Association of Montana Floodplain Managers
21st Annual Conference

HILTON GARDEN INN, KALISPELL, MT, MARCH 10TH – 13TH, 2020

"THE FORUM IN THE FLATHEAD"

AGENDA

Tuesday, March 10 **Pre-Conference Sessions**

8:00 am – 5:00 pm **Working in and Around Floodplains**

Harry Katz
FEMA Region VIII
Stephanie DiBetitto
FEMA Region VIII
Traci Sears, CFM
MT DNRC
NFIP/CAP Coordinator

Working in and around floodplains can be difficult. This workshop should provide important information for surveyors, engineers, local officials, and others who work in these areas as they navigate through the regulatory requirements to reduce flood damage and risk.

The topics to be covered by the workshop include:

1. Brief overview of the NFIP Program (State);
2. How to identify if a property is located in the SFHA (FEMA);
3. Permitting requirements (State);
4. Fill requirements (State);
5. Structure requirements (FEMA);
6. LOMCs (FEMA);
7. Mitigation (State);
8. Compliance (FEMA).

The intended audience for this workshop includes surveyors, engineers and contractors, in additional to local floodplain management officials.

1:00 pm – 5:00 pm **Registration - Lobby**

1:00 pm – 4:00 pm **Certified Floodplain Manager (CFM®) Study Session***
(*Review only, not intended to teach the exam.)

Forrest Sanderson, AICP, CFM
KJL
Samantha Malenovsky
Miles City FPA

5:00 pm – 6:00 pm **AMFM Board Meeting** **Seeley Room**

5:00 pm – 9:00 pm **CFM® Exam**

Forrest Sanderson, AICP, CFM
KJL.
Samantha Malenovsky
Miles City FPA

Wednesday, March 11 Pre-Conference Session

8:00 am – 5:00 pm **Registration - Lobby**

8:00 am – Noon **DNRC Concurrent Technical Sessions**

Session 1: Local Floodplain Administration

Traci Sears, CFM
MT DNRC
NFIP/CAP Coordinator

1. Floodplain Administrator and Community Responsibilities.
2. Floodplain Permitting – Stream Restoration and other complex projects.
3. Enforcement Issues, Statewide Examples.
4. Recovery Responsibilities.

Session 2: Letter of Map Changes (LOMC's)

Matt McGlone
FEMA Region 8 RSC Lead
CDM Smith, a member of Compass PTS JV

FEMA Region 8 has been providing training on the MT-1 (Letter of Map Amendment) process for many years. In addition, PTS Contractors have been giving the MT-2 (Letter of Map Revision) presentation to various groups throughout Region 8 over the same time. The MT-1 presentation gives community employees, engineers, land surveyors and others an overview of the MT-1 process, the different floodplain Zones, how to fill out an elevation certificate, and other aspects of ensuring structures are out of the floodplain. The recently updated version of the MT-2 presentation also gives those interested in floodplain management and floodplain federal regulations a chance to become familiar with the MT-2 process, ask questions, and stay up to date on any recent changes to the Letters of Map Revision (LOMR) and Conditional Letters of Map Revision (CLOMR) review process. The MT-2 presentation includes topics such as an overview of the National Flood Insurance Program (including applicable standards and regulations), types of revisions, obtaining flood hazard data, and a background of the review process, including how to submit an MT-2 and common mistakes/lessons learned. These presentations may be adjusted from the usual format to fit the conference scheduling needs but will provide valuable information related to Revision and Amendment work in Montana.

10:15 am –10:30 am **Morning Break (Both Sessions)** ***Courtesy of KLJ***

Wednesday, March 11 General Conference Sessions Begins

1:00 pm –1:05 pm **Welcome and Opening Comments** **Pam Vosen**, AMFM Chair
Fergus Co. FPA

1:05 pm -1:10 pm **Message from Senator John Tester** **Caitlin Avery**
Field Representative

1:10 pm -1:15 pm **Message from Senator Steve Daines** **Ron Catlett**
Field Representative

1:15 pm – 1:20 pm **Message from Congressman Greg Gianforte** **Sonny Capece**
Field Representative

1:20 pm – 1:30 pm **Office of the Montana State Auditor and Insurance** **Sharon Richetti**
Policy Holder Services
Bureau Chief

Wednesday, March 11 General Conference Sessions

1:30 pm – 2:00 pm **Mineral County – Clark Fork River Tributaries Floodplain Studies**

Luke Carlson, PE, CFM
Water Resources Engineer
Morrison-Maierle

In 2018 and 2019 Morrison-Maierle completed hydraulic and floodplain mapping tasks for the DNRC/FEMA floodplain study update for Mineral County, Montana. Our presentation will provide an overview of the Clark Fork River and Tribs Floodplain Study in Mineral County. A component of the project included floodplain study updates for seven tributaries to the Clark Fork River. These streams presented several modeling challenges including:

- Very Steep (20%+) gradients where they enter the Clark Fork River valley
- Substantial variance in stream setting – very steep gradients intermixed with low-gradient hanging valleys

Our presentation will describe the larger project, the technical challenges this project presented, and the approach to resolving the challenges while remaining in compliance with FEMA Standards and Guidance and Engineering Standard Practice.

2:00 pm – 2:30 pm **Montana's State Floodplain Mapping Program: Update on Current and Upcoming Mapping Projects**

Doug Brugger, EI, CFM
Tiffany Lyden, CFM
Nadene Wadsworth, CFM
Montana DNRC

This session will provide an overview of Montana's floodplain mapping program, and how DNRC works collaboratively with FEMA and communities to update and produce new floodplain maps. We will give an update on current and future floodplain mapping projects around the state and introduce new staff that have joined the DNRC team.

2:30 pm – 3:15 pm **Flood after Fire**

Dianna Herrera, CFM
Regional Flood Insurance Liaison
FEMA

With Montana having had several bad fire years, what are you doing to reach out to your community about the increased risk for flood. We have tools and assistance that you can tap into in order to help you and your community.

3:15 pm–3:30 pm **Afternoon Break** ***Courtesy of WET***

3:30 pm – 4:15 pm **Real Time Inundation Mapping On the Flathead River**

Travis Ball, USACE
Ray Nickless, NWS Missoula
Kathy Chase, USGS

The United States Army Corps of Engineers (USACE), Unites States Geological Survey (USGS) and National Weather Service (NWS) cooperated with the local stakeholders in Flathead County, Montana to produce the first real-time inundation mapping library in the state of Montana.

Funding and Modeling (Travis):
USACE leveraged funds from its Floodplain Management Services Program - and previous study efforts – to build a 1D/2D hydraulic model of the Flathead River from roughly Columbia Falls to Kalispell. Inundation maps were produced from several flood scenarios, based on gage readings from the Columbia Falls stream gage.

Coordination (Ray):
The USGS collected high water marks for calibration, provided technical review of the modeling and mapping efforts, and posted the products on its Flood Inundation Mapper online library. The NWS reviewed the mapping products for accuracy by comparing modeled inundation areas to 23 years of flood surveys. The NWS also posted the inundation maps online at its Advanced Hydrologic Prediction Service page.

Demonstration (Kathy):
The USGS will demo the real-time FIM for the audience and outline the opportunity to partner on more of these projects in the future. The maps are not intended for regulatory purposes (like FEMA's FIRMs), but instead act as a tool for local emergency management, planning, and engineering officials, as well as provide information to the public that is otherwise hard to track down.

Wednesday, March 11 General Conference Sessions

4:00 pm – 4:30 pm **Benefits to a Community Rating System (CRS)**

Constance Lake, CFM

Program CRS Specialist
ISO Community Hazard Mitigation

If you're considering a CRS program for your community or would like to be reenergized on your existing program, come hear what CRS is about and the possible benefits to your community. This presentation will also give you an idea of the credit you could receive for what you're already doing.

Appointments can be scheduled with an ISO/CRS Specialist to discuss specifics about your CRS program, to find out what is needed for your community to improve its current CRS classification, or to have a more detailed discussion on joining CRS and the benefits to your community. These personalized meetings are an opportunity to discuss your community's land use management program, higher regulatory standards, stormwater management program, flood warning system, watershed management program, or any other components of a balanced floodplain management program. To ensure your first choice of available times, please contact Constance Lake at 307.439.3790 or clake@iso.com.

4:30 pm - 5:00 pm **DNRC Awards** **Traci Sears**, CFM
MT DNRC

6:00 pm – 9:00 pm **Evening Social** ***Courtesy of Morrison-Maierle, Inc. and Michael Baker & Associates***

Thursday, March 12 Conference Sessions

8:00 am – 5:00 pm **Registration - Lobby**

9:00 am – 9:30 am **Climate Change in your Hometown: An Overview of How What We See Can Be Distilled into a Practical Application of Flood Risk for Your Community.** **Andrew Park-Friend**, PE
Surface Water Engineer
Michael Baker International

There is a wealth of future climate data available – but how can it be applied to understanding how riverine flooding will change in the future in your community? This presentation will cover the future climate data that is currently available, the different methodologies used to develop this data and how these methodologies differ from each other, as well as how the data can be used to explore the changing riverine flood risk in your community. We will discuss the conclusions of state, national, and global climate reports with respect to riverine flooding, and how these conclusions vary regionally across the United States.

We will further discuss these regional conclusions can be sharpened and honed to analyze future flood risk in a single community or on a single flooding source through two recently-completed case studies using the latest guidance from the Transportation Research Board. To do this, we'll demonstrate how greenhouse gas emission General Circulation Models (GCMs) can be used to develop probable future storm magnitudes and future conditions H&H models and will highlight how two communities in Pennsylvania and Nebraska used this data to develop adaptive design strategies to improve resiliency.

Thursday, March 12 Conference Sessions

9:30 am - 10:00 am **Low Flood Risk? Ice Jam Flooding and Modeling**

Russell Anderson, PE, CFM
Senior Water Resource Engineer
Mark McBroom, PE
Surface water Technical Manager
Andrew Park-Friend, PE
Surface Water Engineer
Michael Baker International

Recent flooding in Oregon, Montana, Nebraska, Iowa, Minnesota, and other northern states has demonstrated the severe impact that ice jam flooding can have on local communities. By creating sizeable obstructions and increased hydraulic resistance to normal flow, ice jams can cause peak water surface elevations multiple feet higher than otherwise anticipated and can cause flooding in unexpected areas. Frequently overlooked by hydraulic modelers, ice jam flooding can occur almost anywhere that has winter temperatures cold enough to form river ice.
In this presentation, we will highlight the danger of ice jam flooding, describe scenarios and types of watersheds and geomorphology where ice jam flooding may occur within the state of Montana, and will explain techniques that can be implemented to model ice jam flooding. Ice jam modeling requires developing an understanding of the historical record, and consideration of a range of probable ice jam extents. One-dimensional models such as HEC-RAS can explicitly model blockage caused by ice, and we will demonstrate how this type of modeling is done and how it can be used. We will also review how ice jams can be implicitly modeled using a two-dimensional model. Finally, we will illustrate how these concepts and methods were applied to an ice jam analysis on the Madison River near Three Forks, MT and how the information is being used in flood risk analysis and mapping in this area.

10:00 am -10:30 am **Ice Jams Mobile-Friendly Website for Ice Jam Data Collection and Display**

Katherine Chase, PE
USGS Hydrologist

Ice jams along rivers cause flooding, scouring, injuries and loss of life, and structural and environmental damage; they are a major hazard across the northern United States (US). Communities need data about ice jam locations and frequencies, as well as information about developing ice jams that might threaten lives and property.

The US Geological Survey is collaborating with the National Weather Service, the US Army Corps of Engineers, Montana Silver Jackets, and multiple state agencies to develop a tool for collecting and displaying ice jam information. This mobile-friendly website will enable individuals to collect real-time information about ice jams. We plan to test the site in winter and spring of 2020. Ultimately, we strive to make ice jam data available to the public using online, interactive maps, and formatted for transfer to the US Army Corps of Engineers Ice Jam Archive. The maps and archive will be useful for understanding ice jam processes and identifying sites that are vulnerable to ice jam flooding and damages. The data can be used in tools to help predict probability of ice jams across the nation.

10:30 am - 10:45 am **Morning Break** ***Courtesy of WGM Group***

10:45 am – 11:30 am **What Makes Good Flood Risk Communication?**

Sam Bugg
FEMA Community Engagement
and Risk Communication Support

Flooding is the most common and costliest natural disaster in the United States. Local officials are on the front lines in helping their communities understand flood risk. However, important risk information is helpful only if it is well communicated.

What makes good flood risk communication?

During this interactive presentation, the Federal Emergency Management Agency's (FEMA) Community Engagement and Risk Communication (CERC) team will share strategies, tips, and resources for talking effectively to your community about flood risk.

Thursday, March 12 Conference Sessions

10:45 am – 11:30 am **What Makes Good Flood Risk Communication? (cont'd)**

We will address topics that include:

- Why messaging matters
- How to identify a target audience and tailor your communication
- How to bridge the gap between awareness and action

We will share useful tools like FEMA's Flood Resilience Messaging Guide, the video series from FEMA's Flood Risk Communication Toolkit for Community Officials, and community case studies. Join the discussion to learn why effective messaging is critical to increasing community flood resilience.

11:30 – 1:00 pm **General AMFM Membership Luncheon Meeting**

11:30 – 1:00 pm **Lunch on Your Own for Those not attending Luncheon**

1:00 pm – 1:30 pm **Floodplain Platform for Community Information**

Traci Sears, CFM
Montana NFIP Coordinator
Montana DNRC

In 2018 the State of Montana received funding through FEMA to create an ESRI GIS web-based application aimed at streamlining data related to floodplain applications, permits, recovery information, and other miscellaneous floodplain managing documentation. A select number of CRS communities are utilizing this permitting platform that is centered around an intuitive base map. Querying community information can help direct mitigation activities, recovery efforts, new mapping areas, and project site visits. This special project proved to be more complex and time consuming than originally anticipated. The state representative will provide findings and deliverables for the project, an overview of the on-line tool, and how this information is being utilized for community visits.

1:30 pm – 2:15 pm **The History of the NFIP Mapping Program, and How We Got to Where We Are Today.**

Brian Koper, FEMA
Emergency Management Spec.
Thomas Smith, PE
FEMA Community Engagement
And Risk Communication

The National Flood Insurance Act of 1968 established the National Flood Insurance Program, required the mapping of flood prone areas, and made flood insurance available in communities that meet floodplain management criteria. Join us in a look back at the history of the NFIP mapping program, and how we got to where we are today.

During this presentation, the Federal Emergency Management Agency's (FEMA) and their Community Engagement and Risk Communication (CERC) contractor will share information from a historical perspective on the NFIP mapping program; from the development of Flood Hazard Boundary Maps for the entire nation to the current National Flood Hazard Layer.

We will address topics that include:

- Types of NFIP maps over the years
- What information is shown on these maps
- The impacts of these maps on their users (NFIP communities, states, and property owners)
- And how the maps have evolved over the last 50 years
- How flood hazard information is communicated, accessed, and kept up-to-date

Joins us in discussing this historic time period and how it has impacted the NFIP mapping changes and enhancements over the years.

Thursday, March 12 Conference Sessions

2:15 pm – 2:45 pm **Substantial Damage and Compliance in Post Disaster Scenarios**

Stephanie DiBetitto
FEMA Region VIII
Harry Katz
FEMA Region VIII

In 2019, Northern Plains and Midwestern communities experienced widespread flood disasters. South Dakota, located in FEMA Region VIII, has received five disaster declarations from several flood events beginning in March and extending to September 2019. As South Dakota communities rebuild and plan their recovery, performing substantial damage determinations and remaining compliant with the National Flood Insurance Program has been a prominent theme. This talk will provide information on substantial damage, as well as highlight potential consequences of non-compliance with floodplain development regulations during flood recovery.

2:45 pm – 3:15 pm **Montana Silver Jackets and USACE Authorities**

Tony D. Krause, PE. CFM
US Army Corps of Engineers

This presentation will give an update on the Montana Silver Jackets Program and current projects (Havre, Glasgow, Ice Jam Reporting App) as well as select projects in other states. The presentation will also cover other USACE authorities and provide example projects to assist communities in identifying federal resources to address flood risk concerns.

3:15 pm –3:45 pm **Afternoon Break** ***Courtesy of Great West Engineering***

3:45 pm – 4:30 pm **The New Elevation Certificate**

Dianna Herrera, CFM
Regional Flood Insurance Liaison
FEMA Region VIII

With Montana having had several bad fire years, what are you doing to reach out to your community about the increased risk for flood. We have tools and assistance that you can tap into in order to help you and your community.

6:00 pm –9:00 pm **Evening Social** ***Courtesy of National Flood Services and DOWL***

Friday, March 13 Conference Sessions

9:00am – 9:30 am **HEC-LifeSim Modeling for Flood Risk Awareness and Emergency Management Planning.**

Brennan B. Beam, EI, CFM
Hydraulic Engineer
Hydrologic Engineering Center
USACE

HEC-LifeSim is a USACE developed modeling software for estimating potential life loss from flood hazards, especially those resulting from dam or levee breaches. LifeSim models can help planners better understand how life loss is occurring by simulating the entire warning and evacuation process on an agent-based level, and gives us the ability to provide meaningful alternatives for reducing life loss. This session will introduce HEC-LifeSim, and discuss its methodology, validation, and applications.

Friday, March 13 Conference Sessions

9:30 am – 10:00 pm **Bozeman Creek LOMR**

Jennifer W. Johnson, PE, CFM
Lead Hydraulic Engineer
Paul J. Sanford, PE, CFM
Allied Engineering Services, Inc

Allied Engineering Services, Inc. (AESI) provided refined modeling services through a Letter of Map Revision (LOMR) for the completed Bozeman Creek and Tributaries project. The original modeling effort, completed by others, aimed to update floodplain mapping for the Bozeman area using current elevation data and the United States Army Corps of Engineers' (USACE) hydraulic modeling software HEC-RAS. During the model's construction, the USACE released version 5.0 of HEC-RAS with 2D modeling capabilities. With the release of a free and accessible 2D modeling software, the City of Bozeman expressed interest in using 2D modeling to improve simulated flood extents in the downtown area. After holding extensive conversations with the City and FEMA on how best to incorporate 2D modeling with standing FEMA regulations, especially for the floodway, AESI completed a detailed 2D model in HEC-RAS 5.0.3 to locate and quantify split flows. The 2D model underwent extensive agency review and was used to inform a 1D model. Ultimately, several miles of Bozeman Creek floodplain and floodway were updated. Once the LOMR is integrated into the overall mapping project, the model will be used by the community to regulate development in the future.

10:00 am – 10:30 am **City County Drain Flood Mitigation Project**

Greg Gabel, PE, CFM
DOWL

The City County Drain is a man-made stormwater outfall ditch that drains approximately 6,000 acres of the City of Billings. This drain ditch discharges into the side channel of the Yellowstone River that is disconnected from the main channel by a gravel island. During 2018 spring runoff in the Yellowstone River eroded away the island resulting in significant backwater extending upstream into the City County Drain. This backwater coupled with runoff from a number of rainstorms, resulted in residential basement flooding north of the I-90. With the river now directly connected to the City County Drain, backwater in the City County Drain has increased by roughly 6-ft from previous conditions. The City of Billings worked on an expedited schedule to provide flood protection to the upstream residential neighborhood prior to the 2019 spring runoff. The presentation will cover the unique design challenges of the project and how DOWL and the City of Billings used Construction Manager / General Contractor (CM/GC) Project Delivery to meet the aggressive schedule for project completion.

10:30 am - 10:45 am **Morning Break**

Courtesy of Allied Engineering & HDR

10:45 am – 11:15 am **Montana LiDAR: Where to Get It and How to use it.**

Katie Shank
DNRC Flood Hazard GIS Specialist
Troy Blandford
MT State Library

This presentation will go over where lidar has been collected in the state, where people can access/obtain that data, and examples of how lidar can be used. An overview of the State Library's Montana Lidar Inventory web application will show users how to navigate the site and obtain data. There will also be Montana examples of how lidar is being used from how the DNRC Water Operations Bureau uses it in floodplain mapping, to land cover classification.

11:15 am – 11:45 am **Navigating the Alphabet Soup of LOMC's**

Tiffany Lyden, CFM
MT DNRC
Pam Vosen, CFM
Fergus Co. FPA

LOMA, LOMR-F, LOMR, CLOMR-F, LOMR-FW, CLOMA, MT-1, MT-2….. What do they all mean? And when do they apply? This presentation will provide an overview of FEMA Letter of Map Changes (LOMCs. yes, another acronym!), including what they are, the purpose behind them, and when they are needed or required. We will give a high-level overview of how LOMCs are submitted, reviewed and finalized, and how to search FEMA's Map Repository or the National Flood Hazard Layer to find LOMCs that have been issued, and why you might need to look for them. The presentation will also discuss ways to understand and explain Letters of Map Change to landowners, elected officials, and clients, without using confusing acronyms or jargon.

Adjourn