



The BUZZ

A Quarterly Newsletter

April 2013

The BUZZ is a forum for Silver Jackets' team successes, opportunities and resources.

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Announcing the 2013 Flood Risk Management - Silver Jackets Webinar Week: Efficient, Effective, Connected

By Lisa Bourget, USACE IWR

The U.S. Army Corps of Engineers (USACE) Flood Risk Management and Silver Jackets Programs will conduct a series of webinars August 20-22, 2013, to share information and experiences among those actively managing flood risk.

Abstracts and suggestions for program development are due April 30, 2013 (see [Call for Topics](#)).

The webinars will focus on integrating and leveraging efforts to reduce flood risk. Our nation is confronted with numerous challenges in managing flood risks to public safety and economic enterprise.

While the USACE has a key role in managing flood risks, no single federal or non-federal entity is solely responsible.

Rather, multiple federal, state, local and tribal agencies, as well as private citizens play a role in flood risk management.

The series of webinars will provide an opportunity for flood risk management professionals to share their knowledge and experiences with the goal of promoting mutual efforts that are efficient, effective, and connected.

The 2013 “[Webinar Week](#)” will help maintain information exchange, relationships, and momentum between face-to-face biennial Flood Risk Management and Silver Jackets Workshops, the next of which

is expected to occur in 2014.

Send in your suggestions and abstracts, mark your calendars for August 20-22, and stay tuned for more information!



Wide-spread coordination and collaboration are essential to achieve state-wide goals of reducing risk, saving lives, and protecting property.

Spotlight: Colorado Commits to Multi-Hazard Silver Jackets Team Approach

By Thomas Gorman, USACE Omaha District

Colorado is where the mountains meet the sky, the snow cover turns to snow water, and flood risk management is in bloom.

Over the past year, several federal and state agencies came together to discuss the need and desire to establish a Silver Jackets program focused on tackling the risks Colorado faces. Agency representatives discussed not only risks as a result of flooding, but also dangers and risks posed by droughts and fires.

The pre-charter discussions, arranged by Tom Browning of the Colorado Water Conservation Board, provided a reminder to those in attendance that wide-spread coordination and collaboration are essential to achieve the state-wide goals of reducing risk, saving lives, and protecting property.

While the Continental Divide provides a split between east slope and west slope water flow in Colorado, there was no divide among the participants in their eagerness to establish this first-ever program for federal and non-federal participation.

The State of Colorado is located within the area of responsibility for four U.S. Army Corps of Engineers (USACE)



Districts and two Division offices.

If it accomplishes anything, the Silver Jackets program should result in alignment of the activities taking place within these District and Division offices so as not to burden the state officials with overlap and redundancy.

Periodic meetings scheduled among the charter members are expected to bring forth a level of uniformity regarding application of programs and resources.

On March 14th, the Silver Jackets Team Charter for the State of Colorado became official. The charter became effective through a round-robin signature process by the six core agencies.

The signatory state and federal agencies include the following:

- Colorado Water Conservation Board (CWCB)
- Colorado Office of Emergency Management
- Federal Emergency Management Agency, Region VIII
- U.S. Army Corps of Engineers, Albuquerque District
- U.S. Army Corps of Engineers, Omaha District
- U.S. Army Corps of Engineers, Sacramento District

The CWCB is the lead state agency and the Omaha District is the lead Corps District for the Team. The USACE Kansas City District is a non-signatory participant. The charter implements a multi-agency Risk Management Team for the state to address flood and other natural hazard risk reduction.

Flood risk management may sometimes be overlooked because of the semi-arid climate in Colorado. However, the potential for devastating floods exists, as evident with the 1976 Big Thompson River flood, which resulted in the loss of 143 lives.

The first Silver Jackets meeting is planned for this spring in Denver.

Current River Conditions Available Nationwide from USGS

By Gary Fisher, P.E., Office of Water Information,
U.S. Geological Survey

Current river-stage, streamflow, and lake-level data from USGS have been available to all on the web since 1995. Before that, it was available to a few agencies using direct satellite or telephone links.

We've come a long way over the years, considering that available real-time stations have grown from about 1,500 in 1985 to 4,000 in 1995, and then to 9,800 in 2013. Most water-resources professionals are familiar with current conditions and other data products available at [USGS Water Data for the Nation](#), but may not be aware of some additional tools that help users access or interpret data.

[USGS WaterWatch](#) began very modestly to help track day-to-day water conditions during the widespread drought of 1999. It has since grown to include many aspects of current and long-term water conditions, including flooding, drought, streamflow statistics, shift-adjusted rating curves, and summaries of conditions over time. It uses a "dashboard" design to display information for quick visual assimilation, and provides many useful graphical and tabular data summaries and time-lapse animations.

[USGS WaterAlert](#) was launched in 2010 to provide frequent users of current data with an email or text-message notification when conditions cross a threshold that they set, such as when river stage goes above a particular level. Its flexible design allows for any up-or-down threshold of interest and supports multiple data parameters. It provides a map to locate sites of interest; a subscription form to customize user preferences; and, where available, information to help select thresholds, such as a link to National Weather Service flood stages. As of February 2013, there were 44,600 WaterAlert site-parameter-threshold subscriptions from 33,000 users.

[USGS WaterNow](#) was released in February 2013 to provide users with a readily available and fast tool to obtain up-to-date data. The service works on any device that supports email or text messaging, either online or mobile. For a streamflow site, send an email or text to WaterNow@usgs.gov with a USGS station number in the subject line or body, and within a few minutes you'll receive a response with the most recent values of stage and streamflow.

[USGS Water Services](#) are the backbone of all major USGS water-data products. Although they are not explicitly a tool for direct "human readable" data queries,

they are worth mentioning because they are also available to anyone to retrieve data for use in their own applications.

There are other USGS water information products in production or in development that will continue to enhance the availability of national data for water-resources decision making. [StreamStats](#) provides estimates of natural-flow streamflow statistics at any location, and is currently available or in development for 40 states. The [USGS Flood Inundation Mapper](#) shows areas of expected inundation at multiple flood levels, and is currently available for 25 locations in the eastern United States.

On the horizon for 2014, frequently accessed data from [USGS Water Data for the Nation](#) will be available in a mobile-friendly version, including an easy-to-use map browser and auto-locator. States and federal agencies as well as Silver Jackets teams nationwide may find it beneficial to utilize any of these sites within their websites. For example, the Flood Inundation Mapper is a multi-agency, coordinated product that could easily add value to various flood risk management websites. Information on these and other products is available at water.usgs.gov.



**USGS
tools
available
in
new
formats.**

Data and Data Usage: a Pitch for Silver Jackets Support

Do you know how the data you depend on is made available?

By Arlan R. Juhl, P.E., Director, Illinois Office of Water Resources

The information age provides all of us the opportunity to gather incredible volumes of data for technical purposes, and our appetite for this data never diminishes.

When daily forecasts were first provided, we wanted more, so now we have hourly forecasts.

Daily stage data became the norm, but now readings are available every fifteen minutes. Access to this information is nearly instantaneous via the Internet and through telecommunications' portals.

The Flood of 2011 and the Drought of 2012 have demonstrated the value of data and information.

The Corps of Engineers struggled with the operational issues of the Mississippi River during the flood, but had access to the best available information from which they were able to make decisions.

Weather and river stage forecasts were available to Corps staff that would then analyze and feed results to the decision makers.

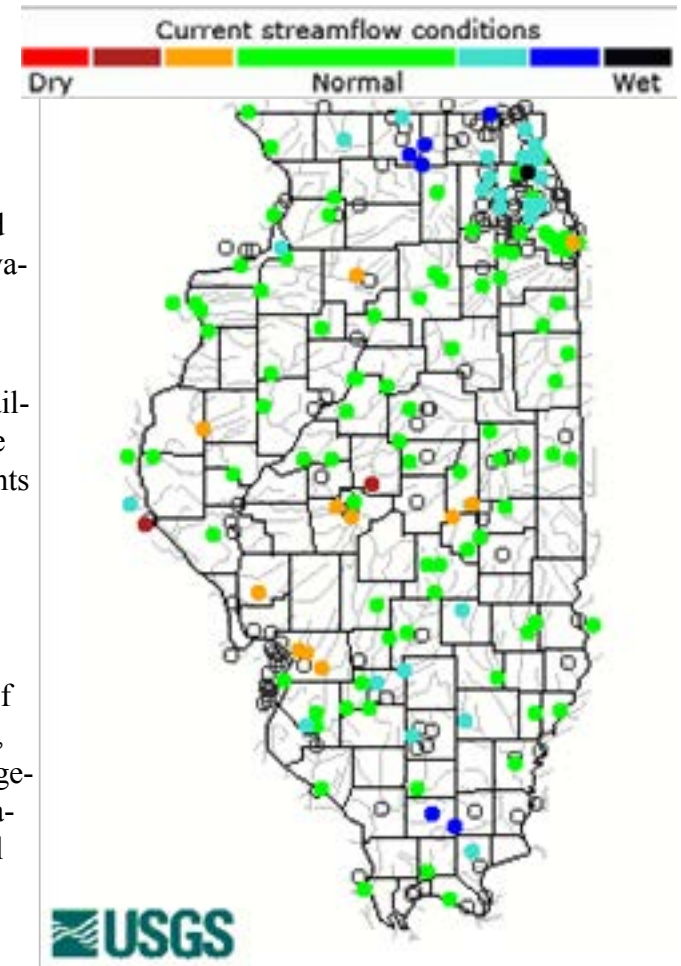
Similarly, drought conditions made all of us aware of the need for data, both for weather forecasting and tracking river and groundwater levels.

Do you know how the data you depend on is made available? Are you aware of the impacts of budget constraints on the availability of data?

The Silver Jackets teams should maintain an awareness of the data collection networks and the sources of support for those networks, as well as provide encouragement to keep those information sources available to all of us.

Government, industry, municipal, and private users of data have grown dependent on data to the extent that the expectation is we will obtain any and all data needed for our useful purposes.

The presumption is that data collection will always take place, and that data will



be as freely accessible as everyone wants.

Consider the data sources you presently use and your dependence on those sources. There are many

sources, and those sources often provide similar data.

For example, river stage forecasts are often provided by the National Weather Service and displayed on the website of others, as well as their own.

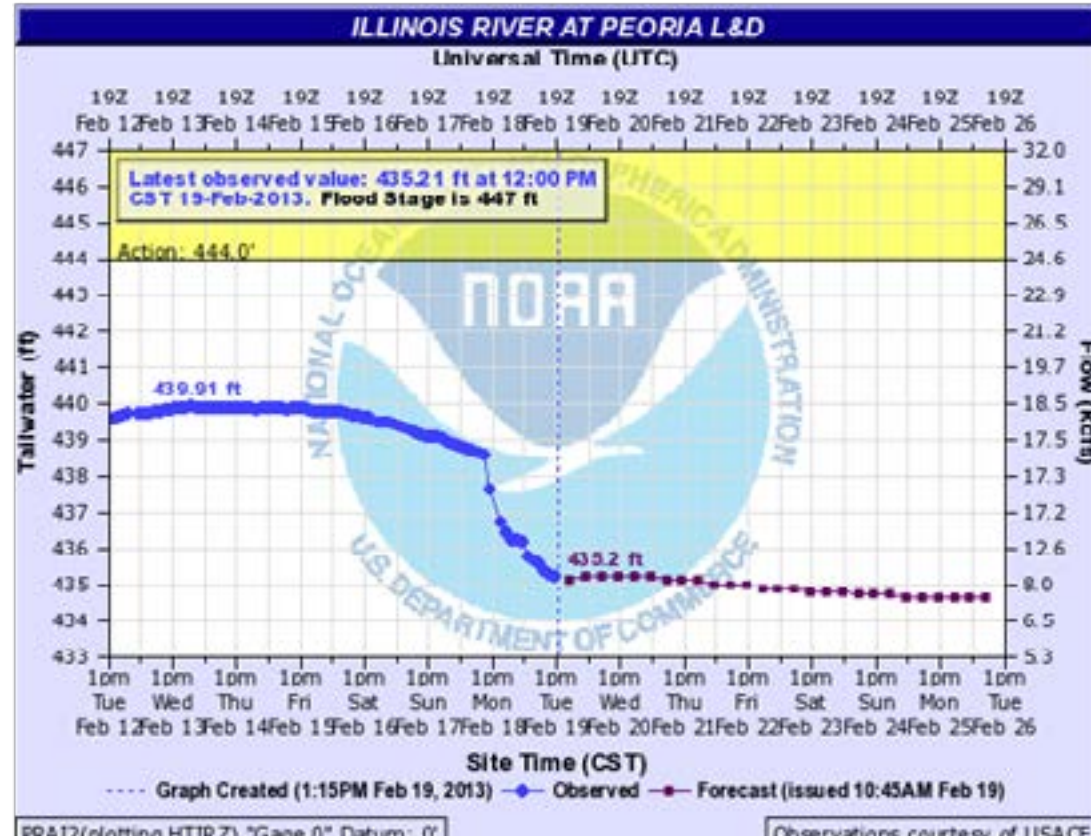
U. S. Geological Survey river stage and discharge information are displayed on their websites and redisplayed on many other sites as well.

Here at the Illinois Department of Natural Resources, we pore over all of the available information and merge the data with information from local observers to provide the best advice to emergency managers and decision makers.

How dependent we have become on the services of others to perform duties that others now depend upon us to continue to perform.

Silver Jackets teams would be well served to fully understand the sources and reliability of data needed to perform the duties of all entities that depend on data for management of water and related infrastructure.

There is a long history in Illinois of



Screenshot of National Oceanic and Atmospheric Administration (NOAA) flood data graph.

annual stream gage cooperator meetings where all who support data collection can share resources and discuss their needs in order to help align data collection with data dependent uses.

Data collection for stream stages

supports river stage forecasts, and real time precipitation data and forecasts provide significant information for river stage forecasting. You want it, I want it, and we are dependent upon others to provide all that we want.

Silver Jackets teams should be aware of their data collection networks and the sources of support for those networks.

Developing a HWMs plan is a good SJ collaboration project since multiple agencies can get involved in all stages.

In Pursuit of a High Water Marks Strike Team in Florida

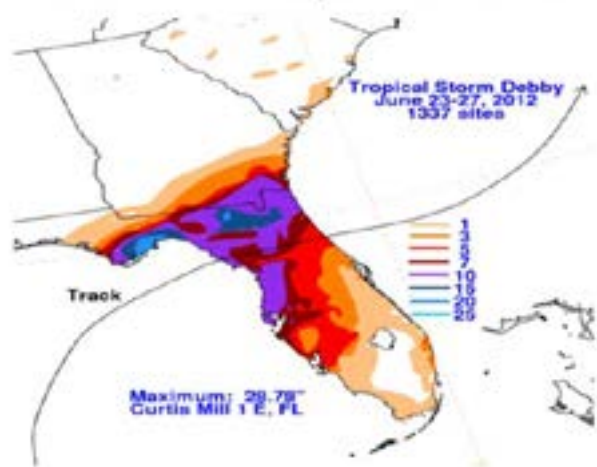
By Bill McCusker, Florida Division of Emergency Management

Florida's Silver Jackets team has been looking for ways to bring funding and other resources together to combat flooding.

In July 2012, after Tropical Storm Debby, the Silver Jackets (SJ) team responded to the need for recording high water marks (HWMs) by developing a plan that calls for a HWMs Strike Team and a central repository for collection and review.

The plan is expected to reduce costs and redundancies, increase expediciencies, and produce a better product.

Path Of TS Debby 23-27 June 2012



After significant flooding from a hurricane or a major storm event, it is important to collect accurate data rapidly in order to document the event; assist in the response, recovery, and mitigation; and improve disaster preparedness and prevention for future disasters.

HWM data collection is an initial step in accurately documenting an event.

These data help place the event within a historical context, improve estimates of current flood risks, and enable government to make predictions about potential future flooding and pursue mitigation projects.

Collection of site-specific high water data along rivers, lakes, bays, and coasts has numerous applications. Some of these include the following:

- Estimating storm frequency and severity
- Assessing accuracy of the Flood Insurance Rate Maps
- Assisting in the preparation of Wind Water Line Maps
- Repairing inundation maps

- Supporting building performance assessments
- Calibrating storm simulation models
- Preparing benefits/costs analyses for mitigation projects
- Determining the depth of flooding for structures

HWMs are perishable so it is important to quickly capture HWM information before residents cleanup or it rains and HWMs disappear.

Consequently, fieldwork is first required to locate and flag representative HWMs.

Flagging captures information regarding the location and description of the HWM so that it can be surveyed at a later time, even if the markings had been cleaned.

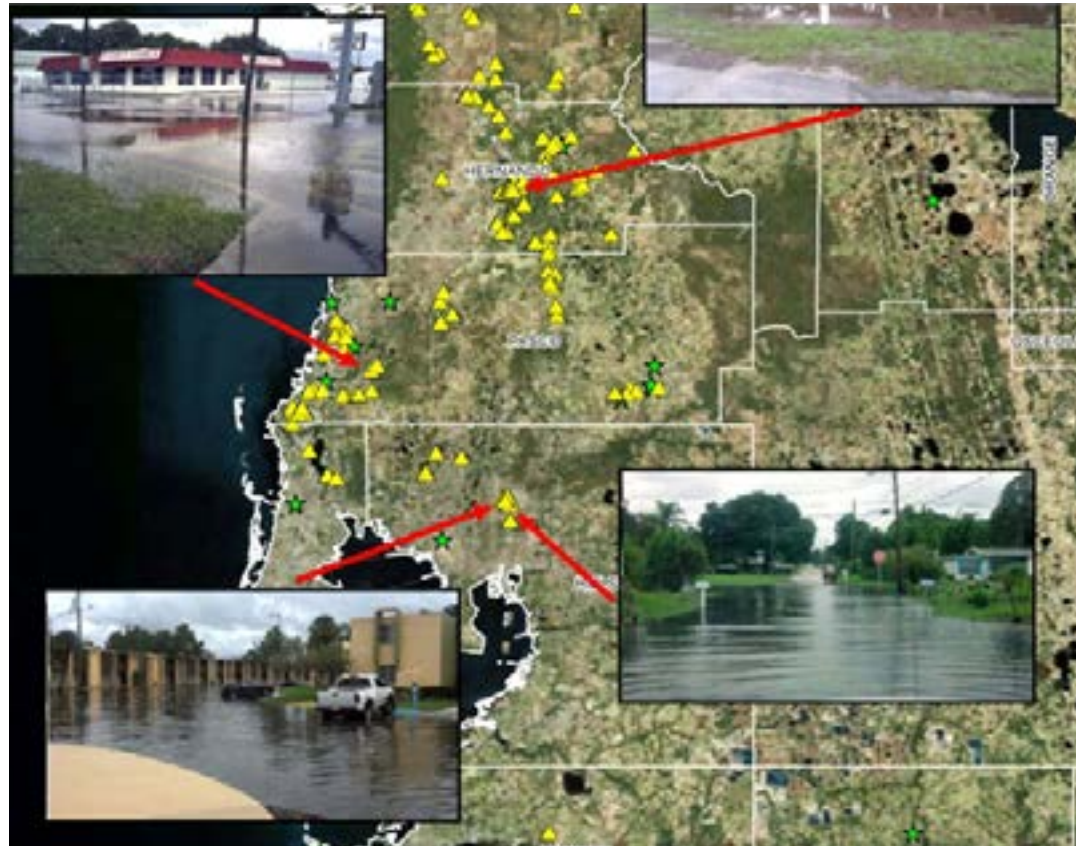
Developing a HWMs plan is a good SJ collaboration project since multiple agencies can get involved in the identification, collection, analyses, storage, and use of the data.

When a major flooding disaster strikes, it is important to have a plan in place to collect HWMs so that each team member's role in the effort is clear.

It is important to have a team prepared for a rapid response so that valuable resources can be expeditiously applied to produce a useful product.

In developing the plan, the SJ team considered many options including the following:

- Orchestrate a one-day workshop or webinar to discuss collecting HWM data using a strike team approach. Participants invited to attend will be the Florida Department of Transportation, National Oceanic and Atmospheric Administration (NOAA), National Weather Service (NWS), USACE, USGS, Watershed Districts, Department of Natural Resources (DNR), and Florida Division of Emergency Management (FDEM).
- Create a mutually acceptable, multi-agency geographic information systems (GIS) storage system for the data.
- Put in place a multi-agency Memorandum of Understanding to collect, process, and post the HWM data to be activated in a post-flood disaster environment.



- Create a pre-scripted mission statement or scope of work to take full advantage of Federal Emergency Management Agency (FEMA) technical assistance disaster funding following a presidential declaration.

In the end, the goal is to have a plan in place for the next major flood event that will ensure consistent data collection

throughout the state of Florida with a reasonable amount of standardization for access and storage.

In advance of an event, there will also be a clear understanding of each agency's data needs, applications, and level of involvement, as well as funding potential for plan implementation.

The goal is to have a plan in place for the next major flood event that will ensure consistent data collection throughout Florida.

Superstorm Sandy Recovery Using the National Disaster Recovery Framework

By Tyrone Brumfield, USACE Headquarters

Sandy has become a major test of the recently developed National Disaster Recovery Framework.

On October 29, 2012, Superstorm Sandy made landfall in the continental United States, causing massive damage to the Atlantic Coast. New Jersey and New York, including New York City, were particularly hard hit. To assist in recovering from this significant event, the Administration has provided nearly \$60 billion in emergency supplemental funds.

Sandy has become a major test of the recently developed [National Disaster Recovery Framework](#) (NDRF), which defines how the federal agencies will organize and function to promote effective recovery in support of states affected by disasters.

Through the NDRF, the entire recovery effort is coordinated by the Federal Disaster Recovery Coordinator (FDRC). Recovery Support Functions (RSFs) are used to support the recovery efforts.

RSFs are sector-based coordination platforms that bring together agencies at all levels of government, the private sector, and nonprofit organizations to collabo-

rate and share information on recovery.

The NDRF identified six RSFs: Community Planning and Capacity Building; Economic; Health and Social Services; Housing; Infrastructure Systems; and Natural and Cultural Resources.

Each RSF has a Coordinating Agency.

The Corps of Engineers is the primary Coordinating Agency for Infrastructure Systems (IS-RSF), but participates on several others as well.

USACE, along with all other primary RSF Coordinating Agencies, has identified a RSF National Coordinator. This National Coordinator oversees pre- and post-disaster activities and operations at the national level.

If deployment is required, the National Coordinator designates a Field Coor-

National Disaster
Recovery Framework

Recovery Support Functions
and Coordinating Agencies



dinator to the Joint Field Office (JFO). The Field Coordinator is responsible for ensuring that primary and supporting agencies within the RSF share information and support the community-level efforts occurring in the field.

Recovery Operations details the occurrence of activation, field deployment, and operations of the FDRC and RSFs. Also detailed are the missing scoping assessment process and the development of the Recovery Support Strategy (RSS).

The approach to providing long-term recovery support to states, communities, and tribes must be scalable, flexible, adaptable, and cost-effective.

There are two steps to developing the Mission Assessment and Support Strategy Development plans. The process is targeted for completion through coordination with the state, tribe, or territory within 60 days of becoming mission capable.

Step one of this process is the development of a Mission Scoping Assessment Report (MSAR). The MSAR becomes the foundation for developing a Recovery Support Strategy (RSS).

To prepare the MSAR, all available data and assessment reports from the relevant RSFs should be compiled. These data and reports will be used to develop a synthesis of the disaster damage and the anticipated impact.

The development of the RSS is the second step. The RSS details the approach the FDRC will take toward providing tailored, long-term recovery support to the state and local needs. It provides a

strategy and a unified approach for federal agencies to support the state and local governments in recovery.

The FDRC consults with the relevant State, Tribe, or Territory Disaster Recovery Coordinator (SDRC or TDRC) in the process of development.

The RSS is neither a state nor a local plan, but instead is a strategy and approach for the state, local, tribal, and/or territorial governments based on a comprehensive assessment of the actual and anticipated disaster impacts and issues.

The RSS identifies which federal agency or agencies will provide needed assistance, as well as provides the details, structures, and protocols for coordinating recovery support from the many involved federal agencies.

Recovery from Superstorm Sandy is ongoing, especially in New York and New Jersey. The process described is being used.

The JFOs for both states have already worked through the development of their



Partnerships at every level are supported by state and federal authorities through two-way communications.

MSARs and are in the process of drafting their RSS documents.

The Port Authority for NY and NJ is a significant part of the transportation and energy infrastructure; therefore, it has been determined that a separate RSS be developed for the combined Port Authority.

The RSS is neither a state nor a local plan, but instead is a strategy and approach for the state, local, tribal, and governments.

Iowa Silver Jackets find small communities in Iowa have a significantly higher flood risk per capita than large communities.

Floodplain Management and Risk Communication: An Iowa Silver Jackets Pilot

By Jason Smith, MVR USACE

While there are numerous products being developed by various federal and state governmental agencies to identify the current and potential future flood risk in the state of Iowa, the Iowa Silver Jackets (SJ) team found there is no single standard in the state.

Over the past year, hundreds of calls were made to local communities, and numerous tools were developed to assess flood risk in the Iowa-Cedar watershed basin.

This effort, completed in 2011, uncovered that small communities in Iowa have a significantly higher flood risk per capita than large communities and may be increasing future flood risk by encouraging floodplain development to boost their local economy.

In addition, flood risk in large communities continues to increase due to permitting decisions that, in some cases, are governed by outdated hydrology resulting from landuse changes that have expanded the extent of flooding.

In order to evaluate flood risk, the SJ team developed a spreadsheet that identified all of the communities within the Iowa-Cedar watershed boundary and established which communities had developed products such as hazard mitigation plans, future landuse plans, and zoning ordinances.

The team then used the Federal Emergency Management Agency's Hazard United States (FEMA-HAZUS) and GIS-based tools to quantify the current flood risk at a census block level and per capita by community.

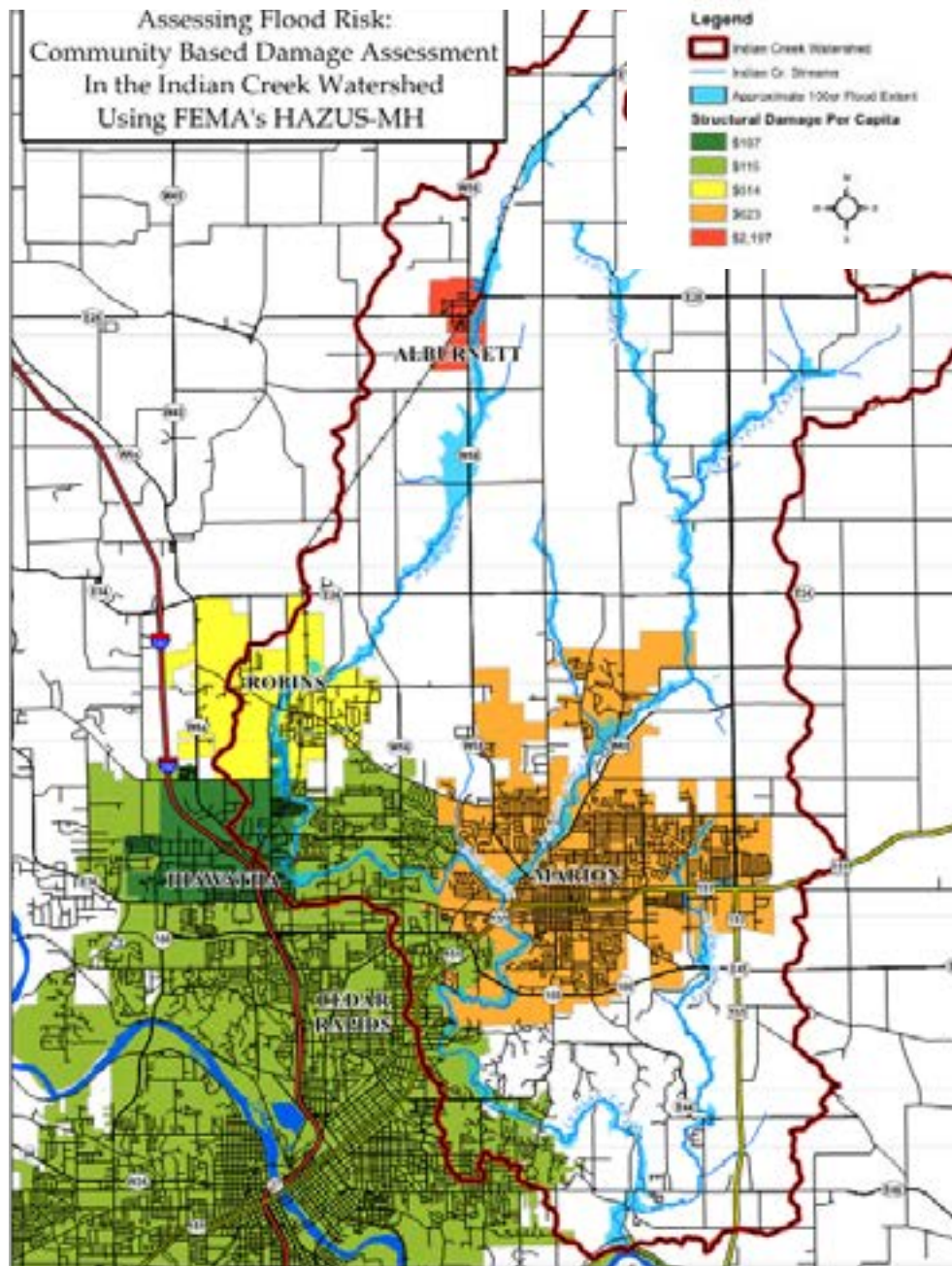
Future flood risk was identified by evaluating the existing flood risk with respect to the level of floodplain management being deployed through future landuse planning, hazard mitigation planning, or other zoning/building ordinances.

A combination of methods to quantify flood risk in the basin was utilized. The HAZUS computer program was readily deployed for areas that have FEMA-Flood Insurance Rate Maps (FIRM).

A significant gap was identified for evaluating the entire basin since only 22 of the 33 counties had FIRM products. In order to fill this gap, the SJ team attempted to use a Natural Resources Conservation Service (USDA-NRCS) landform method to delineate an approximate floodplain extent.

However, one limit of the USDA-NRCS landform method was that the approximate water level was not at the same elevation on both banks, preventing generation of a depth grid to run a depth damage function in HAZUS. Thus, the team was restricted to quantifying depth-damage based flood risk only in counties with FIRM maps.

A detailed evaluation of flood risk in the FIRM mapped Indian Creek sub-basin uncovered that the smallest community, Alburnett, has only one identified census block at risk, but it accounts for \$1.5 million in potential loss with a direct impact to 29 residents.



This constitutes a potential loss of \$51,000 per person residing in this census block.

In comparison, the other communities evaluated in this watershed range from \$1,000 per person to \$11,000 per person.

If these communities did not participate in the National Floodplain Insurance Program and were self insured, following every major flood event it would cost each resident in Alburnett \$2,200 to restore these 29 residences. In comparison, the other communities would range from \$100 to \$600 per resident.

This project has successfully developed a central database that assembles state and federal flood risk data within a central location.

The project also determined floodplain management may require a two pronged approach to lower overall flood risk potential in large communities and lower flood risk per capita in smaller communities. In addition, the availability of FIRM maps allows for a greater level of evaluation with respect to flood risk management.

Floodplain management may require a two pronged approach to lower overall flood risk.

Preparation and knowledge are key to being well-prepared for a potential flood.

One Stop Flood Resource for Pennsylvanians

by Fred Furney & Ashley Williams, USACE Baltimore District

During a flood, residents and business owners are overwhelmed with pressing needs, making information flow a vital necessity. Community officials' responsibilities escalate as they must notify its residents of shelters, keep people informed of upcoming weather patterns, and ensure that everyone has the best resources available to make informed and safe decisions.

However, information flow is also critical before a flood and after it occurs. Preparation and knowledge are keys to being well-prepared for a potential flood; also, if affected by high water, community members will need to know who to contact to begin to repair and rebuild.

In an effort to make it easier for Pennsylvanians to get vital information and keep informed before, during, and after a flood, the state Silver Jackets team created a Flood Risk Management website. This site became public in February 2013.

"Outreach is one of the main focuses of our Silver Jackets team, and this resource allows us to communicate with our stakeholders," said Stacey Underwood, Pennsylvania Silver Jackets Coordinator. "It's a one stop resource for anything you may need to know about a flood."

The website is divided into three categories: general information/before the flood, during the flood, and after the flood. Each section is divided into the most frequently asked questions regarding floods and provides a variety of tools and resources to answer each question.

Information includes links to gauge data, weather patterns, emergency management contact numbers, family preparedness plans, and flood insurance information. It also addresses short-term and long-term recovery concerns, possible funding, and necessary permits.

"This is an excellent resource for all stakeholders in the Commonwealth," says Angel Gillette, the Keystone Emergency Management Association Easter Area President. "Although flooding is Pennsylvania's number one risk, there wasn't a place where people could get information quickly without having to sift through an overwhelming amount of websites. The Flood Risk Management Virtual Tool keeps it simple."

The Pennsylvania SJ team will promote the website through various partnering organizations, as well as encourage feedback to improve the site and generate new content. The goal is to have flood information readily available and extensively used by residents throughout the state.

The website is the result of a collaborative effort to compile a comprehensive list of resources under one umbrella. The following SJ member agencies fully cooperated to accomplish this task:

<i>USACE</i>
<i>Pennsylvania Department of Community and Economic Development</i>
<i>Pennsylvania Emergency Management Agency</i>
<i>Pennsylvania Department of Environmental Protection</i>
<i>Pennsylvania Department of Transportation</i>
<i>USGS</i>
<i>FEMA</i>
<i>NOAA NWS</i>
<i>USDA National Resources Conservation Service</i>
<i>Susquehanna River Basin Commission</i>
<i>Keystone Emergency Management Agency</i>
<i>Pennsylvania Association of Flood Plain Managers</i>
<i>American Rivers Organization</i>

For more information, please visit the [website](#).

Recent Book Depicts the 2011 Mississippi River Flood Fight

Charles A. Camillo, historian for the Mississippi River Commission and the Mississippi River and Tributaries project, has written the official history of one of the biggest floods on the Mississippi. The book, **Divine Providence: The 2011 Flood in the Mississippi River and Tributaries Project**, is a result of his eyewitness account, interviews with those in charge, and reviews of memos generated through weeks of battling floodwaters. It is the story of prudent foresight, heroic actions, agonizing decisions, and extreme personal sacrifice.

A major decision covered in the first two of the book's five chapters, involved the activation of the Birds Point-New Madrid Floodway. The book includes interviews with Maj. Gen. John W. Peabody who reported on the state of the Ohio River and Maj. Gen. Michael J. Walsh who led the Mississippi River Commission.

The book details the creation of the levee system as well as the challenges that ensued as it became apparent that the USACE would need to take emergency measures and breach the levee.

As George Grugett from the Mississippi River Valley Flood Control Associa-

tion stated in the Forward, "Mr. Camillo was there on the spot, if you will, during those periods of anguish when the Mississippi River Commission made the difficult decisions that allowed this flood of record to flow to the Gulf of Mexico without the loss of a single life and with not one acre of land flooded that was not supposed to be flooded. Those gut-wrenching moments are captured in this book in such a manner that you do not have to be a water resources engineer to feel the tension and the need for the correct decision to be made at the proper time."

Camillo's work follows the Mississippi River floodwaters down the river. Chapter three looks at the historical context of Mississippi River tributaries from Arkansas to Vicksburg, while chapter four centers on the flood fight along the Mississippi Delta from Greenville to Vicksburg. The last chapter is about the engineering control on the Mississippi River and the decision to activate the Morganza and Bonnet Carre floodways.

As stated in a July 2012 article on this book in the **Southeast Missourian** newspaper, R.D. James, a member of the Mississippi River Commission, who spent several days in the field watching



Col. Edward Fleming delivers his final decision brief to the Mississippi River Commission.

the flood fight along with Camillo, has high praise for the book. "I think he touched very well on the trauma experienced by not only the people being impacted by the flood, but also the people involved in trying to control it -- the generals, the colonels and their staffs, the people on the ground," James said.

Five thousand copies of the book were printed. Free copies are available by emailing the Public Affairs office in Vicksburg, Mississippi, at cemvd-pa@usace.army.mil and providing a mailing address.

New book depicts the story of prudent foresight, heroic actions, agonizing decisions, and extreme personal sacrifice.



Upcoming Events

May

U.S. Army Corps of Engineers
[National Nonstructural Flood Proofing Committee](#), Flood Proofing Workshop for Community Officials, Plymouth, PA, May 8

June

[National Hydrologic Warning Council 2013 Conference](#), Ponte Vedra, FL, June 3-6
[37th Annual Conference of Association of State Floodplain Managers](#), Hartford, CT, June 9-14

August

2013 [Flood Risk Management and Silver Jackets Webinar Week](#), August 20-22

September

[California/Nevada/Hawaii Floodplain Management Association's Annual Conference](#), Anaheim, CA, September 3-6

November

[Minnesota Association of Flood Plain Managers Annual Conference](#), Austin, MN, November 20-22

December

[National Association of Flood and Stormwater Management Agencies 2013 Annual Conference and Expo](#), San Francisco, CA, December 9-11



US Army Corps
of Engineers