515-996-2884
05484650	Raccoon River at 63rd st. at Des Moines, IA	515-255-1829
05484800	Walnut Creek at Des Moines, IA	515-255-7672
05484900	Raccoon River at Fleur Drive at Des Moines	515-283-8785
05485500	Des Moines Rv blw Raccoon Rv at Des Moines	515-243-0605
05485640	Fourmile Creek at Des Moines	515-265-6458
05494300	Fox River near Bloomfield, IA	641-664-2547
06599900	Perry Creek at Milnerville, IA	712-938-2973
06599950	Perry Creek at Hinton, IA	712-239-9035
06600000	Perry Ck at 38th st. at Souix City, IA	712-279-6946
06904010	Chariton River near Moulton, IA	641-437-4473

Appendix I Stations Equipped with Data Collection Platforms

Station Number	Station Name	NESDIS ID	Prim Chan/ Rand Chan	Ant. Azimuth/ Elev	Trans Time/Interval/ Window
05387440	Upper Iowa River at Bluffton, IA	176A95E8	107/131	E 156/37	035500/4 hr/1 min
05387500	Upper Iowa River at Decorah, IA	177B46E4	105/131	E 156/37	002100/4 hr/30 sec
05388250	Upper Iowa River near Dorchester, IA	CE761A14	31/	E 157/37	002000/1 hr/20 sec
05389000	Yellow River at Ion, IA	DD934392	149/115	E 157/38	005450/1 hr/10 sec
05389400	Bloody Run Creek near Marquette, IA	1667A2B6	12/130	W 235/24	020200/4 hr/1 min
05389500	Mississippi River at McGregor, IA	CE760962	31/	E 157/38	002940/1 hr/20 sec
05411500	Mississippi River at Clayton, IA	CE7614C6	31/	E 157/38	003000/1 hr/20 sec
05411850	Turkey River near Eldorado, IA	170263F8	39/133	E 156/37	005400/4 hr/30 sec
05412020	Turkey River above French Hollow Cr at Elkader, IA	DD9350E4	149/115	E 157/38	005500/1 hr/10 sec
05412400	Volga River at Littleport, IA	CE62AB3E	49/129	E 157/38	005040/1 hr/20 sec
05412500	Turkey River at Garber, IA	CE7C1594	49/129	E 157/38	002920/1 hr/20 sec
05416900	Maquoketa River at Manchester, IA	DD899336	154/124	W 235/24	001900/1 hr/10 sec
05418400	North Fork Maquoketa River near Fulton, IA	170445DA	39/133	E 157/39	012400/4 hr/1 min
05418500	Maquoketa River near Maquoketa, IA	CE7C0830	49/129	E 157/39	002940/1 hr/20 sec
05420460	Beaver Slough at 3rd St at Clinton, IA	170666C2	39/133	E 158/39	015800/4 hr/1 min
05420500	Mississippi River at Clinton, IA	CE7BFA80	49/129	E 158/39	003040/1 hr/20 sec
05420680	Wapsipinicon River near Tripoli, IA	173B63D4	87/133	E 155/38	000600/4 hr/1 min
05421000	Wapsipinicon River at Independence, IA	CE74AC6E	49/129	E 156/38	003000/1 hr/20 sec
05421740	Wapsipinicon River near Anamosa, IA	DD89A6AC	154/124	W 235/25	001910/1 hr/10 sec
05422000	Wapsipinicon River near De Witt, IA	CE74A2BC	49/129	E 157/39	003020/1 hr/20 sec
05422470	Crow Creek at Bettendorf, IA	170C520A	39/133	E 157/39	033300/4 hr/1 min
05422560	Duck Creek at 110th Ave at Davenport, IA	DD898040	154/124	W 236/24	001850/1 hr/10 sec
05422600	Duck Creek at DC Golf Course at Davenport, IA	DD93657E	149/115	E 157/39	005510/1 hr/10 sec
05449500	Iowa River near Rowan, IA	CE2DD632	49/129	E 154/37	000620/1 hr/20 sec
05451080	South Fork Iowa River near Blairsburg, Ia.	DDB377E6	155/125	E 154/37	001250/1 hr/10 sec

Station Number	Station Name	NESDIS ID	Prim Chan/ Rand Chan	Ant. Azimuth/ Elev	Trans Time/Interval/ Window
05451210	South Fork Iowa River NE of New Providence, IA	DD6D337E	163/131	E 154/38	005550/1 hr/10 sec
05451500	Iowa River at Marshalltown, IA	CE632FD0	49/129	E 154/38	000300/1 hr/20 sec
05451700	Timber Creek near Marshalltown, IA	CE636CDA	49/129	E 154/38	000700/1 hr/20 sec
05451900	Richland Creek near Haven, IA	CE635792	49/129	E 155/38	000720/1 hr/20 sec
05452000	Salt Creek near Elberon, IA	CE634A36	49/129	E 155/38	000800/1 hr/20 sec
05452200	Walnut Creek near Hartwick, IA	CE635940	49/129	E 155/39	000740/1 hr/20 sec
05453000	Big Bear Creek at Ladora, IA	CE636208	49/129	E 155/39	000820/1 hr/20 sec
05453100	Iowa River at Marengo, IA	CE628300	49/	E 155/39	000200/1 hr/20 sec
05453520	Iowa River below Coralville Dam nr Coralville, IA	CE628DD2	49/	E 156/39	000120/1 hr/20 sec
05454000	Rapid Creek near Iowa City, IA	CE33B022	49/129	E 156/39	001000/1 hr/20 sec
05454220	Clear Creek near Oxford, IA	DD6D5698	163/131	E 156/39	005610/1 hr/10 sec
05454300	Clear Creek near Coralville, IA	CE63717E	49/129	E 156/39	000440/1 hr/20 sec
05454500	Iowa River at Iowa City, IA	CE633CA6	49/129	E 156/39	000500/1 hr/20 sec
05455010	South Branch Ralston Creek at Iowa City, IA	DD6D45EE	163/131	E 156/39	005600/1 hr/10 sec
05455100	Old Mans Creek near Iowa City, IA	CE7E66F0	49/129	E 156/39	000520/1 hr/20 sec
05455500	English River at Kalona, IA	CE629076	49/129	E 156/39	000540/1 hr/20 sec
05455700	Iowa River near Lone Tree, IA	CE633274	49/129	E 156/39	000600/1 hr/20 sec
05457700	Cedar River at Charles City, IA	170220F2	39/133	E 155/37	005000/4 hr/1 min
05458000	Little Cedar River near Ionia, IA	DD6CF49A	163/131	E 155/37	005510/1 hr/10 sec
05458300	Cedar River at Waverly, Iowa	167B22A0	23/115	E 155/38	034800/4 hr/1 min
05458500	Cedar River at Janesville, IA	DD6D06E4	163/131	E 155/38	005520/1 hr/10 sec
05458900	West Fork Cedar River at Finchford, IA	DD6D1592	163/131	E 155/38	005530/1 hr/10 sec
05459500	Winnebago River at Mason City, IA	DD93868C	149/115	E 154/37	005530/1 hr/10 sec
05459500	Winnebago River at Mason City, IA	DD029726	105/131	E 154/37	010630/4 hr/30 sec
05460000	Clear Lake at Clear Lake, IA	172B644A	53/133	E 154/37	035000/4 hr/1 min
05462000	Shell Rock River at Shell Rock, IA	DD6D2008	163/131	E 155/38	005540/1 hr/10 sec
05463000	Beaver Creek at New Hartford, IA	DD56C622	164/130	W 233/25	000620/1 hr/10 sec

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Station Number	Station Name	NESDIS ID	Prim Chan/ Rand Chan	Ant. Azimuth/ Elev	Trans Time/Interval/ Window
05463050	Cedar River at Cedar Falls, IA	17021568	39/133	E 155/38	004900/4 hr/1 min
05463500	Black Hawk Creek at Hudson, IA	DD9395FA	149/115	E 155/38	005540/1 hr/10 sec
05463500	Black Hawk Creek at Hudson, IA	DD04F20E	105/131	E 155/38	020830/4 hr/30 sec
05464000	Cedar River at Waterloo, IA	CE631498	49/129	E 155/38	000320/1 hr/20 sec
05464220	Wolf Creek near Dysart, IA	DD050070	105/131	E 155/38	020930/4 hr/30 sec
05464500	Cedar River at Cedar Rapids, IA	CE63093C	49/129	E 156/39	000340/1 hr/20 sec
05464942	Hoover Crk at Hoover Nat.Hist.Site West Branch, IA	16888742	77/115	E 156/39	022700/4 hr/1 min
05465000	Cedar River near Conesville, IA	CE6307EE	49/129	E 156/39	000400/1 hr/20 sec
05465000	Iowa River at Wapello, IA	CE6344E4	49/129	E 156/40	000420/1 hr/20 sec
05470000	South Skunk River near Ames, IA	DD568528	164/130	W 233/26	000540/1 hr/10 sec
05470500	Squaw Creek at Ames, IA	DD56965E	164/130	W 233/26	000550/1 hr/10 sec
05471000	South Skunk River below Squaw Creek near Ames, IA	DD56A3C4	164/130	W 233/26	000600/1 hr/10 sec
05471040	Squaw Creek near Colfax, IA	173B564E	87/133	E 154/38	000500/4 hr/1 min
05471050	South Skunk River at Colfax, IA	DD937608	149/115	E 154/38	005520/1 hr/10 sec
05471200	Indian Creek near Mingo, IA	DD2C57BE	39/133	E 154/38	005430/4 hr/30 sec
05471500	South Skunk River near Oskaloosa, IA	CE74B1CA	49/129	E 154/39	003500/1 hr/20 sec
05472500	North Skunk River near Sigourney, IA	CE74BF18	49/129	E 155/39	003440/1 hr/20 sec
05473400	Cedar Creek near Oakland Mills, IA	CE33E05E	49/129	E 155/40	003520/1 hr/20 sec
05473450	Big Creek near Mt. Pleasant, IA	DD6D6302	163/131	E 156/40	005620/1 hr/10 sec
05474000	Skunk River at Augusta, IA	CE7C80F6	49/129	E 156/40	003540/1 hr/20 sec
05476750	Des Moines River at Humboldt, IA	CE7B91B4	49/129	E 153/37	001500/1 hr/20 sec
05479000	East Fork Des Moines River at Dakota City, IA	CE7C1B46	49/129	E 153/37	001440/1 hr/20 sec
05480500	Des Moines River at Fort Dodge, IA	CE74C988	49/129	E 153/37	001240/1 hr/20 sec
05481000	Boone River near Webster City, IA	CE7C6304	49/129	E 153/37	001300/1 hr/20 sec
05481300	Des Moines River near Stratford, IA	CE74C75A	49/129	E 153/38	001220/1 hr/20 sec
05481650	Des Moines River near Saylorville, IA	CE7E5DB8	49/127	E 153/38	001140/1 hr/20 sec
05481950	Beaver Creek near Grimes, IA	CE7C3378	49/129	E 153/38	001640/1 hr/20 sec

Station Number	Station Name	NESDIS ID	Prim Chan/ Rand Chan	Ant. Azimuth/ Elev	Trans Time/Interval/ Window
05482000	Des Moines River at 2nd Avenue, Des Moines, IA	CE33D5C4	49/129	E 153/38	002720/1 hr/20 sec
05482300	North Raccoon River near Sac City, IA	CE2DB3D4	49/129	E 152/37	001700/1 hr/20 sec
05482315	Black Hawk Lake at Lake View, IA	172B773C	53/133	E 152/37	035100/4 hr/1 min
05482500	North Raccoon River near Jefferson, IA	CE7B82C2	49/129	E 152/38	001720/1 hr/20 sec
05483450	Middle Raccoon River near Bayard, IA	CE2D9538	49/129	E 152/38	001740/1 hr/20 sec
05483470	Lake Panorama at Panora, IA	DD0790E6	105/131	E 152/38	031730/4 hr/30 sec
05483600	Middle Raccoon River at Panora, IA	CE2DA0A2	49/129	E 152/38	001800/1 hr/20 sec
05484000	South Raccoon River at Redfield, IA	CE7B8C10	49/129	E 152/38	001820/1 hr/20 sec
05484500	Raccoon River at Van Meter, IA	CE7C3DAA	49/129	E 153/38	001320/1 hr/20 sec
05484500	Raccoon River at Van Meter, IA	DDB38762	155/125	E 153/38	001300/1 hr/10 sec
05484600	Raccoon River near West Des Moines, IA	173B8026	87/133	E 153/38	000800/4 hr/1 min
05484650	Raccoon River at 63rd Street at Des Moines, IA	CE33C6B2	49/129	E 153/38	002740/1 hr/20 sec
05484800	Walnut Creek at Des Moines, IA	CE88C4D2	49/129	E 153/38	005900/1 hr/20 sec
05484900	Raccoon River at Fleur Drive, Des Moines, IA	CE3865E2	49/129	E 153/38	005820/1 hr/20 sec
05485500	Des Moines River blw Raccoon Riv at Des Moines, IA	CE62FB42	49/129	E 153/38	001340/1 hr/20 sec
05485605	Fourmile Creek near Ankeny, IA DS1	DD051306	105/131	E 153/38	021030/4 hr/30 sec
05485640	Fourmile Creek at Des Moines, IA	CE3826E8	49/129	E 153/38	004420/1 hr/20 sec
05486000	North River near Norwalk, IA	CE7C584C	49/129	E 153/38	002240/1 hr/20 sec
05486490	Middle River near Indianola, IA	CE7C569E	49/129	E 153/38	002300/1 hr/20 sec
05487470	South River near Ackworth, IA	CE7C4B3A	49/129	E 153/39	002320/1 hr/20 sec
05487500	Des Moines River near Runnells, IA	CE7CE510	49/129	E 153/39	002340/1 hr/20 sec
05487540	Walnut Creek near Prairie City, IA	1667F2CA	12/130	W 233/26	020700/4 hr/1 min
05487550	Walnut Creek near Vandalia, IA	173B4538	87/133	E 154/39	000400/4 hr/1 min
05487980	White Breast Creek near Dallas, IA	CE7C45E8	49/129	E 153/39	002400/1 hr/20 sec
05488110	Des Moines River near Pella, IA	CE62E834	49/127	E 154/39	002200/1 hr/20 sec
05488200	English Creek near Knoxville, IA	CE7BCF1A	49/129	E 154/39	002420/1 hr/20 sec
05488500	Des Moines River near Tracy, IA	CE7C7072	49/129	E 154/39	002440/1 hr/20 sec

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Station Number	Station Name	NESDIS ID	Prim Chan/ Rand Chan	Ant. Azimuth/ Elev	Trans Time/Interval/ Window
05489000	Cedar Creek near Bussey, IA	CE7C2EDC	49/129	E 154/39	002500/1 hr/20 sec
05489500	Des Moines River at Ottumwa, IA	CE7C6DD6	49/129	E 154/39	002520/1 hr/20 sec
05490500	Des Moines River at Keosauqua, IA	DDB39414	155/125	E 155/40	001310/1 hr/10 sec
05490500	Des Moines River at Keosauqua, IA	CE62DDAE	49/129	E 155/40	002540/1 hr/20 sec
05494300	Fox River at Bloomfield, IA.	DD56B0B2	164/130	W 235/26	000610/1 hr/10 sec
06483290	Rock River below Tom Creek at Rock Rapids, IA	DD03E34C	105/131	E 151/36	013930/4 hr/30 sec
06483500	Rock River near Rock Valley, IA	CE4282EE	52/128	W 229/27	011900/4 hr/1 min
06486000	Missouri River at Sioux City, IA	CE5DFBA0	162/128	W 230/27	002740/1 hr/5 sec
06600000	Perry Creek at 38th Street, Sioux City, IA	CE23F4B6	52/128	W 230/27	035200/4 hr/1 min
06600100	Floyd River at Alton, IA	CE429198	52/128	W 230/27	012100/4 hr/1 min
06600500	Floyd River at James, IA	CE429F4A	52/128	W 230/27	012200/4 hr/1 min
06601200	Missouri River at Decatur, NE	DD9E3664	154/124	W 230/28	005620/1 hr/10 sec
06601200	Missouri River at Decatur, NE	CE784E00	52/128	W 230/28	002400/4 hr/1 min
06602020	West Fork Ditch at Hornick, IA	CE333636	52/128	W 230/27	010000/4 hr/1 min
06602400	Monona-Harrison Ditch near Turin, IA	CE5E41F2	52/128	W 230/28	032500/4 hr/1 min
06604000	Spirit Lake near Orleans, IA	172B87B8	53/133	E 152/36	035200/4 hr/1 min
06604200	West Okoboji Lake at Lakeside Lab near Milford, IA	172B94CE	53/133	E 152/36	035300/4 hr/1 min
06604215	East-West Okoboji Lake Channel near Milford, Ia.	DD2F765C	105/131	E 152/36	002130/4 hr/30 sec
06605000	Ocheyedan River near Spencer, IA	1702F69A	39/133	E 152/36	010300/4 hr/1 min
06605850	Little Sioux River at Linn Grove, IA	CE427CB8	52/128	W 231/26	011800/4 hr/1 min
06606600	Little Sioux River at Correctionville, IA	CE5DCE3A	52/128	W 230/27	031600/4 hr/1 min
06607200	Maple River at Mapleton, IA	CE5E2414	52/128	W 231/27	032700/4 hr/1 min
06607500	Little Sioux River near Turin, IA	CE5E02F8	52/128	W 230/28	032300/4 hr/1 min
06608500	Soldier River at Pisgah, IA	CE5DDD4C	52/128	W 231/28	031800/4 hr/1 min
06609500	Boyer River at Logan, IA	CE5DD39E	52/128	W 231/28	031700/4 hr/1 min
06610000	Missouri River at Omaha, NE	CE5DF572	162/128	W 231/28	002635/1 hr/5 sec
06807000	Missouri River at Nebraska City, NE	DD9E2512	154/124	W 231/28	005610/1 hr/10 sec

Station Number	Station Name	NESDIS ID	Prim Chan/ Rand Chan	Ant. Azimuth/ Elev	Trans Time/Interval/ Window
06807000	Missouri River at Nebraska City, NE	CE5DE8D6	52/128	W 231/28	032000/4 hr/1 min
06807410	West Nishnabotna River at Hancock, IA	CE42A402	162/128	W 231/28	002730/1 hr/5 sec
06808500	West Nishnabotna River at Randolph, IA	CE3340A6	52/128	W 231/28	030000/4 hr/1 min
06809210	East Nishnabotna River near Atlantic, IA	CE42AAD0	162/128	W 232/27	002710/1 hr/5 sec
06809500	East Nishnabotna River at Red Oak, IA	CE3353D0	162/128	W 232/28	002715/1 hr/5 sec
06810000	Nishnabotna River above Hamburg, IA	CE5DE604	52/128	W 232/28	031900/4 hr/1 min
06813500	Missouri River at Rulo, NE	CE797960	52/128	W 232/29	023700/4 hr/1 min
06817000	Nodaway River at Clarinda, IA	DD89B5DA	154/124	W 232/28	001920/1 hr/10 sec
06819185	East Fork 102 River at Bedford, IA	DD89C34A	154/124	W 232/28	001930/1 hr/10 sec
06898000	Thompson River at Davis City, IA	DD89D03C	154/124	W 233/27	001940/1 hr/10 sec
06903400	Chariton River near Chariton, IA	CE64D3B2	58/128	W 234/27	004900/4 hr/1 min
06903700	South Fork Chariton River near Promise City, IA	CE64DD60	58/128	W 234/27	005000/4 hr/1 min
06903880	Rathbun Lake near Rathbun, IA	CE649E6A	58/128	W 234/26	004100/4 hr/1 min
06903900	Chariton River near Rathbun, IA	DD56D554	164/130	W 234/26	000630/1 hr/10 sec
06904010	06904010 Chariton River near Moulton, IA	CE64E628	58/128	W 234/26	005100/4 hr/1 min

APPENDIX - J. Nexrad and Precipitation Information on the Internet

Des Moines, IA - <http://www.crh.noaa.gov/radar/latest/DS.p19r0/si.kdmx.shtml>

Davenport, IA - <http://www.crh.noaa.gov/radar/latest/DS.p19r0/si.kdvn.shtml>

LaCross, WI - <http://www.crh.noaa.gov/radar/latest/DS.p19r0/si.karx.shtml>

Omaha, NE - <http://www.crh.noaa.gov/radar/latest/DS.p19r0/si.koax.shtml>

National radar selector - <http://www.crh.noaa.gov/radar/>

APPENDIX - K. Emergency Aerial Photography for Flood Mapping

MEMORANDUM

March 5, 2003

To: The file
From: Greg Nalley, Chief, Hydrologic Surveillance Section, WRD, Iowa
Subject: Emergency Aerial Photography for Flood Mapping

Only one contractor, listed below, has been located and may be interested as a bidder for aerial flood mapping.

Sky View Aerial Photography and Video

1-800-294-9255

Attn:

The procedure for initiating the bids is as follows:

1. Determine area to be mapped and time and date required.
2. Telephone contractors to obtain verbal bid.
3. Determine low bidder.
4. Issue purchase order.
5. Mail purchase order to successful bidder.

APPENDIX - L. List of Priority Stations for Flood Measurements (Updated March, 2006)

1. All Crest-Stage gages.
2. Any Station where peak-of-record is exceeded.
3. Regular continuous-record gaging station.
4. Check the go2 reports which are e-mailed daily to Field Technicians and Field Office Cheifs. This program will list stations where discharge measurements are needed based on stage-discharge relation and past measurements.

APPENDIX -M. List of County Emergency Managers for Iowa

Adair 1
Lynn Eddy, Coordinator
Office: 641-745-2291
Adair County EMA
205 SE Kent Street
Greenfield, Iowa 50849-1411
e-mail: leddy@nod-valley.k12.ia.us

Adams 2
Brian Kannas, Coordinator
Office: 641-322-3798
Adams County EMA
1007 7th St., PO Box 407
Corning, Iowa 50841
bkannas@frontiernet.net

Allamakee 3
Pat O'Reagan, Coordinator
Office: 563-568-1911
Allamakee County EMA
110 Allamakee St.
Waukon, IA 52172
e-mail: poregan5@hotmail.com

Appanoose 4
Jerald Ballanger, Coordinator
Office: 641-437-1909
Appanoose Co Emerg Mgmt Agcy
101 E. Van Buren
Centerville, Iowa 52544
e-mail: adlmem@sirisonline.com

Audubon 5
Lester Larsen, Coordinator
Office: 712-563-3483
Audubon County EMA
606 S. Division St.
Audubon, Iowa 50025
e-mail: auddissvc@iowatelecom.net

Benton 6
Scott Hansen, Coordinator
Office: 319-472-4519
Benton County EMA
Courthouse EOC - P.O. Box 398
Vinton, Iowa 52349-0398
e-mail: bentoncountyema@mebbs.com

Black Hawk 7
Frank Magsamen, Coordinator
Office: 319-291-4373
Black Hawk County EMA
1925 Newell Street
Waterloo, Iowa 50707
e-mail: bhccema@co.black-hawk.ia.us

Boone 8
David Morlan, Coordinator
Office: 515-433-0592
Boone County EMA
909 W. Mamie Eisenhower
Boone, Iowa 50036
e-mail: davem@co.boone.ia.us

Bremer 9
Kip Ladage, Coordinator
319-352-0133
Bremer County EMA
Courthouse, 415 E. Bremer Ave.
Waverly, Iowa 50677
e-mail: kladage@co.bremer.ia.us

Buchanan 10
Rick Wulfekuhle, Coordinator
Office: 319-334-6411
Buchanan County EMA
210 5th Ave., N.E., Courthouse
Independence, Iowa 50644
e-mail: bcem@indytel.com

Buena Vista 11
Robert Christensen, Coordinator
Office: 712-749-2705
Buena Vista County EMA
PO Box 276
Storm Lake, Iowa 50588
e-mail: bchris@co.buena-vista.ia.us

Butler 12
Steve Ulrichs, Coordinator
Office: 319-267-9967
Butler County EMA
428 6th Street, Box 325
Allison, Iowa 50602
e-mail: ems@butlercoiowa.org

Calhoun 13
Kerrie Hull, Coordinator
Office: 712-297-8323
Calhoun County EMA
501 Court St.
Rockwell City, IA 50579
e-mail: khull@calhouncountiowa.com

Carroll 14
Jeff Halbur, Coordinator
Office: 712-775-2166
Carroll County EMA
114 E 6th St.
Carroll, Iowa 51401
e-mail: ccmd@co.carroll.ia.us

Cass 15
Rob Koppert, Coordinator
Office: 712-243-1500
Cass County EMA
5 West 7th Street
Atlantic, Iowa 50022-1492
e-mail: rkoppert@casscoia.us

Sue Faith, Coordinator
Office: 319-356-6028
Cedar County EMA
511 S Capitol St.
Iowa City, IA 52240
e-mail: johnsoncedarema@co.johnson.ia.us

Cerro Gordo 17
Steve O'Neil, Coordinator
Office: 641-421-3665
Cerro Gordo County EMA
78 South Georgia St.
Mason City, Iowa 50401
e-mail: soneil@co.cerro-gordo.ia.us

Cherokee 18
Aimee Barritt, Coordinator
Office: 712-225-6721
Cherokee County EMA
Box D, 520 W. Main, Courthouse
Cherokee, Iowa 51012
e-mail: chersani@ncn.net

Chickasaw 19
Ken Rasing, Coordinator
Office: 641-394-2406
Chickasaw County EMA
Box 214-116 N. Chestnut St.
New Hampton, Iowa 50659
e-mail: chiras@iowatelecom.net

Clarke 20
Allan Mathias, Coordinator
Office: 641-342-6654
Clarke County EMA
Courthouse - 100 S. Main
Osceola, Iowa 50213
e-mail: clarkees@iowatelecom.net

Cedar 16

Clay 21
 Bryce Denker, Coordinator
 Office: 712-262-1019
 Clay County EMA
 300 W. 4th St. Suite 6A
 Spencer, Iowa 51301
 e-mail: bdenker@co.clay.ia.us

Clayton 22
 Joel Biggs, Coordinator
 Office: 563-245-3004
 Clayton County EMA
 PO Box 464-100 High St.
 Elkader, IA 52043

Clinton 23
 Walter D. Henry, Coordinator
 Office: 563- 242-5712
 Clinton County EMA
 600 N 2nd St-Suite 105
 Clinton, Iowa 52733-2957
 e-mail: ccema@mchsi.com

Crawford 24
 Gregory J. Miller, Coordinator
 Office: 712-269-2422
 Crawford County EMA
 P.O. Box 423, 38 N. Main St.
 Denison, Iowa 51442-0473
 e-mail: mlrlyte@pionet.net

Dallas 25
 Barry Halling, Coordinator
 Office: 515-993-2134
 Dallas County EMA
 2585 N. Ave.
 Adel, Iowa 50003
 e-mail: dcema@dwx.com

Jerald Ballanger, Coordinator
 Office: 641-437-1909
 Davis County EMA
 101 E. Van Buren
 Centerville, IA 52244
 e-mail: adimem@sirisonline.com

Decatur 27
 Richard Erke, Coordinator
 Office: 641-446-7307
 Decatur County EMA
 RR 1, Box 97A
 Leon, Iowa 50144
 e-mail: erke@grm.net

Delaware 28
 Norm Wellman, Coordinator
 Office: 563-927-5561
 Delaware County EMA
 Courthouse, 301 E. Main St.
 Manchester, Iowa 52057
 nmwelman@iowatelecom.net

Des Moines 29
 Gina Hardin, Coordinator
 Office: 319-753-8206
 Des Moines County EMA
 512 N. Main St.
 Burlington, Iowa 52601
 e-mail: harding@co.des-moines.ia.us

Dickinson 30
 Michael Ehret, Coordinator
 Office: 712-336-3987
 Dickinson County EMA
 P.O. Box 752
 Spirit Lake, Iowa 51360-0752
 e-mail: mehret@co.dickinson.ia.us

Davis 26

Dubuque 31
Tom Berger, Coordinator
Office: 563-589-4170
Dubuque County EMA
11 West 9th Street
Dubuque, Iowa 52001
e-mail: dbqema@mwci.net

Emmett 32
Terry Reekers, Coordinator
Office: 712-362-5702
Emmet County EMA
508 South 1st. St.
Estherville, Iowa 51334-2500
e-mail: ematerf5@netins.net

Fayette 33
Wally Rundle, Acting Coordinator
Office: 319-283-5722
Fayette County EMA
107 12th Ave SE
Oelwein, IA 50662
e-mail: chief770@trxinc.com

Floyd 34
Kenneth Mahler, Coordinator
Office: 641-257-6144
Floyd County EMA
Courthouse, 101 S.Main St., Ste. 108
Charles City, Iowa 50616-2756
e-mail: floydema@fiai.net

Franklin 35
Steve O'Neil, Coordinator
Office: 641-456-4254
Franklin County EMA
78 S. Georgia Avenue
Hampton, Iowa 50441
e-mail: soneil@co.cerro-gordo.ia.us

Samuel C. Haun, Coordinator
Office: 712-382-2592
Fremont County EMA
2203 Argyle St.
Hamburg, IA 51640

Greene 37
Dennis Morlan, Coordinator
Office: 515-386-4404
Greene County EMA
204 N. Grimmell St., P.O. Box 416
Jefferson, Iowa 50129
e-mail: gcems@netins.net

Grundy 38
Chris Heerkes, Coordinator
Office: 319-824-6933
Grundy Co Emerg Mgmt Agcy
705 8th St
Grundy Center, Iowa 506038-1344
e-mail: cheerkes@grundysheriff.org

Guthrie 39
Bob Kempf, Coordinator
Office: 641-332-3030
Guthrie County EMA
200 N. 5th St., Courthouse
Guthrie Center, Iowa 50115
e-mail: gcema@hotmail.com

Hamilton 40
Terry A. Johnston, Coordinator
Office: 515-832-9518
Hamilton County EMA
Hamilton County Courthouse
Webster City, Iowa 50595-3195

Fremont 36

Hancock 41
 Andrew Buffington, Coordinator
 Office: 641-923-2702
 Hancock County EMA
 875 State St., PO Box 70
 Garner, Iowa 50438-0070
 e-mail: hancoema@ncn.net

Hardin 42
 Douglas Riggs, Coordinator
 Office: 641-939-8132
 Hardin County EMA
 Box 173 - 1201 14th Ave.
 Eldora, Iowa 50627
 e-mail: driggs@co.hardin.ia.us

Harrison 43
 Todd Baber, Coordinator
 Office: 712-644-2353
 Harrison County EMA
 111 South 1st Avenue
 Logan, Iowa 51546
 e-mail: hcema@harrisoncountya.org

Henry 44
 Ed Farley, Coordinator
 Office: 319-385-1479
 Henry County EMA
 220 W. Monroe
 Mt. Pleasant, Iowa 52641
 e-mail: disaster@lisco.com

Howard 45
 Darrell Knecht, Coordinator
 Office: 563-547-1165
 Howard Co Emerg Mgmt Agcy
 124 S Park Place
 Cresco, Iowa 52136
 e-mail: dknecht@co.howard.ia.us

Doug Wood, Coordinator
 Office: 515-332-4809
 Humboldt County EMA
 2221 220th St.
 Humboldt, Iowa 50548
 e-mail: dougwood@trvnet.net

Ida 47
 Edward Sohm, Coordinator
 Office: 712-364-2533
 Ida County EMA
 401 Moorehead St., Courthouse
 Ida Grove, Iowa 51445-1429
 e-mail: idaemes@pionet.net

Iowa 48
 Alan Husband, Coordinator
 Office: 319-642-3151
 Iowa County EMA
 132 W. Marion
 Marengo, Iowa 52301

Jackson 49
 Dr. Robert Deegan, Coordinator
 Office 563-686-7036
 Jackson County EMA
 201 W. Platt St.
 Maquoketa, Iowa 52060
 e-mail: rdeegan@co.jackson.ia.us

Jasper 50
 Larry D'Abate, Coordinator
 Office: 641-792-7555
 Jasper County EMA
 115 North 2nd Ave. E
 Newton, Iowa 50208
 e-mail: ema@co.jasper.ia.us

Humboldt 46

Jefferson 51
Jerry Calnon, Coordinator
Office: 641-472-4146
Jefferson County EMA
1200 West Grimes
Fairfield, Iowa 52556
e-mail: jerryemae911@lisco.com

Johnson 52
Tom Hansen, Coordinator
Office: 319-356-6028
Johnson County EMA
P.O. Box 169, 511 S. Capitol
Iowa City, Iowa 52244
e-mail: jocoema@co.johnson.ia.us

Jones 53
Brenda Leonard, Coordinator
Office: 319-462-4715
Jones County EMA
Courthouse
Anamosa, Iowa 52205
e-mail: jceh@n-connect.net

Keokuk 54
Larry Smith, Coordinator
Office: 641-622-2528
Keokuk County EMA
P.O. Box 273, 515 N. Jefferson
Sigourney, Iowa 52591-0273
e-mail: lsmith5450@lisco.com

Kossuth 55
Jim Kelley, Coordinator
Office: 515-295-5904
Kossuth County EMA
121 West State Street
Algona, Iowa 50511
e-mail: kossema@co.kossuth.ia.us

Steve Cirinna, Coordinator
Office: 319-372-4124
Lee County EMA
P.O. Box 240, City Hall - 811 Avenue E
Ft. Madison, Iowa 52627
Lee.county@hlsem.state.ia.us

Linn 57
Walter "Ned" Wright, Coordinator
Office: 319-363-2671
Linn County EMA
PO Box 1387-6301 Kirkwood Blvd
Cedar Rapids, Iowa 52401
e-mail: ned.wright@linnema.com

Louisa 58
Tom Colthurst, Coordinator
Office: 319-658-3851
Louisa County EMA
2873 Louisa - Washington Rd.
Columbus Junction, Iowa 52378
louisaema@louisacomm.net

Lucas 59
Jerald Ballanger, Coordinator
Office: 641-437-1909
101 E. Van Buren
Centerville, IA 52544
e-mail: adlmem@sirisonline.com

Lyon 60
Wayne Jepsen, Coordinator
Office: 712-472-8330
Lyon County EMA
410 S Boone
Rock Rapids, Iowa 51246
e-mail: lyonlec@hickorytech.net

Madison 61
 Larry Moorhead, Coordinator
 Office: 515-462-3292
 Madison County EMA
 2215 Cumming Rd
 Winterset, Iowa 50273
 e-mail: madisonemc@i-rule.net

Mahaska 62
 Bob Elder, Coordinator
 Office: 641-672-1209
 Mahaska County EMA
 214 High Ave. East
 Oskaloosa, Iowa 52577
 e-mail: ema@mahaskacounty.org

Marion 63
 Ray Stone, Coordinator
 Office: 641-828-2256
 Marion County EMA
 Marion County Courthouse
 Knoxville, Iowa 50138
 e-mail: rstone@co.marion.ia.us

Marshall 64
 Deanna Neldeberg-Bachman, Coordinator
 Office: 641-754-6385
 Marshall County EMA
 City Hall, 24 N. Center St.
 Marshalltown, Iowa 50158
 e-mail: dneldeberg@co.marshall.ia.us

Mills 65
 Larry Hurst, Coordinator
 Office: 712-527-3643
 Mills County EMA
 418 Sharp St., Courthouse
 Glenwood, Iowa 51534
 e-mail: lhurst@millsctyema.org

Ray Huftalin, Coordinator
 Office: 641-732-5872
 Mitchell County EMA
 211 S. 6th Street
 Osage, Iowa 50461
 e-mail: mitcoema@osage.net

Monona 67
 Randy Ross, Coordinator
 Office: 712-423-1294
 Monona County EMA
 909 Seventh St.
 Onawa, Iowa 51040
 e-mail: mocoema@longlines.com

Monroe 68
 Jerald Ballanger, Coordinator
 Office: 641-437-1909
 Monroe County EMA
 101 E. Van Buren
 Centerville, IA 52544
 adlmem@sirisonline.com

Montgomery 69
 Adam Wainwright, Coordinator
 Office: 712-623-5197
 105 Coolbaugh
 Red Oak, Iowa 51566
 e-mail: montgomerycountyemc@hotmail.com

Muscatine 70
 Jeff Carter, Coordinator
 Office: 563-288-2526
 Muscatine County EMA
 Public Safety Bldg., 312 E. 5th St.
 Muscatine, Iowa 52761
 e-mail: muscatinecoema@machlink.com

Mitchell 66

O'Brien 71
Anne Koontz, Coordinator
Office: 712-757-4305
O'Brien County EMA
Box 482-240 1st St., NE
Primghar, Iowa 51245
e-mail: obcema@iowatelecom.net

Osceola 72
Debra Goettig, Coordinator
Office: 712-754-2381
Osceola Co Emerg Mgmt Agcy
751 Johannes St.
Ashton, IA 51232
e-mail: dgoettig@osceolacoia.org

Page 73
Raymond Bryant, Coordinator
Office: 712-246-4254
Page County EMA
Box 569, 815 W. Thomas St.
Shenandoah, Iowa 51601
e-mail: rayike@mchsi.com

Palo Alto 74
Jarrett Lee, Coordinator
Office: 712-852-4997
Palo Alto County EMA
2707 17th St.
Emmetsburg, Iowa 50536-1154
e-mail: paema@iowatelecom.net

Plymouth 75
Gary Junge, Coordinator
Office: 712-546-8101
Plymouth County EMA
PO Box 622
LeMars, Iowa 51031
e-mail: plyema@frontiernet.net

Tim McKiernan, Coordinator
Office: 712-335-3188
Pocahontas County EMA
99 Court Square
Pocahontas, Iowa 50574
e-mail: tmckieman@pocahontascoia.us

Polk 77
A.J. Mumm, Coordinator
Office: 515-286-2107
Polk County EMA
111 Court Ave.
Des Moines, Iowa 50309
e-mail: amumm@co.polk.ia.us

Pottawattamie 78
Terry Hummel, Coordinator
Office: 712-328-5777
Pottawattamie County EMA
Courthouse, 227 S. 6th St.
Council Bluffs, Iowa 51501
e-mail: pott.ema@pottcounty.com

Poweshiek 79
Dan DeMott, Coordinator
Office: 641-236-0160
Poweshiek County EMA
609 4th Ave
Grinnell, IA 50112
e-mail: ema@poweshiekcosherriff.com

Ringgold 80
Teresa Jackson, Coordinator
Office: 641-464-3232
Ringgold County EMA
707 S. Henderson St.
Mt. Ayr, Iowa 50854
e-mail: tjackson@iowatelecom.net

Sac 81
 Jim Bullock, Coordinator
 Office: 712-662-4789
 Sac County EMA
 1020 W. Main Street
 Sac City, Iowa 50583
 e-mail: sacesa@mchsi.com

Scott 82
 Ross Bergen, Coordinator
 Office: 563-326-8663
 Scott County EMA
 Courthouse, 416 W. 4th St.
 Davenport, Iowa 52801
 e-mail: scema@msn.com

Shelby 83
 Bob Seivert, Coordinator
 Office: 712-755-5160
 Shelby County EMA
 612 Court St.
 Harlan, Iowa 51537
 e-mail: bseivert@shco.org

Sioux 84
 James Raymond, Coordinator
 Office: 712-737-4010
 Sioux County EMA
 4363 Ironwood Ave - Suite 3
 Orange City, Iowa 51041
 e-mail: jraymond@siouxcounty.org

Story 85
 Lori Morrissey, Coordinator
 Office: 515-382-7315
 Story County EMA
 Courthouse, 900 6th St.
 Nevada, Iowa 50201
 e-mail: storyema@aol.com

Roxane Warnell, Coordinator
 Office: 641-484-6261
 Tama County EMA
 P.O. Box 61
 Toledo, Iowa 52342
 e-mail: rwarnell@tamacounty.org

Taylor 87
 Michael Ware, Coordinator
 Office: 712-523-2840
 Taylor County EMA
 1104 Dodge St.
 Bedford, Iowa 50833
 e-mail: mickw@tamacounty.org

Union 88
 Roger Nurnberg, Coordinator
 Office: 641-782-1622
 Union County EMA
 208 W. Taylor St.
 Creston, Iowa 50801-3766
 e-mail: ucema@heartland.net

Van Buren 89
 William Cline, Coordinator
 Office: 641-680-0998
 Van Buren County EMA
 510 S. 5th St.
 Farmington, IA 52626
 e-mail: vanburenema@yahoo.com

Wapello 90
 Stephen O'Connor, Coordinator
 Office: 641-683-0666
 Wapello County EMA
 201 N. Wapello
 Ottumwa, Iowa 52501-0496
 e-mail: oconnors@ci.ottumwa.ia.us

Tama 86

Warren 91
Mahala Cox, Coordinator
Office: 515-961-1105
Warren County EMA
115 N Howard Rm 102-PO Box 337
Indianola, Iowa 50125
e-mail: wcema@co.warren.ia.us

Washington 92
Larry Smith, Coordinator
Office: 641-660-1825
Washington County EMA
PO Box 273-515 ½ N Jefferson
Sigourney, IA 52591-0273
e-mail: lsmith5450@lisco.com

Wayne 93
Bill Yeager, Coordinator
Office: 641-873-6527
Wayne County EMA
2781 Hwy S26
Allerton, Iowa 50008
e-mail: billjoyeg@msn.com

Webster 94
Tony Jorgensen, Coordinator
Office: 515-573-1403
Webster County EMA
LEC Building, 702 1st Ave. S.
Ft. Dodge, Iowa 50501
e-mail: ema@webstercountyia.org

Winnebago 95
Joel LaRue, Coordinator
Office: 641-585-1942
Winnebago County EMA
216 S. Clark Street
Forest City, Iowa 50436
e-mail: winncoema@wctatel.net

Bruce Goetsch, Coordinator
Office: 563-387-4095
Winneshiek County EMA
400 Claiborne Dr.
Decorah, Iowa 52101
e-mail: ema96ia@netins.net

Woodbury 97
Gary Brown, Coordinator
Office: 712-876-2212
Woodbury County EMA
121 Deer Run Trail
Climbing Hill, Iowa 51015-8124
e-mail: wcdes@netins.net

Worth 98
Ray Huftalin, Coordinator
Office: 641-732-5872
Worth County EMA
Courthouse, 1000 Central Ave.
Osage, Iowa 50461
e-mail: mitcoema@osage.net

Wright 99
Dennis Borrill, Coordinator
Office: 641-444-3357
Wright County EMA
313 7th St N.E.
Belmond, Iowa 50421
e-mail: d.borrill@mchsi.com

Winneshiek 96