FMA News

The Newsletter of the Floodplain Management Association

www.floodplain.org

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Highlights of This Issue

FMA would like to acknowledge the Association level sponsorship by the following firms:

Letter From the Chair

Greetings!

Thankfully, we made through the entire winter season without a single flood event! In the case of floodplain management, however, this can be good and bad news. The good news...no damage! The bad news...the public will interpret this as decreased risk of flooding! As floodplain managers, it is our job to ensure that the public remains informed about the very real risks of flooding, whether they actually live in a floodplain or not. One way people can mitigate the risk of flooding is by purchasing flood insurance. Now is a very good time to purchase flood insurance, as rates are scheduled to increase by 6 to 10 percent beginning May 1, 2008.

The Flood Insurance Reform bill passed from the House to the Senate last fall. The bill is currently on hold pending resolution of several issues, including an optional wind policy, increased maximum insurance amounts, optional coverage for business interruption, and elimination of the bill's requirement for insurance in residual risk areas behind levees.

Planning for our **Annual Conference** at the **Paradise Point Resort in San Diego, September 2 – 5, 2008,** is going very well. The theme of the conference is Floodplain Sustainability: Integrating Flood Risk, Land Use and Environmental Stewardship. Two programs of special interest this year are the **U.S. Army Corps of Engineers Arid Regions Demonstration Programs** and a **Climate Change and Floodplain Management Symposium**. The Symposium is scheduled to take place all day on Friday, so please schedule your return travel accordingly!

Finally, I encourage you to plan to attend the **Association of State Floodplain Managers annual conference in Reno, Nevada, May 18-23, 2008**. The conference will be held under one roof at John Ascuaga's Nugget Hotel. The theme of the conference is A Living River Approach to Floodplain Management, a reference to the goal of effective floodplain management on the Truckee River. FMA is the local host chapter of this years ASFPM conference, and is sponsoring both the golf tournament and memorabilia sales, so come and support our organization! I hope I see you there!

Jeanne Ruefer

UPCOMING EVENTS!

Visit www.floodplain.org to register!

FMA is pleased to announce the following professional development courses designed for engineers, regulators, planners, floodplain managers and stormwater professionals involved in water issues:

- Watershed Modeling with HEC-HMS: Overview and Applications, May 28, Sacramento, California
- HEC-HMS Complete Course, June 24-26, McClellan, California (12 CEC)
- Certified Professional in Storm Water Quality (CPSWQ) Training and Exam, July 8-9, Carson City, Nevada (12 CEC)
- Fundamentals of Hydrology and Hydraulics for Engineers, July 28-30, Carson City, Nevada (12 CEC)

Don't miss the following important conferences in floodplain management:

- ASFPM Conference, May 18-23, Reno, Nevada (12 CEC)
- California Extreme Precipitation Symposium, "Estimating and Forecasting Extreme Floods," June 20, U.C. Davis, California
- FMA Annual Conference, September 2-5, San Diego, California (12 CEC) Deadline to Call for Presentations is May 31!

Other professional conferences and events:

- WRA 2008 Summer Specialty Conference: Riparian Ecosystems & Buffers: Working at the Water's Edge, http://www.awra.org/meetings/Virginia_Beach2008/. Founders Inn & Spa, Virginia Beach, VA, June 30-July 2, 2008
- 44th AWRA Annual Water Resources Conference, http://www.awra.org/meetings/NewOrleans2008/index.html. Sheraton New Orleans Hotel, New Orleans, LA, November 17-20, 2008
- Floodplain: How is it defined? www.extension.ucdavis.edu/engineering. Sacramento, CA, May 8 (UC Davis Extension).

A California Challenge – Flooding in the Central Valley

In July 2007, a team of the nation's leading flood experts was assembled at the request of the Department of Water Resources (DWR) to provide insights and recommendations on how California should deal with the special circumstances of deep floodplains in the Central Valley. The result of that collaboration is the report, "A California Challenge – Flooding in the Central Valley." The report finds the current flood control system of California's Central Valley incapable of dealing with the threat of severe flood events, placing its urban centers at considerable risk. The recommendations made by the panel in this report provide independent validation of the many flood protection improvements led by Governor Schwarzenegger and the Legislature in recent years, but underscore the need for continued action.

DWR will consider carefully the recommendations of the independent panel under as it further refines its strategic plan and moves forward in implementing additional improvements to the flood control system of California. A copy of this report is available on the FMA web site at www.floodplain.org and also on the DWR web site at www.floodsafe.water.ca.gov.

Delta Vision Science Advisors Issue Memo on Levee's Impacts to the Delta Ecosystem

Contrary to popular belief, California Delta levees do not always help to sustain a healthy Delta ecosystem, according to Delta Vision Science Advisors Mike Healey and Jeff Mount. Rather, levee construction probably caused many of the current ecological problems in the Delta by cutting off the critical exchanges of materials between land and water. However, the memo also notes that the Delta levee system is critical for many present-day uses of the Delta, including prevention of flooding of adjacent lands and to control water quality or hydrology to promote specific habitat types, such as waterfowl habitat. Provided to the Governor's Delta Vision Blue Ribbon Task Force last fall, the full text of the memorandum written by Healey and Mount is now posted on the CALFED website at:

http://www.science.calwater.ca.gov/pdf/dv/DV_healey_mount_levee_memo_112407.pdf.

Residual Flood Risk Protection in Floodplains

By Thomas S. Plummer P.E., CFM
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Defining Residual Risk

The current predominant concept of "Residual Risk" is defined in this "post Paterno" California as the additional risk of damage, in dollars ($), being added to floodplains through the addition of development, infrastructure, and people, into those floodplains. Using this definition, Residual Risk is fairly easy to quantify, and can sometimes be mitigated.

In working on several residual risk related projects recently, it has come to our attention that there are many other concerns that should be given consideration when evaluating the residual risk. The recent declaration of the de-accreditation of the Natomas protection levees, and the identification that the Natomas Basin will be mapped into an AE flood zone in 2008 has resulted in the need to consider a number of additional residual risk factors. We hear over and over again the residual risk viewpoint of, "how can we prevent these lands from being remapped into floodplains in the future, after the current repair plan is completed by SAFCA?". It is impossible to argue this viewpoint away as fingers are being pointed at policy changes, standards changes, legislative changes, opinion changes, technology changes, and even knowledge changes.

It's true, probably the biggest contributing factor to the de-accreditation of the Natomas levee protection system, is simply the fact that we know more about these levees now, than a decade ago when they were last repaired, brought up to standards, and certified. It is also going to be true, that 10-years from now, we will know more about these systems than we do today, and that knowledge may be sufficient again to warrant de-accreditation until another set of repairs can be made. This residual risk perspective is nearly impossible to quantify and difficult to mitigate, but warrants consideration.

Other common Residual Risk perspectives we commonly hear concern about include:

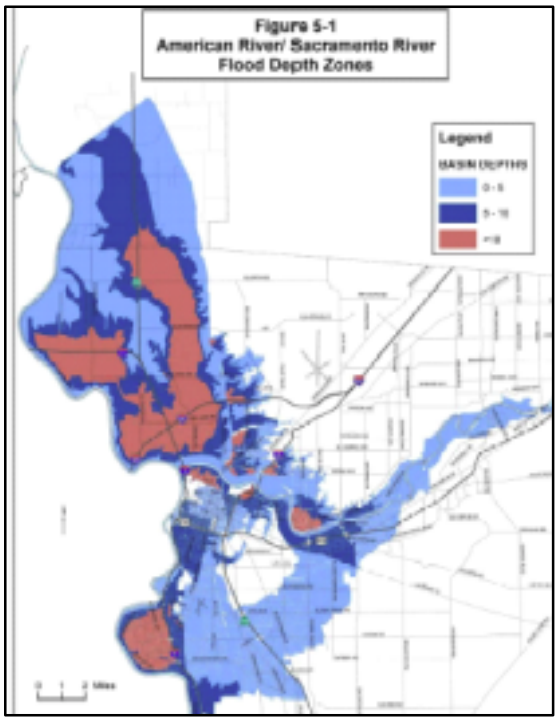
- Safety of people - and what plans for evacuation, and what minimum level of risk should be acceptable, and planned for.
- Design event exceedance and risk of random failure.
- Certification Standard Updates, and Policy Clarifications (See FEMA memorandums 34 and 43)
- Incorporation of Risk Based Analysis in the future
- Ability to incorporate new construction, maintenance and inspection criteria (as technology improves)
- Previously non-evaluated issues like Seismic Stability
- Vegetation removal requirements
- Climate change impacts
- Changes in legislation
- Viscous impacts to levee systems, such as subsidence and deep seepage.
- The decision making processes
- Vulnerability to bond debt security issues for current and future infrastructure.
- The unknown?

In current and future situations, some or all of these factors will impact residual risk in evaluating levee quality, and establishing individual levee protection certifications.

A History of Solutions

The urbanized Sacramento region is largely protected by levees. The history of how these systems have been built and rebuilt to their current state, has been storied in several publications and books, see http://www.sachistoricalsociety.org/journal.htm for many references on this subject. Since the 1850's, Sacramento has attempted to protect urbanizing areas by building levees adjacent to the rivers, to hold back the waters. When those systems have failed or been overtopped, generally they have been replaced with larger levee systems. As the urbanized area grew the river levee systems were expanded further upstream to encircle new development areas. This resulted in some "compartmentalization" in the flood protection system, but many of the interior levees have not been maintained and upgraded sufficient to continue to receive accreditation for 100-year protection. More recently other residual risk mitigation systems (such as Laguna West) have been installed with development, such as setback levees, secondary levee systems, and isolation levees.

The Sacramento Area Flood Control Agency (SAFCA) centralizes flood risk protection efforts for the levee protected areas east of the Sacramento River. SAFCA operates across the boundaries of many jurisdictions. The exhibit below identified SAFCA's most recent determination of potential flooding depths behind the Sacramento levees.



(Source: SAFCA Consolidated Capital Assessment District Final Engineer's Report)

Options for the Natomas Basin

The Natomas Basin composes 90% of the SAFCA identified levee protected floodplains, north of the American River. Natomas is 16 miles (n-s) by 8 mi (e-w), and includes roughly 57,000 acres (89 sq. mi) of land. Roughly 1/3 of the basin is currently developed around Interstate's 80 and 5. Natomas is almost completely encircled with levees protecting it from storm waters of the Sacramento River along the west and south, the American River along the south, backwaters of the American River at Dry Creek and Steelhead Creek (NEMDC) in the central and southern parts of the eastern boundary, the Pleasant Grove Canal in the northern areas of the eastern boundary, and the Natomas Cross Canal along the north boundary. The Natomas levee protection system also has a gap. Where Sankey Road crosses the levee system near the Pleasant Grove Canal, a gap remains through which flood waters can enter the basin from the east. Currently, flood protection systems within the basin account for the storage and conveyance of the Sankey Gap spill volumes for normal estimated floods of the Pleasant Grove Canal. However, a levee breach at the Feather River northeast of this area could direct additional volumes of water into the basin which could exceed the storage and conveyance capacity of the interior system.

The Natomas basin includes several key infrastructure elements including: 6 Miles of Interstate 80, 10 miles of Interstate 5, 9 miles of combined State Route 99/70, and Sacra-