Association of Montana Floodplain Managers
26th Annual Conference

Holiday Inn Great Falls Conference Center | Great Falls, MT | February 24th – 27th, 2026

GREAT FALLS, GREATER RESILIENCE: NAVIGATING THE FLOODPLAIN FUTURE

AGENDA

Tuesday, February 24 - Preconference DNRC Workshops

9:00 AM	-	4:30 PM	**Elevation Certificate (EC) Workshop - How to complete the FEMA EC for everyone** - Hosted by the Montana Department of Natural Resources & Conservation, Sponsored by Association of Montana Floodplain Managers. **See flyer for registration and more information at this link: https://mtfloods.org/wp-content/uploads/2026/01/EC-Workshop-Flyer-2026-02-MT.pdf** *REGISTRATION IS LIMITED TO THE FIRST 40 REGISTRANTS. PRIORITY WILL BE GIVEN TO MONTANA REGISTRANTS – ALL OTHERS WILL BE PLACED ON A WAITLIST. INSTRUCTOR: Del Schwalls, PE*, CFM | President, Schwalls Consulting LLC (*PE in FL, AL, GA, SC) CEU/PDU/PDH: CFM – 6, CFS – 6, PLS – 6, PE – 6	**Del Schwalls, PE, CFM** **President** **Schwalls Consulting LLC** **Traci Sears, CFM** **MT National Flood Insurance Program (NFIP) Coordinator** **MT Department of Natural Resources and Conservation (DNRC)** **MT DNRC Regional Engineers**
2:00 PM	-	5:00 PM	**Floodplain Basics and Beyond** - Variances, Appeals, Emergency Notifications, disasters, recovery, and current floodplain management cases. Come to learn and interact upon these floodplain management topics that occur in Montana communities.	**Shylea Wingard** **Community Assistance Program (CAP) Floodplain Planner** **MT DNRC** **Traci Sears, CFM** **MT National Flood Insurance Program (NFIP) Coordinator** **MT Department of Natural Resources and Conservation (DNRC)**

Tuesday, February 24

2:00 PM	-	5:00 PM	**Registration - Atrium Lobby**
4:00 PM	-	8:00 PM	**Exhibitor Setup - Trailsend**
5:00 PM	-	7:00 PM	**AMFM Board Meeting - Russell**

Wednesday, February 25 Conference Sessions – Aronson/Mansfield

8:00 AM - 5:00 PM **Registration - Atrium Lobby**

9:00 AM - 9:10 AM **Welcome & Housekeeping** **AMFM Board Members**

9:10 AM - 9:45 AM **Flood Data and Tools from the U.S. Geological Survey**

Seth Siefken, PE
Hydrologist
United States Geogical Survey (USGS)

Accurate estimates of flood-flow frequency are essential for accurate delineation of floodplains along rivers and streams. The U.S. Geological Survey (USGS) publishes a variety of data products for estimating flood-flow frequency. Flood-flow frequency estimates at streamgages are one of the primary flood-flow data products. These estimates are derived from observed streamflow data at specific locations where the USGS maintains streamgages. In many cases, these estimates can also be used to compute flood risk at upstream and downstream locations on the same stream by adjusting for drainage area. For locations far away from a streamgage, USGS publishes regional regression equations which can be used to compute flood discharge associated with selected flood-flow frequency. In Montana, two sets of regional regression equations are available. One set uses drainage basin characteristics such as drainage area, basin elevation, and landcover characteristics to estimate flood-flow discharge. The other set uses measured channel widths to estimate flood-flow discharge. The USGS StreamStats application has tools to automate the process of solving the regional regression equations, allowing users to easily estimate statistics at most locations in Montana. StreamStats can also be used to access streamgage flood-flow frequency estimates and other USGS data. This presentation will provide an overview of the available USGS flood data and tools described above, as well as updates on projects to improve flood risk estimates for Montana.

9:45 AM - 10:20 AM **Montana Silver Jackets – Many Partners, One Team. Statewide Collaboration to Reduce Flood Risk Throughout Montana.**

Andrew Long
Deputy State Hazard Mitigation Officer (DSHMO)
MT Department of Emergency Services (DES)

Sage L Joyce
Montana Regulatory Chief
U.S. Army Corps of Engineers

Introduction to the Montana Silver Jackets team and an overview of the on-going and recently completed projects throughout the state.

10:20 AM - 10:40 AM **Morning Break - Trailsend** ***Courtesy of Great West Engineering***

10:40 AM - 11:15 AM **DNRC's Floodplain Mapping Program Overview**

Doug Brugger, PE, CFM
Water Operations Bureau Chief
Monica Conlin
Flood Hazard Hydrologist
MT DNRC

This presentation will give an update on DNRC's active mapping projects, with information on how communities can best manage their existing program while a mapping update is in-progress.

11:15 AM - 11:50 AM **Busy Bee Acquisition**

Sara Hartley, State Hazard Mitigation Officer (SHMO)
Andrew Long, DSHMO
MT DES
Justin Russell, Musselshell County DES

Montana Disaster & Emergency Services (DES) and Musselshell County DES will present the state's first utilization of Swift Current Funding under FEMA's Flood Mitigation Assistance (FMA) program. This case study highlights the Busy Bee Diner acquisition in Roundup, an effort to reduce flood risk through voluntary property acquisition.
The session will provide:
- Historical context of the Busy Bee Diner and its significance to the Roundup community
- An overview of Swift Current, FEMA's streamlined application process designed to accelerate FMA funding
- Program highlights including funding mechanisms, eligibility, and benefits for local jurisdictions
- Timeline insights, showing how Musselshell County DES successfully navigated the program from start to acquisition

By sharing lessons learned, challenges, and outcomes, this presentation will demonstrate how Montana communities can leverage Swift Current and other funding to strengthen resilience, protect residents, and preserve local heritage while mitigating flood hazards.

11:50 AM - 1:00 PM **Lunch on Your Own**

1:00 PM - 1:15 PM **Welcome and Opening Comments** **AMFM Board Members**
Annual Update from the AMFM Board

Welcome and opening comments from current AMFM Board Members. The board will also provide an annual update regarding ASFPM Sponsorship, ASFPM 2025 Conference Report, FPA Scholarship, Brightways RISE Challenge, and voting information for the 2026 AMFM Board Members.

1:15 PM	2:00 PM	**Keynote Speaker: Challenges and Changes in the Future of Flood**	**Del Schwalls, PE, CFM** **President** **Schwalls Consulting LLC**

Since the NFIP was established almost 60 years ago, the approach to floodplain management has been largely stagnant. While the available tools for assessing flood risk have improved exponentially, our approach to identifying the risk and protecting our citizens is largely based on an assumption that once mapped, the risk will not change. We discuss increasing the flood resiliency of our communities but continue to permit development without the future in mind. Instead of building back better after a disaster, we build back and hope it will not happen again. At the same time, our regulatory framework and administrative requirements often do more to hinder effective floodplain management and resiliency, rather than enabling staff to better protect those we serve. This presentation will discuss problems from around the country that floodplain managers face constantly, including five Florida communities who were almost suspended from the NFIP due to miscommunication and administrative mistakes, all the while recovering from the third costliest disaster in US history.

2:00 PM	- 2:50 PM	**Building Resilience in Musselshell County: A Partnership Approach to Floodplain Management**	**Courtney Long, CFM, Planner** **Lisbeth Olsen, Project Engineer** **Great West Engineering**

Following the impactful 2011 floods along the Musselshell River, Musselshell County launched a proactive and sustained effort to enhance community resilience and bolster public health and safety within the Musselshell River corridor. The success of this long-term initiative is founded on strategic, multi-sector partnerships that span local and state governments, federal agencies (including FEMA), floodplain managers, residents, and private firms.

This presentation will explore the past, present, and future projects within the 'Roundup Reach' extent of the Musselshell, including:

- FEMA-funded acquisitions and mitigation to remove structures and reduce future risk.
- Cleanup of an abandoned mine site within the floodplain and conversion to open space.
- Public outreach and education to foster a culture of preparedness.
- The integration of recreation and green space planning into mitigation efforts.
- Feasibility studies guiding future, sustainable floodplain management practices.

By detailing these diverse projects, we can demonstrate how collaborative governance, strategic funding, and resident engagement can transform a community from post-disaster recovery to long-term, proactive floodplain management and resilience.

2:50 PM	- 3:15 PM	**DNRC Grant Opportunities for Floodplain-Related Projects**	**Michelle McNamee** **RRGL Program Manager** **Samantha Treu** **RDG Program Manager** **MT DNRC**

Montana DNRC offers several grant opportunities of interest to floodplain professionals through its Renewable Resource Grant (RRG) Program and Reclamation and Development Grants (RDG) Program. This presentation will highlight natural resource funding opportunities for local governments, with an emphasis on the RRG and RDG Programs' 2026 project and planning grant application cycles. Individuals interested in learning how floodplain projects may be funded through these programs are encouraged to attend.

3:15 PM	- 3:35 PM	**Afternoon Break - Trailsend**	***Courtesy of HDR Engineering Inc.***

3:35 PM	- 4:00 PM	**Montana LiDAR for LOMA**	**Troy Blandford** **GIS Analyst - Water Information Lead** **Meghan Burns** **GIS Analyst** **Montana State Library** **Sarah Smolka Joyce, Flood Hazard GIS Specialist** **MT DNRC**

This presentation introduces the Montana Lidar for LOMA web application, a collaborative tool developed by the Montana State Library and the Montana DNRC Floodplains Program. The app enables users to determine if their property qualifies for a LOMA using lidar-derived, certified contours. Attendees will learn how to compile the necessary documentation for a LOMA submission. With expanding coverage of lidar across Montana, this tool empowers property owners and floodplain administrators to make decisions using high-accuracy elevation data. The session will include a demonstration and guidance on navigating the application.

4:00 PM	- 4:25 PM	**DNRC Awards**	**Shylea Wingard, CFM, MS** **MT DNRC Floodplain Planner** **Traci Sears, CFM** **MT NFIP Coordinator** **MT DNRC**

Recognition of floodplain work and management throughout the state.

4:25 PM	- 5:00 PM	**Jeopardy! Round 3 "No Caption Needed"**	**Ryan Murphy, PE** **Peri Turk, PE** **MT DNRC Regional Engineers**

WE'RE BACK!!! This presentation will provide information related to floodplain permitting and how to effectively get through the process. With the influx of new floodplain administrators, we wanted to provide some insight into the floodplain permitting process such as resources available, what to expect, and roles and responsibilities. The presentation will be structured as a Jeopardy game with three contestants (floodplain administrators and/or engineers). The topics that will be included are what's new in 2026, what's in your ordinance, application for Best Available Information, enforcement, and lastly the age-old practical application. The goal for this presentation is for the audience to go home with a bit more knowledge about things to look for in a permit, what to expect, and what resources are available to them. And also make it fun!

6:00 PM	- 9:00 PM	**Evening Social - Aronson/Mansfield**	***Courtesy of KLJ Engineering***

Thursday, February 26 Concurrent Sessions A (General) – Aronson

9:00 AM - 9:50 AM **Floodplain Administrators Interactive Panel Discussion**

Amanda Cooley - Powell County
Sean O'Callaghan - Gallatin County
Larry Schock - DNRC

This session represents an opportunity to engage in a lively and interactive discussion with local floodplain administrators from several jurisdictions and a DNRC regional engineer about current issues with floodplain management. Floodplain administrator panelists represent communities that have or are facing a variety of different floodplain management issues, and all have different experience levels, perspectives on floodplain management, and ways of addressing the challenges they face in their jobs. Larry Schock helps support floodplain management as a regional engineer for DNRC by providing technical engineering assistance to Montana communities and local floodplain administrators. Attendees are encouraged to bring questions and topics related to floodplain management for the panel to discuss.

9:50 AM - 10:30 AM **Weathering the Transition: Ensuring Continuity of a Floodplain Program/Project Through Change**

Raina Leavens
Environmental Planner
Cascade County

Cascade County has undergone several employee/manager changes throughout my time as a Floodplain Administrator and Certified Floodplain Manager. I would like to present on the challenges these changes can pose and some of the lessons I have learned. The biggest takeaways for the audience would be to ensure they continue conversations related to the Floodplain and projects they may be working on. Try to maintain procedural manuals, have a good filing system for project documents and consistent up to date forms. I would also like for this to open discussion on issues that other Floodplain Administrators/Professionals have seen. Turnover is so common in our field.

10:30 AM - 10:50 AM **Morning Break - Trailsend** ***Courtesy of Pioneer Technical Services Inc.***

10:50 AM - 11:25 AM **Enhancing Floodplain Mapping Communication and Public Outreach for City Floodplain Administrators**

Ben Rood, PE, CFM
Garrett McKenzie, EIT
WSP

Effective floodplain management hinges on clear communication and robust public outreach. Recent advances in GIS technology, particularly the deployment of online webviewers, have transformed how communities access and understand flood risk data. These tools allow city floodplain administrators to present complex spatial information in an accessible, interactive format, fostering transparency and dialogue among residents, local governments, and technical experts.

Key strategies for successful outreach include:
- Interactive Webviewers: Online platforms consolidate floodplain mapping layers, enabling stakeholders to visualize risk areas, submit geolocated comments, and access historical data.
- Stakeholder Engagement: Building strong relationships with local staff and officials is essential. Outreach sites and workshops provide ongoing access to mapping results, meeting materials, and educational resources.
- Public Meetings and Communication Toolkits: FEMA's Flood Risk Communication Toolkit offers templates for designing effective public meetings, crafting clear messages, and leveraging social media.
- Education and Outreach Models: Hands-on tools, such as floodplain simulation models and guided tours, make flood risk tangible for residents.

By integrating these strategies, city floodplain administrators can empower their communities to better understand flood risks, participate in mitigation planning, and build resilience. The presentation will showcase practical examples, including webviewer deployments and outreach initiatives, and provide actionable guidance for improving communication and engagement in floodplain management.

11:25 AM - 12:00 PM **Position Your Community for CRS Success: Effective Strategies that Increase Credits and Improve Resources**

Mikayla Zeitlin
Resilience Planner
Dewberry

FEMA's National Flood Insurance Program (NFIP) Community Rating System (CRS) is a voluntary program that encourages and rewards communities for efforts that exceed minimum national standards for floodplain management. CRS assigns credit points for various activities, which are totaled to determine CRS Classes that equate to discounted flood insurance premiums. The higher the class, the larger the discount, making flood insurance accessible to a greater number of property owners. CRS verification visits (occurring every 5 years) determine whether efforts are adequately sustained and whether previously earned credit points are still valid.

Credit points can be obtained, retained, or even increased with the right preparation. To keep flood risk and safety initiatives up to date, many CRS communities have found effective ways to review codes, regulations, and resources that enhance flood awareness and preparedness within their community.

Join our session to learn some of the best ways to achieve CRS credits and make the most of your community's flood safety initiatives. Covering in-depth policy reviews, literature inventories, website redesigns, and digital asset accessibility, this session will provide an overview of actions that have helped communities increase ratings and ensure that credit is given where credit is due. This session will also highlight activities that meet 508 compliance standards—an ever-growing need (and, in many cases, a requirement) in the field of flood safety and emergency preparedness.

12:00 PM	-	1:00 PM	**AMFM Luncheon - Aronson/Mansfield** *(All conference registrants welcome)* **AMFM Membership Voting**	***Courtesy of Morrison-Maierle, RESPEC, and WSP***
1:00 PM	-	1:35 PM	**Freein the Fishes: AOP Design and Open Bottom Culvert Scour Calculations**	**Raychel Hoerner** **Great West Engineering**

The Aquatic Organism Passage (AOP) design approach for hydraulic structures is part of an evolving field that primarily aims to improve fish passage. AOPs were first implemented near fishing communities and are expanding in popularity due to their notable successes and ancillary benefits. AOP structures are designed to meet our needs for resilient infrastructure while keeping ecological systems connected and floodplains engaged.

AOPs are often designed as open bottom culverts. The open bottom culverts allow for typical stream channel configurations to be maintained through the structure, mimicking a site's natural conditions. Typical stream channel configurations usually include channel banks designed to convey the bankfull flow and floodplains that activate at higher flow intervals. These components, along with appropriate channel grades, streambed materials, and other hydraulic parameters, keep aquatic organisms happy.

But what makes humans happy? Resilient infrastructure. AOPs are built to meet desired design lives, flood interval conveyance, and other site-specific requirements. One critical design component is scour prevention.

The FHWA's HEC-18 publication is the leading public guidance on calculating scour at open bottom culverts. However, the official methods described in Section 6.9 – Scour at Open-Bottom Culverts have limitations. These equations were developed in studies that focused on systems with low channel gradients and very fine stream bed materials, unlike many of the project sites where AOPs are implemented.

Another method for estimating scour is through the use of the Lower Vertical Adjustment Potential (VAP) line. The VAP line approximates the grade between the lowest likely elevations along the thalweg of a stream channel, in the absence of a barrier. Both the HEC-18 and VAP line scour estimation methods are limited in application.

1:35 PM	-	2:00 PM	**Miller Creek - Treece Project, Successfully Permitting a Small-Scale Project**	**Tyler Phelps, PE, Coldwater Engineering** **Radley Watkins, Missoula Conservation District** **Gretchen Watkins, Clark Fork Coalition**

Small-scale stream restoration and bank stabilization projects are subject to the same regulatory requirements as large-scale projects, while often having to operate on very tight budgets. A large number of potential small-scale projects exist in Montana, with nearly all potential projects residing on private lands. Collectively, these projects represent the potential to have a significant and positive impact in terms of habitat improvement and increased flood resiliency. However, pre-construction costs scale poorly, resulting in these projects becoming top-heavy and often economically unviable.

The Miller Creek – Treece Project is an example of a successfully designed and permitted small-scale project. The presentation would highlight the project challenges, solutions, and timeline, which are typical of similar small-scale projects, with the intent of showcasing the project as a success story and encouraging others to pursue similar projects. The project proposed to remove a derelict flume which had developed a scour hole and resultant grade drop. Proposed conditions intend to improve these degraded conditions by installing a series of step structures, in addition to providing for an improved channel shape. Furthermore, the project was located in a Zone AE floodplain with a designated Floodway, requiring "no-rise" to the Base Flood Elevation.

The project was largely successful due to a proactive collaboration between a non-profit, Conservation District, and consultant. Through careful planning and local support, the pre-construction phase of the project was able to be precisely scoped and executed.

2:00 PM - 2:25 PM **Allison and Ericson Watershed Stream Restoration**

Andrew Graham, PE
Allied Engineering Services, Inc.

Project Goal : Remove small mining dams constructed during the gold rush that pose a threat to downstream habitat.

Initial soil testing of the site showed elevated concentrations of heavy metals. These levels then changed our recommendations for remediation alternatives. Our approach was to remove largest dams and leave most contaminated dam alone. Once design was complete we had to address comments from the public including concerns for downstream contamination. These included loss of the dam ability to hold water, sediment transport downstream and amount of disturbance to area. We had to address all comments from the community and design a project that would reduce the likely hood of contamination downstream.

2:25 PM - 3:15 PM **Flood insurance ins and outs**

Jared Schroeder
Code Compliance Technician II
Flathead County Planning and Zoning

I want to go over flood insurance, the life of a flood insurance policy from beginning to end, the various policy forms and when they apply. I also want to go over FEMA's definition of a flood as well as FEMA's definition of a building and why that matters when it comes to flood insurance. Insurance agents face a lot of pain when writing a flood policy and they often rely on an EC when it's submitted. Incorrect EC's can lead to frustrated insurance agents, delayed or missed closing dates and frustration for the insured/home buyer. In this I'll go over what the EC should look like and different hints and tricks that make not only the agent's life easier but also the underwriter's life easier. While flood insurance does come from FEMA and is regulated by FEMA and the NFIP it's very different then floodplain management but yet they are intertwined. Without floodplain management a community can face not having the ability to participate in the NFIP which means most banks/lenders will not approve a home loan for a structure in a SFHA. Most people don't think about floodplain in any capacity and it's either when they receive correspondence from me in my current position that something is wrong on their property or their bank advises them that a flood insurance policy is required.

3:15 PM - 3:35 PM **Afternoon Break - Trailsend** ***Courtesy of Water & Environmental Technologies (WET)***

3:35 PM - 4:25 PM **Documenting Floodplain Decisions, and Why it Matters When You End Up in Court**

Sean O'Callaghan
Floodplain Administrator
Gallatin County Department of Planning & Community Development

Presentation highlights a controversial project in Gallatin County where a decision to issue a floodplain permit was challenged and went all the way to the Montana Supreme Court. The presentation will focus on the reasons that Gallatin County's decision was upheld.

4:25 PM - 5:00 PM **Federal agency coordination for the operation of Montana Section 7 Dams**

Ben Sterbenz
Water Control Engineer
U.S. Army Corps of Engineers

Federal dams authorized under Section 7 of the Flood Control Act represent a unique collaboration between the U.S. Army Corps of Engineers (USACE) and the Bureau of Reclamation (USBR). This presentation will outline the legislative authorities that govern both agencies' water resource objectives and define how Section 7 dams in Montana fit within those frameworks. Attendees will gain an understanding of where Section 7 projects are located within the state of Montana and how operational responsibilities are shared or transferred between USACE and USBR depending on project purpose and current hydrologic conditions. The discussion will highlight key aspects of federal coordination that ensure these jointly operated reservoirs meet flood control, water supply, and other objectives while supporting state and local partners.

6:00 PM - 9:00 PM **Evening Social - Aronson/Mansfield** **Courtesy of DOWL**

Thursday, February 26 Concurrent Sessions B (Technical) – Mansfield

9:00 AM - 9:45 AM **Agile and Efficient Field Reconnaissance and Data Collection for Flood Control Studies in Maricopa County, Arizona**

Ryan Halligan P.E., CFM
Black & Veatch

As climate variability intensifies and urban development accelerates across the arid Southwest, the demand for precise, efficient, and adaptive flood control studies has never been greater. Recent innovative data collection methods and implementation strategies efficiently produce practical data sets over traditional field reconnaissance and data collection methodologies, which is critical to efficiently and effectively communicate flood hazards in communities.
This presentation explores the integration of off-the-shelf ESRI products and mobile data collectors utilizing high accuracy GPS to develop live GIS data that can be applied for modeling purposes to identify flood hazards and efficiently develop a flood-hazard mitigation plan. Additional benefits are created from GIS repositories to assist project stakeholders in the management of municipal-owned assets. Case studies highlight successful applications of these technologies in recent District ADMS/P's and infrastructure assessment projects. Attendees will gain insights into best practices for integrating these tools into their own workflows, as well as lessons learned from field implementation, data management, and inter-agency collaboration. The presentation will also look into the future regarding how AI-assisted hydrologic modeling can be integrated into the workflow of civil engineering flood control studies. This session aims to inspire a broader adoption of smart and efficient reconnaissance strategies that support resilient, data-driven flood hazard risk reduction in the face of evolving environmental challenges.

9:45 AM - 10:30 AM **Modernizing the USACE Permitting Process**

Sage L Joyce, Montana Regulatory Chief
Jenn Bergner, Project Manager
U.S. Army Corps of Engineers

In 2024, the U.S. Army Corps of Engineers introduced its new Regulatory Request System (RRS), an online application portal that allows the public to submit permit applications and other information when requesting permission to dredge, fill or conduct activities in jurisdictional wetlands and waters of the U.S. RRS allows the public to submit individual and general permit applications – including Pre-Construction Notifications (PCN); requests for jurisdictional determinations and pre-application meetings; report suspected unauthorized activities (anonymously if desired) and now, on-line and immediate confirmation that unregulated activity does not require a USACE permit (No Permit Required letter) using easy-to-follow online submission forms. Applicants can also track the status of their requests using a user-friendly dashboard.
USACE personnel will demo key features, tools and resources available in RRS; highlight the benefits of RRS as well as common mistakes and how to avoid them; and demo the 'No Permit Required' module. This new module allows the public to answer a series of questions about their proposed activity to determine if authorization from USACE is required. Questions are provided in stepwise sequential order, and if the information provided through the RRS results in a response that no permit is required for the proposed activity, users will immediately be provided correspondence.
USACE personnel will also be available for meeting one-on-one if requested.

10:30 AM - 10:50 AM **Morning Break - Trailsend** ***Courtesy of Pioneer Technical Services Inc.***

10:50 AM - 11:25 AM **Irrigation Canals in Flood Plain Studies**

Joel Cahoon, PE
Allied Engineering Services, Inc.

Irrigation canals or ditches commonly occur in the arid West where irrigated agriculture and natural streams coexist. Irrigation canals can be significant features relative to flood risk, with diversion structures usually in the flood plain, flow generally parallel to river valleys, significant terrain interruption associated with the canal berms, and frequent hydraulic structures to facilitate vehicle access to fields and pastures. Alternately, there are cases where canals do not contribute to flood risk due to the limited conveyance of the canal, rapid divergence of the canal from the river elevation, structural features or terrain modifications to return water to the river, or limited connectivity between the canal and the river at the headgate. Examples from the Yellowstone River and tributaries in Park County are used to demonstrate the process for estimating flood risk and generate discussion of appropriate model strategies.

11:25 AM - 12:00 PM **Closing the Gap: Using FEMA's 2D Floodway Guidance for Zone A Permitting in Montana**

Jacob Lacy EI
Marika Nawrocki, PE
RESEPC Company LLC

Floodplain development in FEMA Zone A areas is flexible but can be challenging. Floodplain development regulations are written for one-dimensional (1D) modeling for encroachment analysis, yet two-dimensional (2D) models are increasingly necessary to better simulate complex flood flows. Unlike 1D models, 2D simulations often produce localized increases in water surface elevations that exceed the 0.5-foot limit for Zone A areas in Montana, even if overall impacts are negligible. Current floodplain regulations do not address this nuance, creating a disconnect between advanced modeling practices and compliance requirements.
However, FEMA's November 2023 Floodway Analysis and Mapping Guidance presents an approach for developing 2D floodways that acknowledges the nuances with 2D modeling, with weighted averaging and other relaxed criteria to define surcharge limits. While this guidance is specific to 2D floodway development, the concept of a floodway aligns with the concept of allowable encroachment in Zone A.
This presentation demonstrates how the FEMA 2D floodway methodology was adapted to evaluate compliance for two Montana projects requiring floodplain permits in Zone A areas. The presentation will provide an overview of the two projects, the coordination with local and state regulators, and the methods and results of the encroachment analyses.
The case studies illustrate a practical framework for engineers and floodplain administrators to reconcile regulatory intent with modern modeling tools. Attendees will gain insight into applying FEMA's 2D guidance to support permitting decisions, improve consistency, and advance best practices for floodplain management in Zone A areas.

12:00 PM	-	1:00 PM	**AMFM Luncheon - Aronson/Mansfield** *(All conference registrants welcome)* **AMFM Membership Voting**	***Courtesy of Morrison-Maierle, RESPEC, and WSP***
1:00 PM	-	1:35 PM	**Pending/TBD**	

1:35 PM - 2:00 PM **2D Floodways: Challenges and Lesson Learned**

Utsav Parajuli
AECOM

The delineation of new two-dimensional (2D) floodways in Tooele County, Utah, as part of a Risk MAP update, presented technical challenges stemming from topographic issues and software limitations. This presentation delves into the comprehensive process undertaken to accurately define the floodway, highlighting the details of 2D technical modeling and mapping challenges that emerged throughout the project.
At the outset, the base flood modeling revealed widespread shallow flooding, formation of islands and multiple split flows traversing the overbank areas, complicating the floodway delineation. The project team was required to perform on average over 30 iterations, each involving meticulous adjustments to the floodway polygon and the strategic creation of islands to accommodate divided flow paths. These adjustments were essential to comply with floodway guidance and regulatory requirements. Seemingly minor modifications to the floodway polygon were often needed which shows the high sensitivity of the modeling process. Recognizing the multiple iterations and the time required for each round of modeling and verification, the team developed a composite workflow that incorporated automation, which significantly streamlined the 2D floodway iteration cycle.
This presentation will provide an in-depth examination of the obstacles encountered and the lessons learned during the delineation of 2D floodways in Tooele County. It will cover the technical aspects of 2D floodway modeling, including the differentiation between split flows and floodway islands, and will offer a detailed, behind-the-scenes perspective on the iterative development process. Attendees will gain valuable insights into the challenges of floodway mapping in complex hydraulic environments and the innovative solutions employed to overcome them, with practical guidance for future modeling efforts.

2:00 PM - 2:35 PM **USACE use of models to forecast reservoir conditions and predict impacts for basins within Montana**

Ben Sterbenz
Water Control Engineer
U.S. Army Corps of Engineers

This presentation will explore how integrated software models utilize modeling tools applied to specific dam projects to forecast reservoir conditions and quantify project performance in Montana. Using meteorological, hydrologic, and hydraulic software such as HEC-MetVue, HEC-HMS, HEC-ResSim, HEC-RAS, and HEC-FIA, the modeling framework produces key outputs including gridded precipitation, watershed runoff, reservoir operations, inundation mapping, and estimates of economic impacts. The presentation will demonstrate how these tools work together to compute total flood damage reduction (FDR) at specific projects by comparing no-project scenarios to observed or simulated conditions. Results from a sample FDR simulation will be reviewed to illustrate how operations and post-event analyses support both operational decision-making and project justification for a basin within the state.

2:35 PM - 3:15 PM **Scour Critical to Scour Resilient: Mitigation Strategies for Duck Creek Bridge**

Meagan Key, PE
Justin Evertz, PE
Great West Engineering

The Duck Creek Road Bridge over the Yellowstone River, located southwest of Billings, Montana, has been identified by the Montana Department of Transportation as scour critical, necessitating a comprehensive plan of action. Constructed in 1992, the five span concrete girder bridge has experienced progressive foundation exposure and undermining due to dynamic river hydraulics, channel migration, debris loading, and repeated high flow events, including the record 2022 flood. Great West Engineering, on behalf of Yellowstone County, conducted detailed site surveys, hydrologic and hydraulic modeling, and an alternatives analysis to evaluate scour countermeasures.

A two-dimensional SRH-2D hydraulic model was developed and calibrated with imagery from the 2022 flood, incorporating updated USGS peak flow analyses. Results confirmed severe flow angles of attack and high velocities at multiple piers, with Pier 2 exhibiting the most critical scour conditions. Historical inspections corroborated ongoing foundation exposure and voiding at all piers.

This analysis was central in evaluating alternatives for scour mitigation, as closing the bridge was not an option for the County. To expedite implementation, Great West assisted in hiring a general contractor/construction manager. This project delivery approach was critical to evaluating constructability throughout the design process. Construction is currently underway and is targeted for completion before 2026 spring runoff.

3:15 PM	-	3:35 PM	**Afternoon Break - Trailsend**	***Courtesy of Water & Environmental Technologies (WET)***

3:35 PM	-	4:10 PM	**Grant Greek Floodplain Restoration Case Study**	**Andrew Carter** **HDR**
			This presentation will provide an overview of the Grant Creek Floodplain Restoration Project. The presentation will summarize the project goals of consolidating a wide area of sheet flow into a functional floodplain and touch on the site history and previous attempts at bringing this project to fruition. The presentation will provide a general overview of the design features and the construction completed to date. The presentation will also cover the challenges that were encountered and the lessons learned during the project including: the hydraulic modeling challenges of modeling a 2D system in a 1D model, the presence of an uncertified levee, balancing the interests of multiple parties affiliated with the project, the desire of a single CLOMR/LOMR to accommodate multiple phases of construction, and the addition of the ESA requirements to the CLOMR/LOMR process.	
4:10 PM	-	4:45 PM	**Reservoir Reflections: Using Risk Assessment Data to Communicate Reservoir Placement in South Louisiana**	**Jerri Daniels** **Dewberry Engineers, Inc.**
			Four concept reservoir projects were investigated in response to the 2024 Louisiana Senate Concurrent Resolution 79 (SCR79). Each would present water supply and recreational opportunities but mostly provide relief from flooding in the flat coastal plains of southern Louisiana. Communication of the benefits of the reservoirs to decision makers is done using risk assessment data. How many homes would be removed from the floodplain during specific rain events? How would historical events have looked differently if these reservoirs been in place? This presentation will focus on how to present complicated data in a manner that can be easily understood by all when selecting where to put a large flood risk reduction structure.	
4:45 PM	-	5:00 PM	**Open Discussion: Technical Q/A, Modeling topics, Floodplain Regulations**	**AMFM Board Members**
6:00 PM	-	9:00 PM	**Evening Social - Aronson/Mansfield**	**Courtesy of xxxxxx**

Friday, February 27 Conference Sessions – Aronson/Mansfield

9:00 AM - 9:35 AM **Real-Time Decision Support for Flood Recovery-Insights from Lincoln Flooding**

Traci Sears, CFM
MT NFIP Coordinator
MT DNRC

Overview of trying to conduct Substantial Damage Estimates in between storm waves in Lincoln County.

9:35 AM - 10:10 AM **Mexico Beach: A Story of Recovery for a Small Community**

Del Schwalls, PE, CFM
President
Schwalls Consulting LLC

When recovering from a disaster, communities and residents often have short memories, and the lessons that should have been learned are quickly forgotten under the premise that it will never happen again. Although this presentation is about a coastal community, the implications translate all too well to Montana and other inland states. In October 2018, Hurricane Michael made landfall as a Category 5 hurricane at Mexico Beach, Florida, the strongest storm to hit the area in over 150 years. By the time the wind and 14 ft storm surge had abated, most of this small coastal haven had been wiped off the map, with nothing remaining but debris and bare concrete slabs. Since then, this close-knit community of residents, business owners, and perennial vacationers have been struggling to reclaim what was lost. This presentation will look at Mexico Beach before and after the storm, showing the severity of the devastation through photographs from the residents themselves. This presentation will discuss the regulatory framework established after the storm, the floodplain management struggles faced since, and provide an update of where the City is now and where they are headed. The presentation will discuss the recovery process, connecting real people and real stories to the headlines seen in the news, through the voice and eyes of the speaker Del Schwalls, whose family and friends lived it.

10:10 AM - 10:30 AM **Morning Break - Trailsend**

Courtesy of
Allied Engineering Services, Inc.
Dewberry
Montana State Library
NV5 Geospatial
WGM Group

10:30 AM - 11:05 AM **Unseen Flood Risk: Outdated & Unmapped Areas – Where the Map Ends**

Drew Vance PE, CFM
DOWL

Flood risk doesn't stop at the edge of a regulatory map. These gaps leave communities vulnerable to floods in areas assumed to be safe. This presentation explores the scale of unmapped waterways, why updating hydrology is critical, and real-world examples where flooding occurred outside mapped zones; or where no maps existed at all.

11:05 AM - 11:35 AM **Pending/TBD**

11:35 AM - 11:55 AM **Wrap up Discussion and Adjourn**

AMFM Board