



**Ideas for Improving Communications Related to
Preparing for, and Responding to, Floods**

May 24, 2012

One of the issues highlighted by the 2011 Missouri River flood and raised by various MRFTF Work Groups is the need to communicate better about:

- A. The ramifications of living in a floodplain
- B. An impending flood

In 2011, some people were not aware and were consequently not prepared for flooding. Given the expertise and interest assembled on MRFTF, we conducted an MRFTF brainstorming conversation about how to improve communications from all sources that provide flood-related information. At our final MRFTF meeting, we discussed this subject and learned from each other about ways to improve communications related to preparing for, and responding to, floods.

To prepare for this agenda topic in advance of the meeting, we asked MRFTF to respond to the following questions via email:

1. Where do you get your flood-preparedness information from?
2. Who do you trust to provide that information?
3. How can the sources of flood-related information communicate with those who live in the floodplain more effectively?
4. What media sources would you rely upon for flood preparedness information (TV, radio, newspaper, Facebook, website)?
5. Is there another source from which you would like to receive flood-related information?

This document is a compilation of MRFTF participant and Working Group ideas collected both via email and at the final MRFTF meeting.



1. Where do you get your flood-preparedness information from?

- Community Rating System (CRS), which reduces flood insurance premiums for policy holders when communities strive to reduce their flood risks.
- FEMA national level reports, local (to each power plant) weather information sources, the National Weather Service offices, USACE and NOAA.
- Corps of Engineers "Current Conditions" website
<http://www.nwd-mr.usace.army.mil/rcc/current.html>
It has the Daily River Bulletin and the Previous MRR Daily River Bulletins. It also had the DCP ID hourly data for Glasgow and the upper basin cities such as St. Joseph and Nebraska City.
- Websites maintained by the STL and KC district USACE offices, National Weather Service data.
- MoDNR, MO-ARC, MLDDA, special press releases and briefings from Agencies.
- Iowa Homeland Security and Emergency Management provides preparedness information for all hazards through the preparedness website, www.beready.iowa.gov
- ND State Water Commission (SWC), Department of Health and ND WARN.
- Tom Waters, Missouri Levee & Drainage has a fantastic e-mail grouping and twitter following.
- NEMA, ASFPM and local floodplain administrator and emergency management director.
- North Dakota District Emergency Management Office.
- FEMA products establishing the statutory 1% and .02% flood zones; flood maps
- Emergency radio and local television
- Red Cross, Iowa Homeland Security and Emergency Management
- Kansas Emergency Management announcements
- Civil Air Patrol
- The realtor and home insurance company
- Iowa Mesonet can be used to verify information obtained from the NWS and IFIS sites.
- Leavenworth obtains flood information from the collective experience of the employees at the city dating back over 32 years. This involves a basic understanding of the river and dam system,



impacts of the weather, resources such as on-line stage gages and communications with the County Emergency Management Office. Recent years have seen the addition of social media from key participants, and availability to listen to the conference calls as MP3 files. Available and Accurate Weather forecasts and River Stage Forecasts are the heart of our flood effort.

- Local Emergency Managers, Law Enforcement, Fire Departments, Public Works Levee Districts, River Commissions & Dam owners
- Voluntary Non-Profits: ESF 6 participants such as the ARC, Salvation Army, AmeriCorps, etc.
- Faith Based Non-Profits: Southern Baptists, United Methodists, Catholic Relief Services, Seventh Day Adventists, Jewish Coalition for Disaster Relief, etc.
- Private Sector participants in our Business Emergency Operations Center (BEOC) (Individual businesses and trade associations of the 18 CIKR Sectors & Commerce's Super Sectors)
- Association of State Floodplain Managers (ASFPM)
- Academia
- Individual Citizens
- USGS Stream gauge info
- IA Flood center
- Public awareness campaigns conducted each year: Flood Awareness Month in March, Severe Weather Awareness Week in April, Family preparedness Month in September and Winter Weather Awareness Day in November.



2. Who do you trust to provide flood-preparedness information?

- FEMA, NOAA National Weather Service, USGS, COE, DNR, MO-ARC, other Federal Agencies.
- Agencies with a preparedness mission, such as HSEMD, local emergency management.
- State Agencies- Department of Natural Resources and State Emergency Management Agency
- ASFPM and local floodplain administrator and emergency management director.
- Federal and State agencies working in the area, as well as county personnel for “boots on the ground” perspective.
- Not sure I really trust anyone, but of those listed above, the home insurance company the most.
- The Corps, primarily. On occasion you hear other stuff, but the Corps is the source authority, and while (in hindsight) they may not always be right, they have the most data and are, at least in my experience, more reliable.
- Leavenworth has relied upon the Emergency Management Office to pass on the most current and accurate information received from other sources in a timely and uncluttered manner.
- Kansas DEM has been a reliable resource – but they are generally involved during/after the event rather than before. The most reliable local focus information seems to come from – (not surprisingly) the local Emergency Management Agency.



3. How can the sources of flood-related information communicate with those who live in the floodplain more effectively?

- The information sources available typically serve several different audiences (e.g., emergency management professionals, community officials, general public, etc.). Many of those information sources provide data (e.g., gage heights) without much in the way of interpretation or definition of consequences and necessary actions.

Unless they have already been damaged or threatened by a flood event, most people who own property or live in a flood plain are reluctant to recognize that they are at risk to damage by flood. Because of this, it is difficult for them to associate extreme weather conditions and flood forecasts with a potential danger to them and their property until it is often too late. So, perhaps the starting point for relating flood warning information is to better quantify the risk as it applies to each community in terms that those affected can understand.

As an example, the Iowa Flood Center has created stage inundation map products for several communities. These products delineate the area that would be inundated for different river stages, thereby better defining the consequences and risk associated with a forecasted flood stage. However, because these products are tied to NWS forecast sites (i.e., where stream gages exist), it would be difficult to extend them beyond a handful of communities.

- Long-range planning and other long lead information can best be handled through conference calls and/or email for the City of Leavenworth. The social media scene is more suited to short time frame events.
- Web sites have served as effective resources, provided they are updated and maintained current. We also tend to prefer direct communication with our information resources. Typically in the preparation stages to a predictable event (such as hurricanes or flooding), we will schedule conference calls engaging all interested stakeholders with the information providers so that everyone hears the same information collectively and we all have the benefit of hearing each other's questions and concerns.
- Recommend using the NRT JIC Model for conducting public information operations during emergency flood operations when multiple organizations need to collaborate to provide timely, useful and accurate information to the public and other stakeholders. The primary focus of the model is to provide the PIO with a JIC structure that works within the framework of the National Incident Management System (NIMS) ICS. Because it is functionally based, the model can be used during any situation in which there is a need for centralized communications support involving multiple organizations.
- Maybe a reverse 911 system so USACE can push out emergency information to folks via phone



- Through local partners
- Make information easy to understand and accessible, moving beyond traditional sources such as television and radio to include the use of social media. Perhaps direct outreach to people living in floodplains is needed.
- Conference calls and twitter updates are both valuable.
- People in the floodplain need to be reminded, on a regular basis, that they are at risk. The most trusted communication would come directly from the local community.
- Through informational meetings (Town Halls) periodically. Informational meetings need to occur to inform people of their risks and discuss their options to reduce their risks.
- The SWC website, ND WARN website would be good means of communications.
- Predictive mapping such as inundation maps are significantly more valuable than static risk-based maps. Releasing source data or even limited SHP files would be very valuable.
- Use local media (newspapers, radio), release information agencies with local office presence (USDA Farm Service, NRCS), Ag Media (such as DTN, Wallace's Farmer, and other rural publications).
- Through the use of timely, accurate information.
- During the flood of 2011, we found it difficult to reach lower income and elderly households. It was somewhat supersizing the number of households that are not connected to traditional or new media sources. As a result, we had volunteers go door to door. Another method that communities should consider is developing a list of churches, community organizations, schools, and other institutions to notify in the hope they inform others through written means or word of mouth.
- Storm radio emergency announcements, TV and regular radio announcements, direct mailings, face-to-face contacts, community flood preparedness meetings, phone alerts, etc.
- There actually is a great deal of information available already for those who live in the floodplain, if they use it. Technology exists to develop inundation mapping that could be helpful to convince floodplain residents to buy flood insurance, and/or participate in a flood buyout. The same tool could be helpful in planning for future flood fights, analyze flood risks and evacuation priorities, determine which structures should be protected by sandbag or other types of flood fight temporary protective barriers/walls, facilitate transportation systems flood fight needs, etc.
- Let people know the wealth of information available on the internet. They are the taxpayer and



pay for it. This may improve funding for these agencies once people understand the value of information.

- Timely information prior to the release of the water from Gavin's Point from the Corp to the NWS office. That information is distributed through a central point of distribution to the EM's along the river. The logical Central point of information flow would be the Kansas Division of Emergency Management and then they can push the information out to the Counties. We as EM's can then push the information out to the river interested parties of our jurisdictions. Also the information can be posted on NWS web site.
- Calling tree, e-mail, regular mail
- A Regional Website along with various other tools of communications (traditional and social) i.e. <http://www.usbr.gov/gp/flood/>
- Best tools are a news release coordinated with traditional TV/Radio systems and follow-up emails with a link to the info. At this point in time – yes – Facebook/twitter should be included in the notification methods. And YES – seeing the news release on an official web page or from an official email is more meaningful than seeing someone on TV reading it.
- Every April MRFTF co-chairs come together again with a message that this is the 2011 Flood anniversary and people should pay attention
- Messages need to be taken to the tribes, to their meetings, in person. When tribes were reaching out for help this year, they weren't getting the answer they needed. We need to know what other Feds do to get them the right answers. Tribes don't do Facebook, twitter; Press Releases don't reach them.
- Flooding needs an Icon like Smoky the Bear – "Randy the River Rat"
- Ideas relating to the Message:
 - Build effective communication in small positive steps for long-term solutions
 - Promote awareness that all levees will eventually fail
 - Take advantage of May as flood prevention month to increase awareness
 - Get and keep their attention by delivering consistent, timely and accurate messages
 - Utilize 1% data as opposed to 100/50 yr risk to deliver message
 - Incorporate climate patterns, wet cycle in message
 - Translate the data to impacts on a real-time basis.
 - Articulate range of risk and determine if it is projected to be catastrophic or something less.
 - Be sure to target communications to those who live or operate in a flood plain.



- Make the message proactive rather than reactive
- Educate the potentially impacted areas on flood awareness, how to prepare for, and mitigate the impact of flooding
- Find the way to make them care!
- Tell it local and tell it often
- Address personal responsibility
- Start to focus on the younger kids. Kids will learn and share what they learned to develop a future of prepared members of the community.
- Focus needs to be “talk to the experts” and “YOU have a responsibility”
- Messages should be: Who is the expert; Everyone has a role; Don’t wait till the last minute, think ahead
- All players should say “get your advice from the experts”: FEMA.GOV
- Unified message of state and federal agencies. Messaging kits already exist, such as FEMA’s *Ready Campaign*. Tailor the Ready message to possible outreach strategies for 2012-2013



4. What media sources would you rely upon for flood preparedness information (TV, radio, newspaper, Facebook, website)?

- Website. Mass media doesn't usually get it right. I'm not Facebook literate. So the web (direct communication) works best for me.
- Well, I'm old fashioned, so wouldn't use Facebook. The approach would best be determined based on someone in public affairs who knows how to identify audiences and determine outreach methodologies.
- From our perspective where we provide up to date information to our field offices for dissemination to the Ag Sector, we request phone, email and/or website as our sources. We would prefer that changes in status be issued to the high level points of contacts by phone or email where we could then check the website for the details of the change.
- TV and Radio spots, weather radios, alerts on your I-phone or email
- Newspaper, FEMA and NWS websites, TV and Radio ads
- In order, local newspaper, website, Facebook, and TV. I have found local radio difficult as a media source.
- TV, Radio, Newspaper, and the internet. Radio was key last year as you could listen for updates while you were outside building sandbag walls and other flood protection.
- Agriculture Media (DTN, Wallace's Farmer), ACOE web-site, Facebook, emails, USDA State Emergency Boards, state emergency info.
- Clearly laid out and organized websites have the ability to provide a wealth of information. The problem is directing people to the right starting point. A coordinated effort with traditional media pointing to non-traditional media would be most effective.
- Most likely all of the above in a time of crisis. However, meetings between Corps officials and city and county officials for the purpose of preparing flood preparedness plans and mutually determining what each needs during a time of crisis would be beneficial.



5. Is there another source from which you would like to receive flood-related information?

- Most people and agencies probably use multiple sources of information: weather service, USGS, disaster response officials, local city and county officials, Corps of Engineers and others providing parts of the overall landscape of flood preparedness, flood forecasting, flood impacts, flood recovery, etc. The issue is coordination of that information before, during, and after a major flood. Of course, an overall review of the completeness of the landscape is important as well. The new flood level forecasting on the NWS web site for gaging stations on the USGS gages below Fort Peck was very useful. Additional information of the impacts associated with each increased level of flood would be helpful. New cross-sections showing inundation areas and flow-stage relationships are necessary now so that flood recovery efforts can consider potential, future high flow events as well as routine system operations under post-flood river conditions.
- Assuming that you can get them to recognize they are susceptible to risk of damage by flood, people might subscribe to a form of social media that provided customized (i.e., by county and/or NWS forecast station) flood preparedness information. Beyond that, an internet based platform that provided aggregate information collected from the various flood and weather information sources might be convenient and useful to both individuals and the media.
- Better coordination with agency PIO's would help. Consider an annual conference or workshop to discuss effective communication in a changing world – and make sure the PIO's attend!
- Email notification would work as a backup of our State notification.
- The flood inundation maps should be kept up the date and ready for future emergencies. The largest fear was caused when folks did not know if they would flood or not. Once we got the maps, we could focus efforts and most folks along the river could take action based upon facts instead of speculation. That first week without the maps was just crazy.
- Encourage states to consider requiring insurance companies to provide flood insurance as part of the basic package for homeowners (which would be a reversal of when the states told insurance companies not to include it). States regulate most insurance but not flood insurance.
- The 2011 flooding caused me to become a fan of Twitter. However trying to determine who to follow on Twitter can be a challenge. I have not yet tackled Facebook.
- FEMA and local authorities should be more active in identifying flood-prone areas and informing the landowners of their risks and options to reduce risks.
- Federal sources as appropriate, including NOAA for predictive condition information.



- University Extension, Environmental Protection Agency (EPA) on any actions they may take, State Health agencies.
- Local floodplain management entities (city, county, or state) - possibly through mass mailings to floodplain residents and businesses
- There needs to be some method of alerting homebuilders, developers, and buyers of the risks of building in a floodplain before they build. If there are no restrictions or immediate deterrents to building in the floodplains, people will continue to do so.
- The easiest method would be a simple email group of the various points of contact. This is the fastest method and allows for the quick forwarding of information to our field staff which can put the information out through their emergency network. Since I didn't have access to Social Media because of my Agency's policy, I had to check several websites, multiple times a day to keep up with the flood status changes.
- Require insurance companies to provide an informational piece concerning flood risks (levee failure risk) for any homeowner with a home or buildings in or near the 100 year floodplain regardless if they are behind a levee or not.
- Awareness campaign during March-April for flood risk awareness alongside of other emergency preparedness items.
- Posters hung during March-April awareness campaign, at federal offices located in local areas.
- Development and use of coordinated and consistent messages/information by all federal agencies during potential emergencies (FEMA to coordinate).
- Develop an emergency awareness or eminent emergency communication tree, phone tree, email tree and/or combination of all. Maybe this is developed as a tool for state and local emergency management entities to implement and coordinate.
- If I received a letter from my banker, I'd open it before a letter from FEMA. IRS, banks, should also be considered as information sources.