Risk Communication

Flood Fight Training 2014
Omaha, NE
February 27th, 2014

Tony D Krause PE CFM

Hydraulic Engineer

Omaha District

Slides Prepared: 2/18/2014

US Army Corps of Engineers
BUILDING STRONG®

Overview

- Flood Risk Communication
- Risk Treatments
- NE Silver Jackets Flood Risk Communication Webtool
- **Tools to help communicate with your community**

Risk Communication

Risk communication is the exchange of information about hazards and risks leading to a better understanding of the risks and better risk management decisions.

Risk communication ensures that the decision makers, other stakeholders and affected parties understand and appreciate the process of risk assessment and in so doing can be fully engaged in and responsible for risk management.

Objective:
Build Resiliency through Risk Informed Decisions

What is a Risk Informed Decision?

- Risk Informed Decision =
  Educated decision on how to treat your risk

- There are **4** types of risk treatments (Flood Risk Example) (Agricultural Example)
  - Reduce / Mitigate - (Levees, channels, nonstructural alternatives) (Irrigation)
  - Offset / Transfer – (NFIP, Insurance) (insurance, futures contracts)
  - Accept – (Live with risk)
  - Avoid – (Move out of flood risk)

Why is Clear Communication Necessary?

Even if risk is “known” human judgment and decision making does

NOT ALWAYS FOLLOW LOGIC

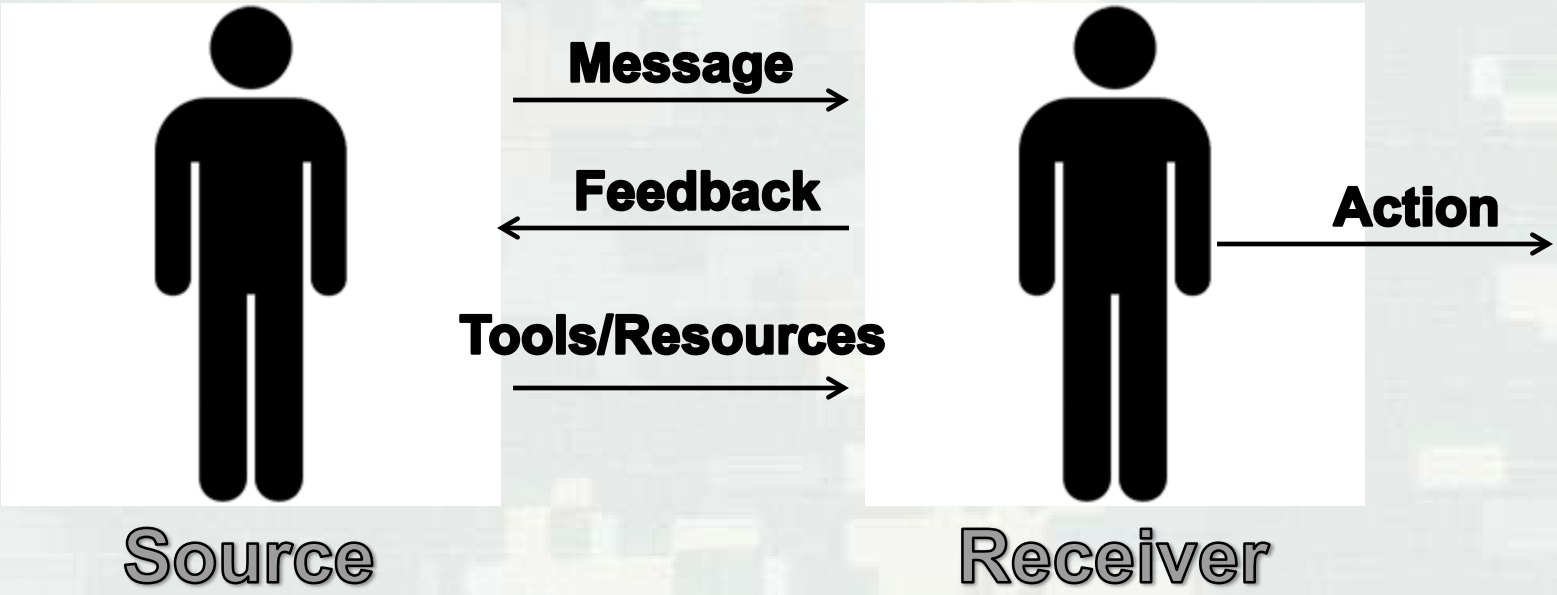
CAUSE : Normalcy Bias

- People underestimate both the possibility and effects when faced with disasters
- Impacts the behavior of people and governments
- Description vs Experience: We are more comfortable making decisions on experience, with low frequency events we often don’t have experience
- Interpret warnings in the most optimistic way possible

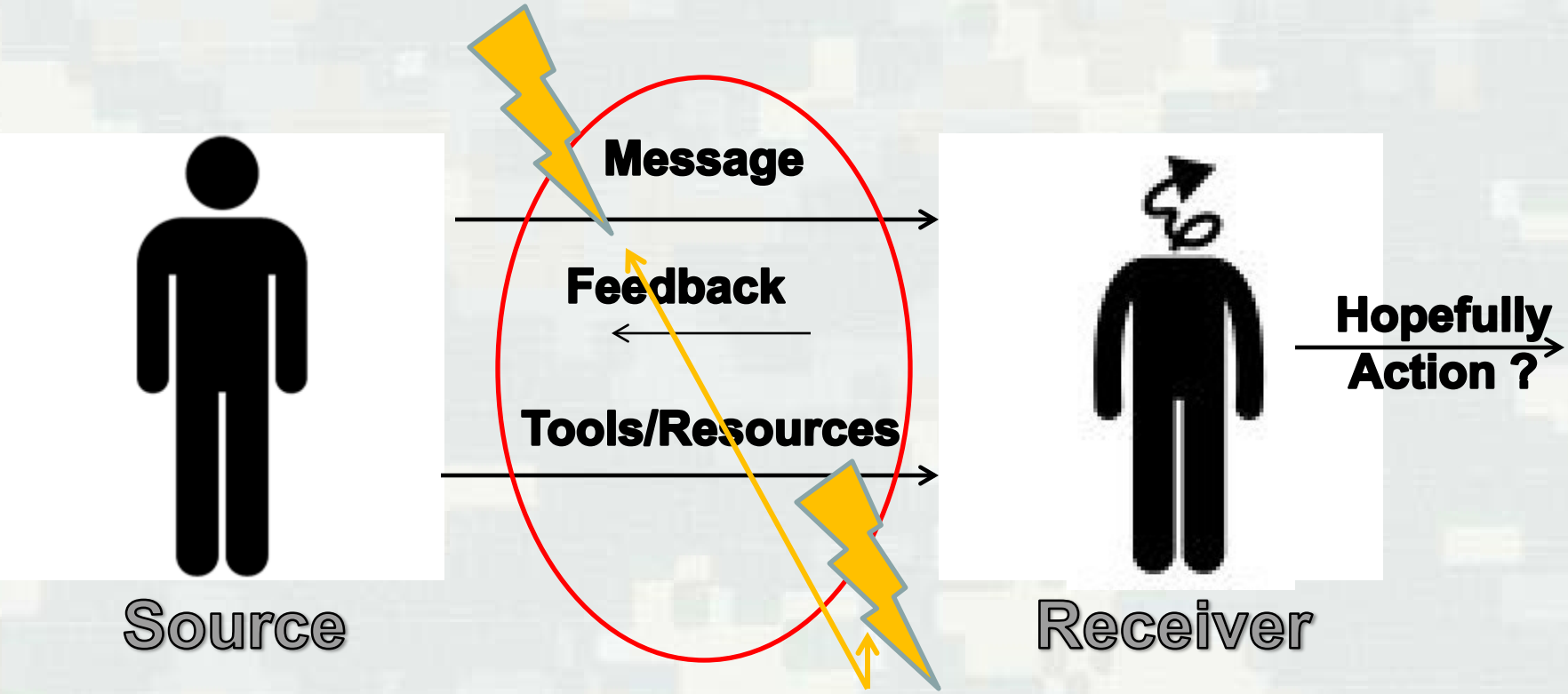
- **Ambiguities causes cognitive dissonance**
- **Cognitive dissonance causes inaction**

- Prospect Theory -Kahneman, Tversky
- Gamblers Fallacy -Greg Barron
- Black Swan -Nassim Nicholas Taleb
- HILF -Gordon Graham
- Tails Event
- SEP – Someone Else's Problem – Douglas Adams

Communication Model (Ideal Case)



Communication Model (with Noise)



Communication Environment

Noise/Distractions (example: YouTube)

Problems with Flood Risk Communication

(No Organized Message/No Defined Objective)

Flood Risk is a Shared Responsibility

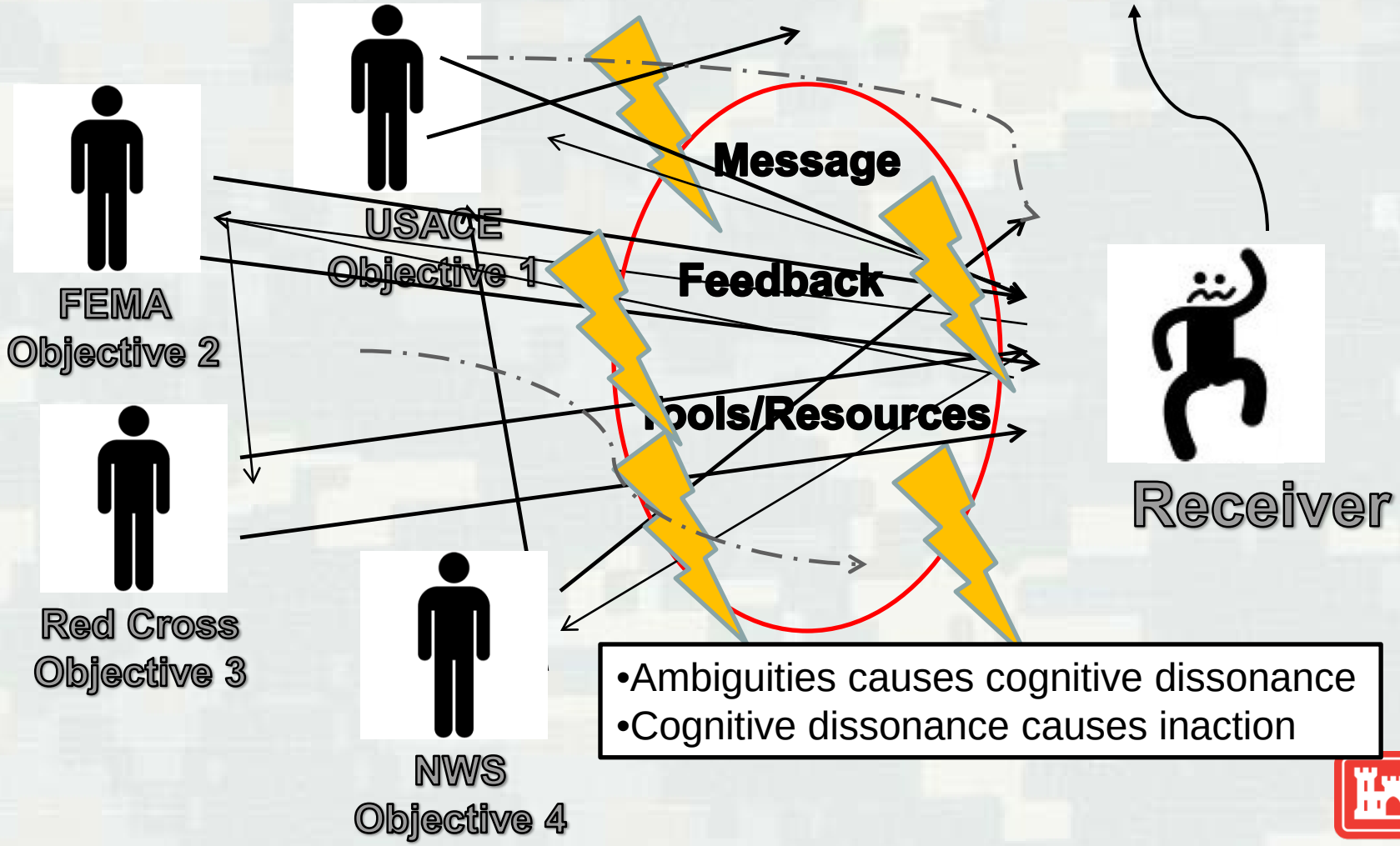
Multiple agencies are involved with Risk Communication

Each agency has communication tailored to their responsibilities and objectives

Each agency is communicating
LOUDLY - AT THE SAME TIME - ALL THE TIME

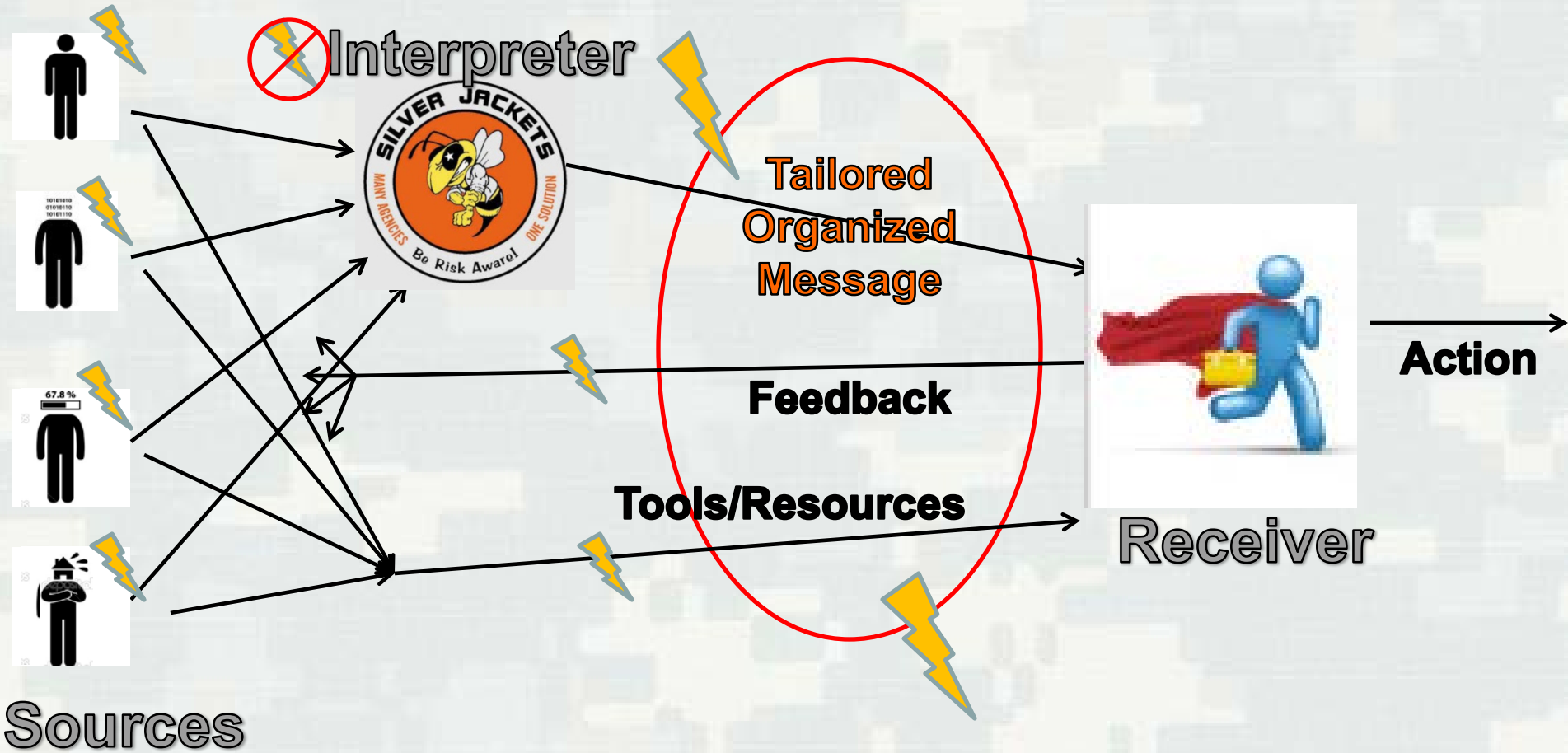
No Organized Message – Multiple Objectives

Problems with Risk Communication
(No Organized Message/No Defined Objective)



- Ambiguities causes cognitive dissonance
- Cognitive dissonance causes inaction

Communication Model
Revised Model



Risk Communication Webtool

http://floods.dnr.ne.gov/

BUILDING STRONG®

Risk Communication Webtool

2 sets of pages
- Flood Risk Readiness – hot to understand and mitigate flood risk
- Flood Response – how to respond to an ongoing emergency

Flood Risk *http://floods.dnr.ne.gov/riskmanagement.html*

Objective: Assist homeowners in making
RISK INFORMED DECISIONS.

-Am I at risk of flooding?
-What type of flooding am I exposed to?

→

-What is the probability?
-What is the consequence?
-How will my current mitigation perform?

→

-How can I mitigate my risk?

Flood Response *http://floods.dnr.ne.gov/flooding.html*

Objective: Assist homeowners in
UNDERSTANDING, RESPONDING to, and **REBUILDING** after a flood.

Before a Flood → During a Flood → After a Flood

BUILDING STRONG®

NEBRASKA
SILVER JACKETS

Many Agencies One Solution

HOME
FLOODPLAIN BASICS
RECOGNIZING RISK
UNDERSTANDING RISK
MITIGATING RISK
USEFUL LINKS
ABOUT US

Recognizing your Risk

The following links are intended to assist in identifying your personal sources of flood risk.

- **NFIP related flood risk**
  The National Flood Insurance Program (NFIP) provides insurance to private property for flood damages. As part of the NFIP data regarding the risk of flooding for different areas has been mapped. The following links provide information pertaining to risk identified by the NFIP. When reviewing these data sources be sure to write down your flood zone designation and Base Flood Elevation (BFE) if available.
  - **Nebraska Interactive Floodplain Maps – NDNR**
    The NDNR tool provides a graphical tool to identify your flood zone
    - http://maps.dnr.ne.gov/Floodplain/default.aspx
  - **Local Floodplain Administrator – NDNR**
    Floodplain management is a requirement of the local government and is supported by state, and federal agencies. The following link can help you identify your local government contact
    - http://dnrdata.dnr.ne.gov/floodplain/ManagementAdministrators.aspx
  - **FEMA Map Service Center – FEMA**
    The official FEMA FIRM map clearing house
    - http://www.msc.fema.gov
- **County Emergency Manager**
  The following link can help you identify your local county emergency management coordinator.
  - http://www.nema.ne.gov/director-lists/directors.html
- **National Weather Service - NWS**
  The National Weater Service (NWS) provides weather forecasts that can help you identify if you are at risk for flooding.
  - How much precipitation is forcasted?
    - http://www.hpc.ncep.noaa.gov/qpf2.shtml
  - What is the threat of excessive rainfall?
    - http://www.hpc.ncep.noaa.gov/qpf/excess_rain.shtml
- **State of Nebraska Hazard Mitigation Plan - NEMA**
  This document identifies recognized hazards of many types throughout Nebraska; specifically Section 3 of the document can be used to identify your hazard types.
  - http://www.nema.ne.gov/pdf/hazmitplan.pdf
  - http://www.nema.ne.gov/response-recovery/hazard-mitigation-plan.html
- **National Levee Database (NLD) – USACE**
  The NLD is a database of levees which were constructed by USACE or are involved in the USACE PL 84-99 program (not all levees are presented in this database).
  - http://nld.usace.army.mil/egis/f?p=471:1:
- **Nebraska Dam Safety Program – NDNR**
  The Nebraska Dam Safety Program provides information on dam safety in Nebraska
  - http://dnr.ne.gov/docs/damsafety.html
  - http://maps.dnr.ne.gov/Dam_Inventory/default.aspx

- Defined Objective
  - Clearly State the Objective / Purpose
- Organized Message
  - Categorize Information
  - Sign Posting

BUILDING STRONG®

HOME
BEFORE A FLOOD
DURING A FLOOD
AFTER A FLOOD
USEFUL LINKS
ABOUT US

During a Flood

Monitoring a threat

Beyond the local news, and public broadcast system, the following links provide current information on flooding.

- **Real-time streamflow and flood conditions**
  - http://waterwatch.usgs.gov/?m=real&r=ne
  - http://waterwatch.usgs.gov/?m=flood&r=ne&w=map
- **Current river readings and forecasts for Nebraska**
  - http://water.weather.gov/ahps/region.php?state=ne
- **Nebraska Radar View**
  - http://weather.gov/Conus/uppermissvly.php
- **Complete listing of current weather alerts for Nebraska**
  - http://weather.gov/cap/ne.php?x=1
- **Current weather warnings for Nebraska**
  - http://www.weather.gov
- **7-day hourly forecast - NOAA**
  - Omaha
  - Lincoln
  - Norfolk
  - Grand Island
  - Kearney
  - North Platte
  - Scottsbluff
  - For other cities, click here and enter your zip code.

Safety During a Flood Event

The following links provides tips on how to remain safe during a flood event.

- **General Tips – Louisiana HSEP**
  - http://gohsep.la.gov/factsheets/floodsaf.htm
- **Electrical Safety**
  - http://www.mpsutility.com/index.php/mps-electrical-operations/103-electrical-safety-during-a-flood
  - http://publications.usa.gov/epublications/safety/precautions.htm
- **Basement Collapse**
  During a flood hydrostatic forces can build up on basement foundations walls. This can cause a basement to collapse.
  - http://www.fema.gov/news-release/1999/08/07/use-caution-pumping-your-flooded-basement
  - http://www.nd.gov/des/uploads%5Cresources%5C328%5C floodingexcess-rainand-basements.pdf
- **Preparing for an Evacuation**
  - http://www.deq.state.ne.us/gen.nsf/pages/disaster-1
- **Find Shelter**
  - http://app.redcross.org/nss-app/
  - http://www.fema.gov/how-do-i-find-place-stay
- **Road Closures**
  - http://www.511.nebraska.gov/atis/html/index.html
- **Driving Through Water**
  - http://www.floodsafety.noaa.gov/tadd.shtml

- Appropriate Information at the Appropriate Time

Sections are setup for
- Risk mitigation – outside of ongoing event
- Preparing for a eminent threat
- During a flood
- Recovering after a flood