

# **IOWA 2011**

## **MISSOURI RIVER FLOODS**

### **AFTER ACTION REPORT**

**20 December 2011**



## HANDLING INSTRUCTIONS

The title of this document is *Iowa 2011 Missouri River Floods After Action Report (AAR)*.

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## TABLE OF CONTENTS

<b>Handling Instructions .....</b>	<b>1</b>
<b>Executive Summary .....</b>	<b>3</b>
<b>Section 1: Incident Overview .....</b>	<b>5</b>
2011 Upper Missouri River Basin Weather Conditions .....	5
State and County Flood Operations .....	5
Economic Impacts and Federal Declarations .....	6
<b>Section 2: Detailed Findings .....</b>	<b>8</b>
General Findings .....	8
Operations .....	9
Planning .....	13
Logistics .....	14
Emergency Public Information .....	17
<b>Section 3: Conclusion.....</b>	<b>19</b>
<b>Appendix A: Lessons Learned.....</b>	<b>20</b>
<b>Appendix B: Acronyms.....</b>	<b>21</b>

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## EXECUTIVE SUMMARY

In May 2011, very heavy rains combined with above average snowpack caused reservoirs throughout the Upper Missouri River basin to swell. The river carried more water in May and June than it does in an average year. The six Iowa counties bordering the river—Fremont, Harrison, Mills, Monona, Pottawattamie and Woodbury—suffered from major flooding which persisted throughout the spring and summer.

On June 2, Governor Terry Branstad issued a Proclamation of Disaster Emergency for the six impacted counties. The Iowa Homeland Security and Emergency Management Division (HSEMD) activated the State Emergency Operations Center (SEOC) on June 10 to coordinate State, Federal, private sector, and voluntary agency preparedness and response activities in the affected area. The severity and duration of the flooding presented operational challenges for the SEOC and its partner agencies, which were further complicated by severe weather. The flooding forced the SEOC to conduct simultaneous response and recovery operations for an usually long period of time.

The Missouri River floods caused major economic losses in Western Iowa. As a result of these economic losses, President Barack Obama issued a Major Disaster Declaration (FEMA-1998-DR) which made six counties eligible for Federal Public Assistance. The disaster declaration was subsequently amended on October 18, making five counties eligible for Federal Individual Assistance.

### About this After Action Report

HSEMD contacted Federal Emergency Management Agency (FEMA) Region VII to request FEMA support to develop an after action report (AAR). FEMA's *Lessons Learned Information Sharing (LLIS.gov)* program had assisted HSEMD several years earlier to develop the 2008 Iowa Summer Storms AAR. A joint FEMA Region VII and National Preparedness Directorate / National Preparedness Assessment Division (NPAD) team worked with HSEMD to conduct a hot wash at the SEOC on November 18, 2011. The joint team collected survey and other data, reviewed the information, and developed this AAR. This AAR focuses on SEOC response operations related to the 2011 Missouri River floods.

### Major Strengths

This AAR identifies the following as major strengths that were demonstrated during the 2011 Missouri River floods:

- SEOC leaders established an environment that emphasized open communications and cooperation among partners.
- The transition to virtual operations enabled the SEOC to maintain effective response operations for a prolonged period of time.

- The critical infrastructure planning group enabled the SEOC to develop a coordinated approach to protecting infrastructure threatened by the floods.
- The SEOC's WebEOC resource management tool provided critical visibility of deployed resources and facilitated the return of recoverable resources.

## Primary Areas for Improvement

This AAR identifies the following as primary areas for improvement that were demonstrated during the 2011 Missouri River floods:

- The prolonged duration and magnitude of the flooding presented unique challenges for SEOC operations and planning.
- Communications and information sharing between the SEOC and county emergency management agencies impacted by the disaster were not sufficient to fully support SEOC operations.
- Several State agencies deployed field liaisons to the impacted area, which presented coordination issues for the SEOC.



**Figure 1: Satellite Image of a Levee Failure near Hamburg, Iowa, Captured on June 24, 2011**  
(Source: National Aeronautics and Space Administration)

## SECTION 1: INCIDENT OVERVIEW

### 2011 Upper Missouri River Basin Weather Conditions

The Upper Missouri River basin experienced unusual weather conditions throughout the winter and spring of 2011. Snow continued to accumulate in the region much later into the spring than had occurred in previous years. Temperatures stayed unseasonably cold from March through May, causing the snow at lower elevations to remain on the ground for a longer period of time. According to the National Oceanic and Atmospheric Administration (NOAA), areas around the Missouri river headwaters had more than 130% of the average snowpack on the ground compared to the period from 1971-2000.

Severe storms in May brought the equivalent of nearly a year's amount of rain to the Upper Missouri River. The rainfall combined with heavy runoff from melting snow caused reservoirs from Montana to South Dakota to reach their limits. NOAA reported that "On average, the Missouri River channels 24.8 million acre feet of water per year. This year, it carried 24.3 million acre feet in May and June alone."

### State and County Flood Operations

The State of Iowa and counties bordering the Missouri River began preparing for and responding to the floods. State agencies began meeting and conducting briefings on June 1 in response to the potential for record flooding along the Missouri River. The next day, Governor Terry Branstad issued an Iowa Emergency Disaster Proclamation for six counties: Fremont, Harrison, Mills, Monona, Pottawattamie and Woodbury. As flooding began to impact the area over the next days, jurisdictions conducted sandbagging operations and issued evacuation orders. The Iowa Department of Transportation (IDOT) began closing sections of interstates on June 8. Two days later, the Missouri River level reached 33.3 feet in Sioux City, 5 feet above the crest recorded during the 1993 floods. Levees throughout the area failed from mid- to late June.



**Figure 2: Levee Failure in Hamburg, Iowa**  
(Source: Iowa Department of Public Safety)

The State Emergency Operations Center (SEOC) activated on June 10 to coordinate State, Federal, private sector, and voluntary agency preparedness and response activities in the affected



area. SEOC partners conducted a wide range of activities to prepare for flooding in the area and to respond once flooding occurred (these activities are described throughout Section 2 below). The severity and duration of the flooding presented operational challenges for the SEOC and its partner agencies. Most significantly, the SEOC conducted response operations for over four months, much longer than is typical in other large-scale disasters. Straight-line windstorms, dangerous heat, and other severe weather experienced during this period further complicated flood operations. As described in Section 2 below, the SEOC implemented lessons it had learned during previous incidents, particularly the 2008 summer storms, to manage complex flood operations over a long period of time.

## **Economic Impacts and Federal Declarations**

Missouri River flooding caused major economic losses in Western Iowa. An Iowa Farm Bureau Federation study estimated \$207 million in lost crop sales and related economic activity in six counties affected by the flooding. The flooding caused an estimated \$40 million in damages to 54 miles of county roads in Pottawattamie County. As a result of these economic losses, President Barack Obama issued a Major Disaster Declaration (FEMA-1998-DR) on June 27, 2011, which made six counties eligible for Federal Public Assistance. The disaster declaration was subsequently amended on October 18, making five counties eligible for Federal Individual Assistance.

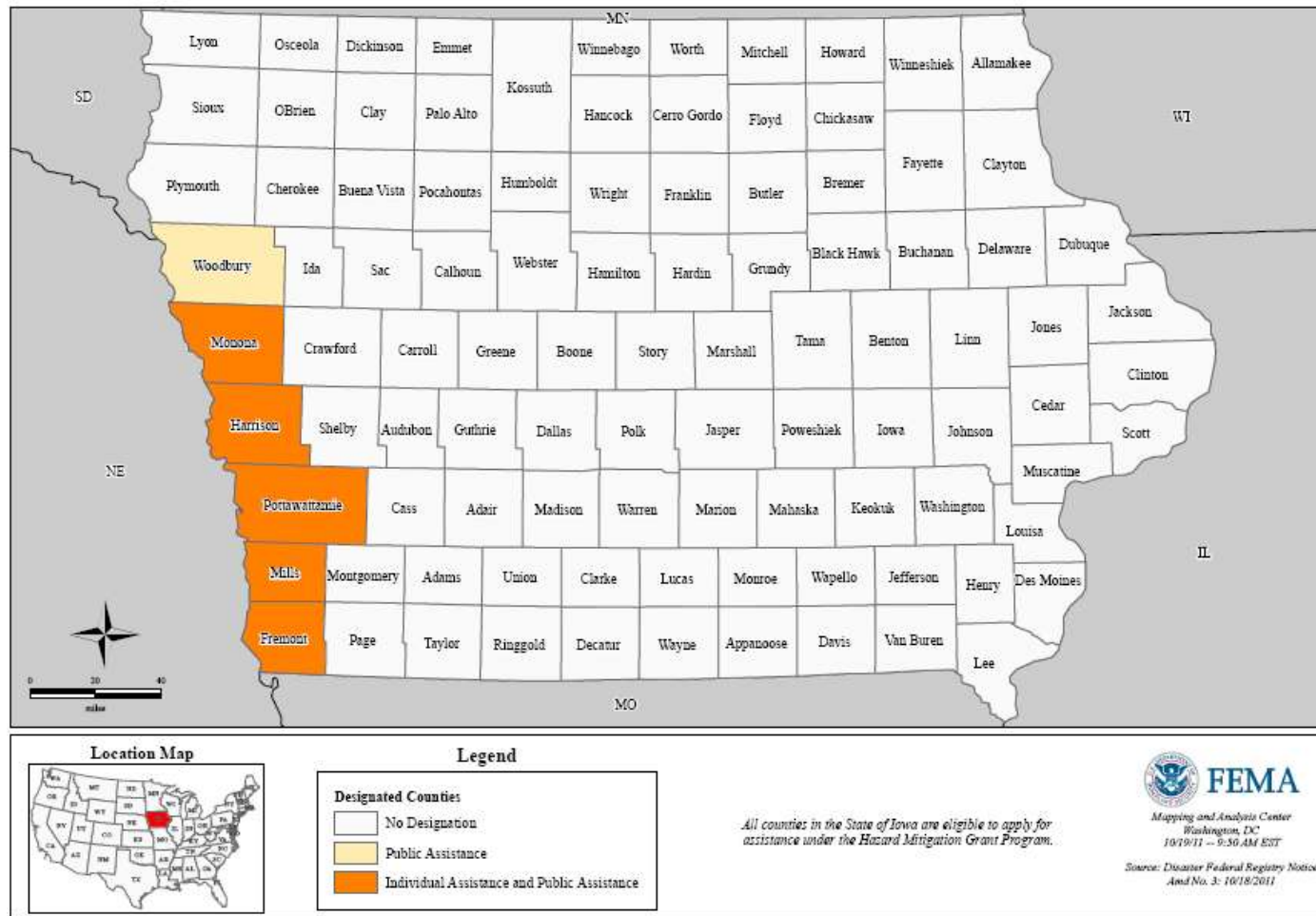


Figure 3: Map of FEMA-1998-DR Iowa Disaster Declaration as of October 18, 2011



## SECTION 2: DETAILED FINDINGS

This section presents detailed findings about the Iowa SEOC coordination activities related to the 2011 Missouri River floods. It focuses on SEOC operations and coordination with State, Federal, private sector, and voluntary organizations to conduct response operations. These findings describe both strengths and areas for improvement regarding SEOC processes and operations.

### General Findings

**Observation 2.1: Strength:** The SEOC staff's knowledge and experience provided the foundation for conducting effective operations during the 2011 Missouri River floods.

**Analysis:** Many of the HSEMD, State agency, Federal, private sector, and voluntary organization personnel who staffed the SEOC had experience during previous activations, with some having served in the same emergency assignment. This continuity ensured staff were knowledgeable about SEOC procedures and practices. Having worked together in prior SEOC activations, staff were familiar with their colleagues and partner agencies. This facilitated a cohesive, collaborative, and forward-leaning approach to addressing issues as they arose during the flood response operations.

SEOC staff applied the lessons they had learned in previous incidents, particularly the 2008 summer storms and flooding, which prepared them to meet the challenges presented by the Missouri River flooding. Further, the SEOC had the tools and support to ensure that staff who did not have prior SEOC experience could quickly become effective members of the team. Finally, it should be noted that SEOC staff could benefit from having a better understanding of the resources and capabilities of their partner agencies.

**Observation 2.2: Strength:** Senior officials established clear goals and priorities for all SEOC staff throughout the disaster.

**Analysis:** The Governor's Office, working through the HSEMD Administrator and the Executive Office of the SEOC, set goals for response operations and the overall concept of operations early in the flood response. These operational goals and concept were communicated to the SEOC by the HSEMD Administrator and senior SEOC officials through briefings and other means. SEOC leaders kept staff informed as response priorities evolved over the course of the incident. As a result of these leadership efforts, the agencies represented in the SEOC had a clear understanding of their roles and responsibilities for the flood response. This facilitated an integrated response during the incident.

**Observation 2.3: Area for Improvement:** The prolonged duration and magnitude of the flooding presented unique challenges for SEOC operations and planning.

**Analysis:** The Missouri River floods caused extensive damage throughout the area, requiring response operations that spanned nearly four months. Flooding threatened levees and critical infrastructure, which could have resulted in regional shortages and

significant economic impact. SEOC operations and planning had to address both immediate protective actions, such as shoring up levees, while preparing for larger, future contingencies, such as the potential evacuation of Council Bluffs. Response operations personnel recognized that communities that had numerous protective measures in place could be confronted with a “bathtub” type environment due to an inch of rain that could not drain. The duration of the incident, combined with its complexity, taxed available resources and plans. Further, other incidents occurred during the Missouri River flood response that further strained response capabilities, including the July straight-line windstorm (“derecho”) and the severe storms and heavy rains that occurred in August.

This disaster’s duration and complexity highlight areas in which the SEOC can further improve its ability to manage large-scale disaster responses. First, HSEMD should assess the SEOC’s ability to manage events whose impacts meet or exceed the 2011 and 2008 flood disasters. This assessment should evaluate whether SEOC plans and processes are sufficient to address atypical, large-scale disasters. Second, SEOC staff could have become fatigued due to the long duration of response operations to the 2011 floods. This indicates the need for the SEOC to identify opportunities for accessing surge personnel during large-scale disasters. Non-traditional sources, such as recent retirees, may be an option.

#### **Recommendations:**

1. HSEMD should assess the adequacy of SEOC plans and procedures for large-scale disasters.
2. HSEMD and SEOC partner agencies should identify mechanisms for developing a cadre of trained surge personnel for use during large-scale, prolonged response operations.

## **Operations**

**Observation 2.4: Strength:** SEOC leaders established an environment that emphasized open communications and cooperation among partners.

**Analysis:** The leadership provided by senior SEOC officials, combined with the staff’s prior experience, engendered a spirit of trust and candor within the center. This ensured that SEOC partners maintained open communications, even when sensitive issues were discussed. SEOC partners had, for the most part, access to the information they needed to perform their assigned tasks. Information within the SEOC was communicated quickly and effectively. As described below, briefings and WebEOC were critical for maintaining open communications and cooperation among partners.

**Observation 2.5: Strength:** The transition to virtual operations enabled the SEOC to maintain effective response operations for a prolonged period of time.

**Analysis:** The tempo of flood response operations necessitated the activation of the SEOC for a prolonged period of time. SEOC leaders decided to transition to a Virtual SEOC that matched the tempo of response operations. This enabled SEOC partners to

remain engaged in operations in an efficient manner. The Virtual SEOC concept had been used during prior winter and ice storms, so that staff would not have to travel in inclement weather. Central for the Virtual SEOC was the use of WebEOC and regular in-person briefings. The Virtual SEOC relieved partners of the need to staff a full-time position at the physical SEOC location. Staff could perform their SEOC responsibilities while continuing to perform their non-disaster tasks. The Virtual SEOC also allowed State personnel to coordinate with their agency managers while coordinating with the SEOC. Further, employing a Virtual, rather than physical, SEOC saved the State a significant amount of money.

Overall, SEOC staff found the Virtual SEOC was a very effective innovation that should be part of SEOC plans and standard operating procedures (SOPs). However, staff noted the Virtual SEOC cannot capture the interpersonal dynamics that arise from having all SEOC personnel operating from the same location. Some State agency partners could not easily access all the documents—such as press releases, proclamations, and plans—virtually that they would access if located at the SEOC. Finally, the Virtual SEOC led some county emergency management agencies to erroneously conclude the State was not engaged in response operations on a 24 hour basis.

**Recommendations:**

1. HSEMD should revise SEOC plans and SOPs to address Virtual SEOC operations.
2. All partners should ensure they have backup copies of needed resources they can utilize in either a virtual activation or at the SEOC.

**Observation 2.6: Strength:** Regularly scheduled State Agency briefings kept SEOC staff informed of on-going flood operations.

**Analysis:** The SEOC established a schedule for regular State Agency briefings once it transitioned to virtual operations. These briefings kept all response partners informed flood response operational priorities and activities. The SEOC adjusted the briefing schedule as response operations evolved over several months. SEOC staff found the briefings very valuable for staying informed about current operations and future plans. The State Agency briefings enabled SEOC staff to take action on the information they received. For example, Joint Information Center (JIC) personnel received up-to-date information and identified actions to be taken, such as rumor control, through the briefings. SEOC staff found the number of briefings to be appropriate, given the level of response operations. SEOC staff noted the briefings could have been more valuable if they included information from county emergency management coordinators. Some partners indicated they would have benefited from having the ability to call in with a conference call option.

**Recommendation:**

1. HSEMD should explore opportunities for incorporating county perspectives in SEOC briefings during disasters.

**Observation 2.7: Strength:** WebEOC served as a critical information sharing tool and provided the backbone for Virtual SEOC operations.

**Analysis:** After the 2008 summer storms, HSEMD identified and implemented modifications to its WebEOC system to improve its effectiveness (also see Observation 2.16 below). These modifications made WebEOC a more effective tool for monitoring the flood event, resource management, resource requests, actions taken, and the responsible agency or agencies. SEOC staff were comfortable using WebEOC to communicate and share information, which was particularly important when the SEOC transitioned to virtual operations. WebEOC enabled SEOC personnel to login to the system from any location and quickly get updated information about the flood incident. As flood operations wound down, some SEOC staff relied on telephone calls and email rather than utilizing WebEOC. This resulted in missed communications, and duplication of efforts due to information not being shared with all SEOC staff. Further, the reduction of information recorded in WebEOC had an impact on the value of the system being able to be used as a historical log for the event.

**Recommendation:**

1. HSEMD should reinforce the importance of recording information in WebEOC, particularly when the SEOC is conducting virtual operations.

**Observation 2.8: Strength:** State agency meetings facilitated communications and information sharing among SEOC partners.

**Analysis:** These meetings allowed State agencies to inform each other about their flood response operations as well as to plan for future operations. Many SEOC personnel found these meetings to be very beneficial and appreciated that meeting minutes were distributed and posted to WebEOC. State agency meetings also resulted in additional collaboration among SEOC partners to address issues identified in the meetings.

**Observation 2.9: Area for Improvement:** Communications and information sharing between the SEOC and county emergency management agencies impacted by the disaster could have been enhanced, which would have better supported SEOC operations.

**Analysis:** County emergency management agencies communicated with the SEOC in various manners, including submitting resource requests through WebEOC (see Observation 2.16 below). However, some county emergency management agencies did not enter all relevant information into the WebEOC system. One county failed to enter any information in the system. Consequently, disconnects occurred between the SEOC and county emergency management agencies. In some cases, the state had no visibility on the issues confronting counties. Further, these information sharing challenges meant some counties did not have a full appreciation of the magnitude of the State's response operations. Numerous training opportunities have been provided to local partners. Additional training and exercises can reinforce information sharing and communications processes to be used between the SEOC and county emergency management agencies during disasters.

**Recommendations:**

1. HSEMD needs to continue to provide training to county emergency management agencies about communications and information sharing processes during disasters.
2. HSEMD needs to continue to stress the importance of utilizing WebEOC and the system capabilities.

**Observation 2.10: *Strength:*** The SEOC conducted simultaneous response and recovery operations for an extended period of time due to the nature of the flood incident.

**Analysis:** SEOC recovery operations began while response operations were still underway. This resulted in a much longer period of overlap between response and recovery operations than typically occurs in disasters. SEOC response and recovery personnel coordinated effectively despite their different responsibilities and changes in personnel. The SEOC Chief of Operations and State Coordinating Officer began coordinating directly early in the incident. However, the 2011 floods illustrated some of the challenges of conducting simultaneous response and recovery operations for a long duration. One example of response and recovery overlap is in assessing damage and impacts. In the response phase, the focus on damages is more of a disaster assessment which looks at things such as the need for shelter and mass care based on destroyed structures. Damage assessment, the counting of impacted structures and determining the cost of damages to roads, bridges and critical infrastructure is performed in the recovery phase. There is a vital need for the response and recovery personnel to communicate and support one another when the two phases overlap for an extended period of time.

**Recommendation:**

1. HSEMD should continue to establish and/or refine procedures for coordinating all activities that must be performed during disasters that have a prolonged response period.

**Observation 2.11: *Area for Improvement:*** Several State agencies deployed field liaisons to the impacted area, which presented coordination issues for the SEOC.

**Analysis:** State agencies deployed field teams independently, some of which had overlapping missions and/or expertise. Coordination of liaison teams became increasingly challenging as response operations extended and recovery operations got underway. Some personnel deployed as field liaisons were not prepared for the assignment. These personnel had not been trained in the fundamental elements of emergency operations centers. Further, some information gathered by liaison officers was disseminated within their agency but not within the SEOC. Based on this incident, there are a number of opportunities to improve the use of field liaisons during large-scale incidents.

**Recommendations:**

1. HSEMD and State agency partners should consider forming multi-agency teams as an alternative to deploying multiple, overlapping teams.

2. HSEMD and State agency partners should establish training requirements before an individual can be assigned as a field liaison during an incident.
3. HSEMD and State agency partners should review and update field liaison plans, procedures, and job action sheets.
4. HSEMD and State agency partners should document and exercise their field liaison procedures, which should lead to the establishment of common field liaison best practices.
5. HSEMD and State agency partners should work with counties to clearly define the role and responsibilities of State liaisons before they are deployed for an incident.

## Planning

**Observation 2.12: Strength:** SEOC planning processes kept partner agencies informed and engaged, which enabled them to make necessary changes to their plans and operations.

**Analysis:** The duration of the 2011 floods had the potential for SEOC partners to become disengaged or not receive information about planning activities. However, the SEOC employed planning processes that kept partner agencies engaged and informed. Agencies had the opportunity to interact with various partners that they may not routinely interact with. This resulted in a number of benefits, including improved working relationships and better plans. For example, MidAmerican Energy, a member of the Safeguard Iowa Partnership (SIP), provided the SEOC and State JIC with information regarding impacts to critical infrastructure. SIP assisted in gathering impact information from its membership. The Iowa Disaster Human Resource Council coordinated with local Community Organizations Active in Disasters and Long-Term Recovery Committees to provide feedback from the local level. Overall, these planning processes illustrate the use of Whole Community principles to meet the challenges presented by the 2011 floods. HSEMD and its SEOC partners should continue to build on this experience by expanding the range of partners, particularly with private sector and voluntary organizations.

**Recommendation:**

1. HSEMD should continue to work with partners at all levels to gather comprehensive information about the disaster event.

**Observation 2.13: Strength:** The formation of joint planning groups contributed to effective SEOC planning during the 2011 floods.

**Analysis:** The 2011 Missouri River floods presented unique challenges for SEOC planners, due to their duration, intensity, and the limited experience with flooding in that area. The formation of joint planning groups early in the flood response focused planning on priority issues. The benefits of the groups indicate the importance of institutionalizing them within SEOC processes and procedures. This may include guidelines for how the planning groups update all SEOC partners of their activities, which is essential for all SEOC partners to maintain situational awareness. This will be especially important



during future incidents of an equal or greater intensity but shorter duration than the 2011 floods.

**Recommendation:**

1. HSEMD should develop SOPs that address such issues as when joint planning groups will be activated in responses, how the planning groups coordinate with each other, and procedures for informing the entire SEOC of their activities.

**Observation 2.14: Strength:** The critical infrastructure planning group enabled the SEOC to develop a coordinated approach to protecting infrastructure threatened by the floods.

**Analysis:** During the 2008 summer storms, the SEOC planning section did not have sufficient information about the risks to critical infrastructure. Shortly after the 2011 floods began, the SEOC planning section developed the critical infrastructure planning group. The group discussed the risk assessment, protection, and potential response activities that would need to be taken during the incident. The group also examined the interdependent impacts across the energy, telecommunications, transportation, and water utility sectors. The information sharing within the group reassured critical infrastructure providers that other sectors were aware of and addressing these interdependent impacts. The group provided a collaborative environment for regulators and infrastructure providers. It also helped avoid duplication in protection measures undertaken by the various entities that have relevant responsibilities. Through these activities, the critical infrastructure planning group made invaluable contributions during the 2011 floods. Given this success, HSEMD and its partners should continue to refine the critical infrastructure planning group.

**Recommendation:**

1. HSEMD, SIP, critical infrastructure providers, and other SEOC partners should identify and implement enhancements to the critical infrastructure planning group. This should include processes that have been validated in exercises.

## Logistics

**Observation 2.15: Strength:** The SEOC's WebEOC resource management tool provided critical visibility of deployed resources and facilitated the return of recoverable resources.

**Analysis:** During the 2008 summer storms and floods, SEOC logistics staff relied on spreadsheets to manage and track resources. The staff encountered challenges tracking and recovering resources after the conclusion of response operations. The 2008 summer storms AAR recommended that HSEMD explore the possibility of using WebEOC for resource management. HSEMD subsequently made the necessary enhancements to the WebEOC mission/task board and resource management tool. These upgrades enabled counties to input resource requests directly to the WebEOC mission/task board during the 2011 flood response. SEOC logistics staff used the resource management tool to deploy resources; the mission/task board also allowed counties to monitor the status of their request. The WebEOC resource management tool gave SEOC staff greater awareness of

the location of deployed resources, which aided in their prompt return after response operations concluded. Finally, HSEMD assigned a staff member early in the response to manage assets and coordinate their tracking; this contributed to the effective management of resources during the flood response.

**Recommendation:**

1. HSEMD should continue to refine the WebEOC resource management tool, as appropriate.

**Observation 2.16: Strength:** Iowa Department of Transportation (IDOT) garages provided a valuable service as staging areas.

**Analysis:** IDOT has 105 garages located in the State's 99 counties. These garages have the personnel, equipment, and control facilities that make them ideal to serve as staging areas during large-scale events. During the 2011 floods, IDOT allowed two of these facilities to be used as staging areas, just as had been done during the 2008 flood response. Using the garages as defined staging areas allowed for the efficient management of resources. For example, they enabled pipeline equipment to be staged in a manner that did not impede road and bridge repair operations near the Highway 175 toll bridge.

There are opportunities to further enhance the use of State facilities as staging areas during large-scale disasters. First, other State agencies, including the Department of Human Services, have similar facilities with the necessary personnel and capabilities which could also serve as staging areas. Second, there are not currently activation triggers or SOPs for the use of State facilities as staging areas. SOPs would be valuable if an agency requires assistance from other agencies to open, manage, or demobilize a staging area. Third, facilities personnel should receive training and checklists to prepare them for staging area operations. Just-in-time training and FEMA staging area training should be considered as options. Fourth, some counties viewed the staging areas as a way to receive State resources that circumvented the formal request process. This indicates the need for additional communications to counties about the processes for requesting and receiving State resources.

**Recommendations:**

1. HSEMD and State agencies should identify all State facilities which possess the personnel and capabilities necessary to serve as staging areas during disasters.
2. HSEMD, IDOT, and other relevant State agencies should develop activation triggers and SOPs for using State facilities as staging areas.
3. HSEMD, IDOT, and other relevant State agencies should develop staging area training and checklists for facilities personnel.
4. HSEMD should provide additional guidance to counties about the processes for requesting and receiving State resources during disasters. These communications should clearly define the role of State staging areas for county officials.

**Observation 2.17: Strength:** SEOC logistics personnel obtained the HESCO barriers necessary to protect critical infrastructure and other areas from flooding.

**Analysis:** In mid-May, 2011, the U.S. Army Corps of Engineers (USACE) Rock Island District contacted HSEMD with a request to borrow its supply of HESCO barriers to address extreme flooding in Louisiana. The manufacturer, HESCO Bastion USA, could not produce the barriers quickly enough to meet demand. After confirming with the NWS that there was no concern about flooding on the Missouri River, HSEMD loaned its barriers to help Louisiana. The USACE agreed to replace HSEMD's supply as soon as HESCO Bastion USA made new product available. When the Missouri River began flooding several weeks later, MidAmerican Energy had an urgent need for HESCO barriers. MidAmerican coordinated with the SEOC which provided a list of local partners that had purchased HESCO barriers. MidAmerican worked with these partners to move the HESCO barriers into place. These actions helped to minimize the impact of the floods on MidAmerican's infrastructure in the impacted area. Further, MidAmerican, sensitive to the ongoing flood threat to Iowa, worked with HESCO Bastion USA to replenish the State's supply of HESCO barriers within a month.



**Figure 4: University of Iowa Staff Load HESCO Barriers on Trucks Destined for Western Iowa**  
(Source: University of Iowa)

**Observation 2.18: Strength:** State agencies and partners improved the management of resources by applying lessons from the 2008 summer storms.

**Analysis:** Early in the flood response, SEOC logistics personnel recognized that it had access to a finite number of pumps available to protect critical facilities. These personnel also realized that it was critical to manage hoses to ensure that no pumps were deployed without hoses. To address this, the SEOC personnel developed a standard pump kit, which included a standard hose length. This helped to ensure that no pumps were deployed without hoses. However, the standard pump kits forced counties to adopt creative solutions when they did not receive the length of hose they requested.

**Observation 2.19: Area for Improvement:** The State does not possess a statewide inventory of shelter resources.

**Analysis:** SEOC partners began planning for shelter operations early in the flood response. Initial projections indicated that the State may need to shelter up to 30,000 displaced residents. Though this demand for shelter did not ultimately arise, SEOC personnel had difficulty identifying the resources to support shelters. They could not locate some shelter resources, such as cots, purchased after the 2008 summer storms. SEOC personnel also encountered difficulty accessing resources necessary for supporting

individuals with disabilities and other access and functional needs should those resources be needed.

**Recommendation:**

1. As lead in the state response plan, the Iowa Department of Human Services, in coordination with the American Red Cross, and other State and county partners should work to develop a statewide inventory of shelter resources.

## Emergency Public Information

**Observation 2.20: *Strength:*** The prompt activation of the State JIC facilitated the timely and prompt dissemination of emergency information to the public.

**Analysis:** State JIC operations began on June 1, 2011, and continued for over four months thereafter. The Governor's Office, with support from HSEMD, developed a plan which enabled State JIC staff to begin disseminating products immediately. State JIC activities included daily media conference calls, daily press release updates, calls with congressional delegation representatives, and responding to media inquiries. State agency public information officers (PIOs) worked with staff in the JIC, which helped to coordinate messaging while facilitating the flow of information among HSEMD and other State response agencies. The State JIC worked with the Iowa Department of Human Services' Disaster Behavioral Health Response Team to ensure that populations with disabilities and other access and functional needs received information about how to obtain assistance during the disaster.

The State JIC encountered challenges engaging local PIOs. This may have been due to the fact that some counties had not identified PIOs prior to the incident. Finally, the long duration of response operations resulted in reduced coverage of the incident by the media. This could be addressed by having videographers accompany local emergency response personnel to record response activities. This would help to inform the public about response activities.

**Recommendations:**

1. HSEMD should continue to provide training and work with counties to ensure they have identified personnel who will serve as their PIO during a disaster.
2. HSEMD and State agency PIOs should evaluate messaging for long duration incidents and develop the appropriate procedures.

**Observation 2.21: *Strength:*** The State JIC instituted several measures that resulted in more efficient and effective internal operations.

**Analysis:** Three new measures contributed to enhanced State JIC operations during the flood response. First, HSEMD assigned a staff member to serve as a mentor for State agency PIOs who did not have prior JIC experience. This allowed the lead PIO to focus on their responsibilities while the State agency PIOs received a thorough orientation from their HSEMD mentors. Second, the State JIC was reconfigured to place a manager at the entrance of the center. This helped to control traffic flow and directed visitors to the

appropriate JIC staff member for assistance. Third, JIC telephones were configured to direct all incoming calls to a central number, allowing the JIC manager to route the calls to the appropriate staffer. This greatly reduced interruptions so that JIC staff could focus on their tasks.

**Observation 2.22: Strength:** State JIC staff used social media to disseminate emergency information to the public.

**Analysis:** State JIC staff began utilizing Facebook and Twitter from the early stages of response operations as well as monitoring HSEMD's and other social media sites. The use of social media helped the JIC keep apprised of information that changed rapidly. Similarly, counties used their Facebook pages to disseminate emergency information to the public, which also enhanced the State JIC's situational awareness. This represented a major difference in the dissemination of information from the 2008 summer storms and flooding.

## SECTION 3: CONCLUSION

The 2011 Missouri River floods represented unique challenges for HSEMD and its SEOC partner agencies. Most importantly, the incident required that response operations be conducted for four months. This required that HSEMD and its agency partners staff the SEOC for longer than is typical for most incidents. It also required the SEOC to conduct simultaneous response and recovery operations for an extended period. Despite these and other challenges, HSEMD and its SEOC partners collaborated effectively to meet the needs of the impacted counties and their residents.

The effectiveness of SEOC operations during the Missouri River floods reflects the dedication, experience, and commitment of its staff. Further, the HSEMD Administrator and SEOC leadership have established an environment which emphasizes candor, civility, and respect. Together, these factors enabled SEOC staff to implement lessons from prior incidents, including the 2008 summer storms, and other innovations to manage flood operations successfully.

This AAR has identified both strengths and areas for improvement related to SEOC operations during the 2011 floods. It should be noted that many of the AAR's recommendations are designed to further extend valuable initiatives which the SEOC has already implemented. This illustrates the commitment of HSEMD and its SEOC partners to continuous improvement and innovation to meet the needs of the citizens of Iowa.



## APPENDIX A: LESSONS LEARNED

The Department of Homeland Security maintains the *Lessons Learned Information Sharing (LLIS.gov)* system as a means of sharing lessons learned and innovative practices with the emergency management and homeland security communities. The following issues have been identified as candidate Lessons Learned and Practice Notes that should be shared on the *LLIS.gov* system.

### Lessons Learned

- Incident Management: Deploying State Liaison Officers to Localities during Large-Scale Disasters
- Logistics and Resource Management: Using State Facilities as Staging Areas during Disasters

### Practice Notes

- Emergency Operations Center Management: The Iowa Homeland Security and Emergency Management Division's Establishment of a Critical Infrastructure Planning Group
- Joint Information Center Operations: The Iowa Homeland Security and Emergency Management Division's Assignment of Mentors
- State Emergency Operations Center Management: Iowa's Use of Virtual Operations During the 2011 Missouri River Floods

## APPENDIX B: ACRONYMS

<b>Acronym</b>	<b>Meaning</b>
AAR	After Action Report
DNR	Iowa Department of Natural Resources
DPS	Iowa Department of Public Safety
EMAC	Emergency Management Assistance Compact
FEMA	Federal Emergency Management Agency
FOUO	For Official Use Only
HSEMD	Iowa Homeland Security and Emergency Management Division
IDOT	Iowa Department of Transportation
JIC	Joint Information Center
<i>LLIS.gov</i>	<i>Lessons Learned Information Sharing</i>
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
PIO	Public Information Officer
POC	Point of Contact
SEOC	State Emergency Operations Center
SIP	Safeguard Iowa Partnership
SOP	Standard Operating Procedure
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey