

# Flood Risk Management Newsletter

July 2013 vol 6 no 4

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## Flood Risk Management and Silver Jackets Program to Host 2013 “Webinar Week” Stephanie Bray, HQ

Recognizing the importance of encouraging partnerships and sharing information to improve flood risk management, the Corps of Engineers will host a “Flood Risk Management & Silver Jackets Webinar Week” in 2013. Webinar Week will be held Tuesday-Thursday, 20-22 August 2013, with additional training sessions offered on Friday, August 23, 2013. Webinar sessions will be held between 1pm and 5pm EST, to accommodate all time zones. Topics planned for webinar sessions include: flood risk communication training and application examples; dam and levee safety topics; nonstructural flood risk management alternatives; use of green infrastructure to reduce and manage flood risk; and many others. A final agenda will be developed and posted to the website, [www.nfrmp.us/frmpw/2013webinarweek/](http://www.nfrmp.us/frmpw/2013webinarweek/), in early July. Webinar Week provides a means for maintaining connections and building exchange while the Corps prepares for the next face-to-face Flood Risk Management and Silver Jackets Workshop. Webinar Week offers an opportunity to reach a large number of participants while exploring advantages and limitations of virtual interchange.

Please plan to join in accomplishing our goals to: 1) assess interagency challenges and opportunities and demonstrate results and benefits of collaborative approaches, across all levels of government, to improve effectiveness and efficiency in managing flood and other natural hazard risks and improving community resiliency; 2) unify, refine, and improve approaches to communicating the nature and degree of flood risk in the context of shared and individual responsibility, with the purpose of effecting action at the individual, community, watershed, state, and Federal levels; 3) refine approaches to providing Federal government services in a more coordinated, effective manner, with a focus on local and state priorities, including strategies to deal with funding challenges; 4) maintain information exchange, relationships, and momentum while planning the 2014 in-person Flood Risk Management and Silver Jackets Workshop; and 5) develop supporting actions for achieving the interagency coordination objective to improve state-led collaboration with the Silver Jackets program, as outlined in the

revised USACE Campaign Plan Goal 3c (<http://www.usace.army.mil/About/CampaignPlan.aspx>) - see “Quick Reference Guide” in the right column).

As the agenda and materials for Webinar Week are finalized, updates will be posted to the website ([www.nfrmp.us/frmpw/2013webinarweek/](http://www.nfrmp.us/frmpw/2013webinarweek/)). For any questions, please contact Stephanie Bray ([Stephanie.N.Bray@usace.army.mil](mailto:Stephanie.N.Bray@usace.army.mil)) or Jennifer Dunn ([Jennifer.K.Dunn@usace.army.mil](mailto:Jennifer.K.Dunn@usace.army.mil)).

## 90<sup>th</sup> CERB Meeting

The 90th meeting of the Coastal Engineering Research Board, hosted by the US Army Engineer Division, North Atlantic, and the US Army Engineer Districts New York and Philadelphia, will be held at the Ocean Place Resort and Spa in Long Branch, NJ, on 4-5 September 2013. The theme of the meeting is “Hurricane Sandy – Response, Recovery and Resilience.” (POC: Sharon L. Hanks, [Sharon.L.Hanks@usace.army.mil](mailto:Sharon.L.Hanks@usace.army.mil) )

## USACE-ERDC Coastal Storm Modeling System in Support of Hurricane Sandy Operations

**T.C. Massey, N. R. Pradhan, A.R. Byrd, CHL; D.E. Cresitello, NAN**

On Saturday 27 October 2012 the New York District (NAN) requested the Engineer Research and Development’s (ERDC) Coastal and Hydraulics Laboratory (CHL) provide numerical modeling of potential inundation and overland flooding for Hurricane Sandy. Later CHL was asked to provide estimates for the Nor’easter that followed Sandy. Using Advanced Circulation (ADCIRC) from the CSTORM-Modeling System along with GSSHA (Gridded Surface/Subsurface Hydrologic Analysis), CHL produced estimated flood maps of the greater NY area and Long Island along with storm surge estimates along the New Jersey coast for both Hurricane Sandy and the Nor’easter. Wind and pressure fields, derived from the National Hurricane Center advisories, were used to drive the ADCIRC model to create storm surge estimates. These estimates were then used in the GSSHA model along with rainfall estimates to estimate total inland flooding for the NY area. Model results were sent to NAN to be used for planning efforts. They were not intended to replace or contradict the official inundation forecast from the National Weather Service.

To meet NAN timeline requirements, Advisory 26 simulation results from both models were sent forward to NAN. The GSSHA simulation period began at 1400Z 29 October 2012 and ran until 1400Z 30 October 2012. The models included predicted rainfall amounts derived from NWS forecasts. In order to simulate inundation resulting from predicted storm surge, 5 points were selected from the ADCIRC model domain to establish the GSSHA model boundary conditions at key locations. In GSSHA, storm surge head values provide the key drivers for flooding. Modeling coastal surges in complex regions requires an accurate definition of the physical system and inclusion of all significant flow processes.

ADCIRC is an unstructured finite element, time-dependent long wave, hydrodynamic circulation numerical model used for the simulation of water levels and current velocities. GSSHA is a two-dimensional, physically based watershed model that simulates surface water and groundwater hydrology, erosion and sediment transport.

Numerical modeling systems such as the USACE ERDC Coastal Storm Modeling System (CSTORM) combine high resolution, high fidelity models such as ADCIRC, STWAVE, and WAM that can properly define the physical system and include necessary and appropriate non-linear coupling of the relevant processes. In highly urbanized areas such as New York City, overland flow models such as GSSHA are capable of providing additional flooding information by using estimates of rainfall as well as coastal surge inputs that come from models like ADCIRC.

Resources available at modern high performance computing facilities, such as the one located at ERDC, make using high fidelity models such as ADCIRC and GSSHA in a predictive model for storm surge and overland flooding a possibility. Where existing high resolution meshes and grids have been developed and tested under storm surge conditions, these possibilities can turn into realities. The Hurricane Sandy storm surge and overland flooding work by CHL researchers shows that when accurate inputs are used to force surge and overland flooding models, good estimates to flood levels can be achieved in a timely manner.

This application of ADCIRC and GSSHA spurred improvements. The workflow for running the models in predictive mode, how ADCIRC and GSSHA share information, the testing of atmospheric model forecast products for winds, pressure, and rainfall amounts, and improving the turnaround time for the GSSHA model are all being worked on. (POC: Chris Massey, [Chris.Massey@usace.army.mil](mailto:Chris.Massey@usace.army.mil))

**FEMA National Risk Awareness Survey**  
**Stacy Langsdale, IWR; Vince Brown, Daniel Jacker, David DiSanto, FEMA**

Since 2010 FEMA has conducted an annual nationwide survey with several goals: to track trends in flood risk awareness and understanding; to track methods, means, and preferences for risk communication; and to correlate factors to actions taken to reduce risk. Results inform federal agencies, states, and local communities how to most effectively engage and support communities toward advancing mitigation actions to reduce vulnerabilities to natural hazards.

Two versions of the survey are conducted: one is administered to the general public through random telephone interviews; and one invites local officials' participation through email, using contact lists and newsletters. Responses from the 2012 survey collected in early August last year. Both surveys returned over 1000 responses and are statistically significant.

**Key Findings from the 2012 Surveys**

Note: The statistics objectively report the results of the survey; however, the interpretations are that of FEMA and other organizations. Others may interpret the data differently.

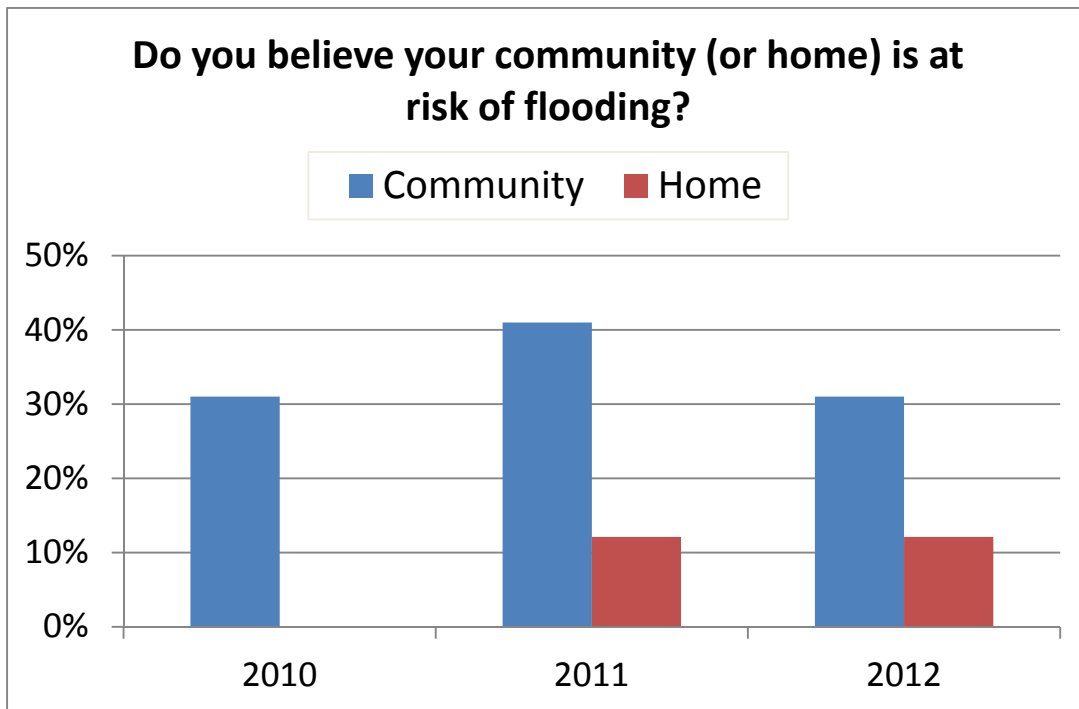


Figure 1 Public survey responses to: Do you believe that your community (or home) is at risk of flooding?

### Local Officials are More Aware of their Risk than the General Public

- Nearly 66% of *local officials* said that their communities were at risk of flooding. About 34% considered flooding to be their primary hazard. Those with the most recent flooding were much more likely to characterize their flood risk as high.
- In contrast, 31% of the *general public* respondents believed their community was at risk, while only 11% believed that flooding was the primary hazard their community faced.
- Of the *local officials* who had a levee in their community, 60% considered those behind the levee to be at risk, while all of those with levees, only 36% conducted outreach about it. The results were similar for dams, with 57% of local officials aware of risk, and only 30% of those with dams conducting outreach about it (See Figure 2).

### Communicating and Receiving Information

- *Officials* communicate flood risk through community meetings and websites but the *public* wants information delivered to them through the news and direct mailings: Holding community meetings/open houses and posting to a community website were the most popular methods *officials* used to communicate flood risk to their citizens (both were cited by over 40% of officials surveyed). Among the *public*, local news (at 76%) was by far the preferred information source regarding general flood risk (as opposed to specific flood-related news), with mailings a distant second at almost 30%.
- Floodplain and Emergency Managers communicate the most about flood risk: The majority of *officials* stated that the public hears most about flood risk from Floodplain and Emergency

Managers, whereas only a third of *officials* felt that the Mayor communicated with the public about flood risk.

- However, the *public* expects to hear about flood risk from their mayor or local media. The most cited source of where people expect to get information about flood risk was their mayor/other local elected officials and the local media.
- The *public* gets information from the local media and insurance agents: Local media and insurance agents were most mentioned as sources for information on individual's risk of flooding to their property.
- There is an opportunity for *local officials* to communicate more about flood risk: Less than a third of *officials* stated they communicate about flood risk to the general public at least annually. About a quarter (28%) stated they communicate about flood risk once every few years, while 16% stated they never communicate about flood risk.

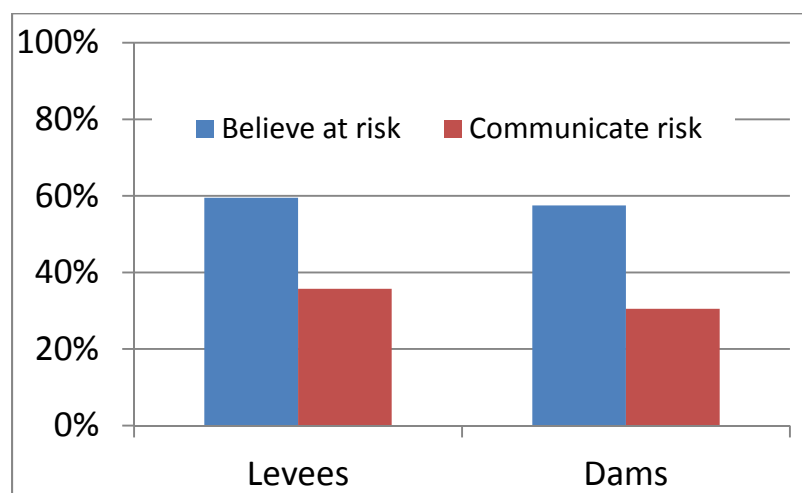


Figure 2 For the local officials who have levees or dams in their community, the results show the percentages who believe that the structure is placing those living behind or downstream of these structures at risk; and the percentages of all officials with levees/dams who communicate that risk.

### Research Motivates Action More than Proximity to a Hazard

- Moving into a new place prompts flood research. The top two reasons that motivated *public* respondents to search for information about their property's flood risk were moving into a new home or apartment (35%) and a recent flooding event (13%).
- People who search for flood information are more likely to take mitigation action. The belief that one's community or home is at flood risk does not appear to be linked strongly with taking activities to protect one's home from flooding. However, searching for information about flood risk does appear to be linked with greater activity in protecting one's home from flooding.
- Proximity to hazards is not an indicator of mitigation activities. Being located near a flood hazard area did not make *public* respondents feel that their community was at greater flood risk, but it did make them feel that their home was at greater risk. Despite that, they did not act significantly differently than those who were not located near flood hazard areas in terms of their behaviors to protect their homes against flooding.

Dr. Stacy Langsdale is currently supporting communication and outreach activities on a developmental detail with FEMA, but will return to USACE's Institute for Water Resources in August. For more detailed results or additional information on this survey initiative, please contact: [Vincent.Brown@fema.dhs.gov](mailto:Vincent.Brown@fema.dhs.gov) or [Stacy.Langsdale@associates.fema.gov](mailto:Stacy.Langsdale@associates.fema.gov).

## Other Links – Information, Newsletters, Fun Stuff

The **Silver Jackets** website, with newsletters – <http://www.nfrmp.us/state/>.

**CIRP Newsletters** are available at <http://cirp.usace.army.mil/news/>.

The **National Ocean Council**'s portal for data, information, and tools to support people engaged in planning for the future of the ocean, our coasts, and the Great Lakes. This site could become a one-stop hub to support planners and to provide useful information to the public.

<http://www.data.gov/ocean>

The Spring 2013 issue of the **CEIWR-HEC Newsletter** is now available for viewing on the Hydrologic Engineering Center's (HEC) website:

[http://www.hec.usace.army.mil/newsletters/HEC\\_Newsletter\\_Spring2013.pdf](http://www.hec.usace.army.mil/newsletters/HEC_Newsletter_Spring2013.pdf).

The New Orleans District has a Hurricane and Storm Damage Risk Reduction System (HSDRRS) website which contains a wealth of information.

<http://www.mvn.usace.army.mil/hps2/>

WRDAs and Related Laws

<http://planning.usace.army.mil/toolbox/guidance.cfm?Option=WRDALaw&Side=No>

Corps Guidance on Flood Control.

<http://operations.usace.army.mil/policy.cfm?CoP=flood>

Flood Risk Management Program (FRMP)

<http://www.nfrmp.us/>

## Subscribe – Unsubscribe – Feedback

To subscribe/unsubscribe: <http://operations.usace.army.mil/flood.cfm>.

We would love your input – recommended article length is ½ to 1 page. Articles should be submitted to Doyle L. Jones, Canvassing Editor, [Doyle.L.Jones@usace.army.mil](mailto:Doyle.L.Jones@usace.army.mil).

We would also appreciate your feedback. Contact Dinah McComas, Managing Editor, [Dinah.N.McComas@usace.army.mil](mailto:Dinah.N.McComas@usace.army.mil) or Doyle Jones.

## FY14 PROSPECT COURSES

Advanced Streambank Protection	Granada, MS	31 March 2014 – 4 April 2014
Coastal Ecology	Newport, OR	16 June 2014 – 20 Jun3 2014
Coastal Engineering	Vicksburg MS	24 February 2014 – 28 February 2014
Coastal Project Planning	Duck, NC	21 April 2014 – 25 April 2014 9 June 2014 – 13 June 2014
Consequence Estimation with HEC-FIA	Davis, CA	5 May 2014 – 9 May 2014
Dam Safety	Grenada, MS	3 February 2014 – 6 February 2014 3 March 2014 – 6 March 2014 7 April 2014 – 10 April 2014 9 June 2014 – 12 June 2014
Dam Safety	Branson, MO	5 May 2014 – 8 May 2014
Streambank Erosion and Protection	Vicksburg, MS	21 October 2013 – 25 October 13 24 March 2014 – 28 March 2014
Risk Communication & Public Participation	Huntsville, AL	3 September 2014 – 5 September 2014
For more information: <a href="http://ulc.usace.army.mil">http://ulc.usace.army.mil</a>		

FY 2014 Purple Book

<http://ulc.usace.army.mil/downloads/PurpleBook2014.pdf>

FY 2014 Projected Schedule

<http://ulc.usace.army.mil/CrsScheduleNewFY.aspx>

## Conferences

*This listing is for information only and is not a complete list of FRM-related meetings. These meetings are not endorsed by the Corps of Engineers unless specifically stated. If we have failed to list a conference/meeting/symposium that would be of interest to the Flood Risk Management community, please forward the conference details to us.*

21-25 July 2013 – International Congress for Conservation Biology – Baltimore, MD -  
<https://www.conbio.org/mini-sites/iccb-2013>

29 July-2 August 2013 – 5<sup>th</sup> National Conference on Ecosystem Restoration (NCER) – Chicago, IL - [www.conference.ifas.ufl.edu/NCER2013](http://www.conference.ifas.ufl.edu/NCER2013)

4-9 August 2013 – 98<sup>th</sup> Annual Meeting of the Ecological Society of America – Minneapolis, MN – <http://www.esa.org/minneapolis>

20-22 August 2013 – 2013 Flood Risk Management – Silver Jackets Webinar Week –  
[www.nfrmp.us/frmpw/2013webinarweek/](http://www.nfrmp.us/frmpw/2013webinarweek/)

4-6 September 2013 – Water and Society 2013 – 2<sup>nd</sup> International Conference on Water and Society – New Forest, UK - <http://www.wessex.ac.uk/watersoc2013?e=2-183374>

9-11 September 2013 – Northeast Beaches Conference – Galloway, NJ – <http://nsbpa.org>

23 -26 September 2013 – Oceans 2013 MTS/IEEE – San Diego, CA - [www.oceans13mtsieeesandiego.org](http://www.oceans13mtsieeesandiego.org)

23-27 September 2013 – PIANC – SMART Rivers Conference – Maastricht, The Netherlands, <http://smartrivers2013.org/home>

26-27 September 2013 – 2013 AWRA Mid-Atlantic Conference – Water Resources: Adaptation & Advancement – Trenton, NJ – <http://mac2013.wildapricot.org/>

6-11 October 2013 – 5<sup>th</sup> World Conference on Ecological Restoration – Madison, WI – <http://www.ser2013.org/>

22-25 October 2013 – ASBPA National Coastal Conference – South Padre Island, TX

9-13 December 2013 – American Geophysical Union’s 46<sup>th</sup> Annual Fall Meeting – San Francisco, CA – <http://fallmeeting.agu.org/2013/>

14-16 May 2014 – 2<sup>nd</sup> International Conference on Environmental and Economic Impact on Sustainable Development – Ancona, Italy – <http://www.wessex.ac.uk/14-conferences/environmental-impact-2014.html>

1-6 June 2014 – ASFPM 38<sup>th</sup> Annual National Conference – Seattle, WA – <http://www.floods.org>

4-6 June 2014 – Risk Analysis 2014 – New Forest, UK – <http://www.wessex.ac.uk/14-conferences/risk-analysis-2014.html>

28 July - 1 August 2014 – Conference on Ecological and Ecosystem Restoration – New Orleans, LA – [www.conference.ifas.ufl.edu/CEER2014](http://www.conference.ifas.ufl.edu/CEER2014)

14-19 September 2014 – Oceans 2014 MTS/IEEE – St. John’s, Newfoundland and Labrador, Canada – [www.oceans14mtsieestjohns.org](http://www.oceans14mtsieestjohns.org)

16-18 September 2014 – 6<sup>th</sup> International Conference on Flood Management (ICFM6), “Floods in a Changing Environment” – São Paulo, Brazil – <http://icfm6.com/index.php>

1-5 November 2014 – 7<sup>th</sup> National Conference on Coastal and Estuarine Habitat Restoration – Washington, DC – <http://www.estuaries.org/conference/>