Conference Agenda Guide

Session	Presenter Name	Organization	Title of Presentation	Abstract
0 Tuesday Training	Amanda Richardson, Peter Jackson, Deanna Wright	Ecology, IDWR, OR DLCD	Floodplain Administration Roles and Responsibilities: Everything You Need to Know to Get Started as an FPA	This training session, led by the WA, OR, and ID State NFIP Coordinators, will cover NFIP background, permitting, reading FIRMs, Elevation Certificates, inspections and compliance, recordkeeping, the tools and resources an FPA will use in their work, and communicating risk to the public and elected officials. It will cover the foundational information that an FPA needs to know for their day-to-day duties and provide resources for them to continue their learning.
A1	Heather Rogers	Washington Department of Ecology	Channel Migration Zones in Integrated Floodplain Management	Detailed Channel Migration Zone (CMZ) mapping and geomorphic studies are powerful tools in integrated floodplain management. This presentation will highlight practical applications of CMZ mapping when combined with geomorphic assessments to support multi-benefit planning and risk reduction, drawing from project examples in the Pacific NW.

Session	Presenter Name	Organization	Title of Presentation	Abstract
A2	Tyler Jantzen, PE, CFM	Jacobs	Projected Future Fluvial Hazards along the Northeast Entrance Road Corridor in Yellowstone National Park, WY	This presentation will describe the methods used to identify and characterize future projected fluvial threats in support of hydraulic modeling and assessment of future vulnerability and risk assessments. Hydrologic hazards impacting Yellowstone National Park's Northeast Entrance Road include riverine flooding, channel migration, and debris transport, all of which are linked to climate change. The magnitude of flow-generating events is influenced by the amount and timing of runoff entering drainage networks from upstream catchments. The timing and intensity of seasonal rainfall events, the timing and magnitude of snowmelt, and the amount of snowpack that accumulates in winter (as a function of temperature) all affect the timing and magnitude of surface runoff and riverine flows. This includes both less frequent, high flows and more frequent, low flows. Temperatures are projected to steadily increase (i.e., warm) over the coming century along with increases in average and extreme precipitation amounts, with a greater probability of wintertime precipitation occurring as rain instead of snow. Snowmelt is also expected to occur earlier in the year and be associated with higher magnitudes of peak runoff rates. These changes are projected to increase the exposure and vulnerability of the highway to fluvial flood hazards. Climate change projections coupled with hydraulic modeling allowed planners and designers to address future hazard exposure, and informed design decisions to improve highway resilience and performance in the face of uncertain future flood events.
A3	Bridger Banco, Kelly Flint	HDR Inc	Floodplains, farming, and fish passage	The planned construction of the Big Creek Dam in Newport, Oregon requires a fish passage waiver from Oregon Department of Fish and Wildlife (ODFW) to mitigate for loss of access to upstream habitat. To meet ODFW requirements, mitigation projects must achieve a net gain of habitat through means such as removal or modification of existing passage barriers. After identifying numerous potential mitigation sites, three existing passage barriers were selected for potential replacement: a culvert barrier on Spout Creek, and two tide gate barriers on Boone and Nute sloughs, both located in Lincoln County, Oregon. Analysis and design of proposed structures at both sites required significant coordination with state agencies, drainage districts, and individual landowners. The culvert at Spout Creek passes beneath Harlan-Burnt Woods Road in Blodgett, OR in FEMA zone A. The existing structure is a 10 ft wide 10 ft high culvert which was characterized as a velocity and depth barrier by ODFW criteria. Redesign of the culvert at Spout Creek will allow for significant reductions in backwater at the structure which currently has potential to overtop during 100-year flood events. A 2D HEC-RAS model was used to analyze the existing structure and the proposed design. Flood flows and low flow scenarios were modeled to evaluate fish passage criteria and reduction in backwater. The proposed design is a 33-foot box culvert that meets ODFW stream simulation criteria and reduced backwater depths during 100-year events by up to 10 feet and stopped overtopping of the road. Increases in WSE immediately downstream of the structure may have implications for CLOMR/LOMR in future design phases. The barriers at Boone and Nute sloughs consist of a pair of 80-year-old tide gates that regulate flow interchange between the tidally influenced Yaquina River and the sloughs. The tide gates are owned and managed by Mill 4 Drainage District (M4DD). While M4DD depends on the tide gates to maintain the agricultural land surrounding the sloughs, the tide gates have also exacerbated flooding due to past operational failures. To receive mitigation credits, the replacement tide gates must be open and passable for 51%, on average, of the annual tidal cycle, thus exposing the sloughs to tidal fluctuations and changing the flood regime (i.e. reducing peak floods and increasing average WSE). A multifaceted approach, including spreadsheet analysis, 1-D PCSWMM model, and 2-D HEC-RAS model, was used to identify and efficiently evaluate numerous tide gate operations scenarios. A GIS web map and output from the hydraulic models were used to demonstrate potential WSE changes to M4DD. Changes in flooding patterns may have implications for CLOMR/LOMR in future design phases.

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B	Austin Bernales, Casey Kramer	Bonneville Environmental Foundation	The Game of Floods	Navigating the CLOMR/LOMR process has become more complex for floodplain restoration projects. To demystify it, Pierce County, BEF, and Floodplains by Design partners created a game to make the process more approachable. In this session, we'll share why and how we built it, give a quick tutorial, and break into groups to play. It's a fun, hands-on way to learn, give feedback, and connect with fellow practitioners.
C and G	Kevin Mickey & Shane Hubbard	Indiana University / University of Wisconsin Madison	Harnessing Geospatial Technologies for Flood Risk Assessment	This workshop examines how geospatial technologies, including FEMA's Hazus software and the Flood Assessment Structure Tool (FAST), can support the assessment of riverine and coastal flood impacts. These impacts may encompass damages to buildings and infrastructure, economic losses, and other community-related factors. Such information is crucial for hazard mitigation planning and can significantly enhance disaster response efforts. The workshop will explore how these tools evaluate flood impacts and will highlight best practices for using geospatial tools to analyze risk. Presenters will offer numerous demonstrations and provide opportunities for participants to engage in discussions about the presented information.
D1	Erica Schmitz	Stantec	The Evolution and Application of Stochastic Storm Transposition in Regional Flood Frequency Analysis	Stochastic Storm Transposition (SST) has emerged as a potentially pivotal methodology in hydrology, offering a robust alternative to traditional rainfall and flood frequency analysis techniques. Developed over six decades ago, SST involves the resampling and random geospatial shifting of observed storm events to generate hypothetical yet realistic rainstorms. This method was initially conceived as a probabilistic alternative to the Probable Maximum Precipitation (PMP) approach, sharing its storm transposition characteristic but extending its utility to more typical rainfall and flood frequency analysis applications. The historical development of SST is marked by significant advancements in precipitation remote sensing, numerical weather prediction, and distributed rainfall-runoff modeling. These advancements have enhanced the accuracy and applicability of SST in various hydrological studies. Recent research highlights the integration of SST with process-based multiscale flood frequency analysis, which synthesizes the joint distributions of flood-producing meteorological and hydrological processes using distributed physics-based rainfall-runoff models In regional flood frequency analysis, SST has proven to be particularly valuable. By leveraging a catalog of historical storm events, SST effectively extends the rainfall record through probabilistic temporal resampling and spatial transposition. This approach allows for the generation of a wide range of extreme rainfall scenarios, thereby improving the estimation of flood hazards at rare frequencies. The application of SST hydrologic models further demonstrates its utility in developing watershed-averaged precipitation-frequency and flow-frequency curves. This presentation will delve into the historical context of SST, its methodological advancements, and its current applications in regional flood frequency analysis. We will explore case studies that illustrate the practical benefits of SST in enhancing flood risk assessments and discuss future research directions to further refine this innovative approach.

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D2	Jeffery Budnick	WEST Consultants Inc.	From Texas to Hawaii: Alternative Gaging Equipment Enters the Market	Stream gaging data are important for many purposes including flood warning, water supply, mixing zone studies, discharge permits, model calibration, etc. In recent years, alternative gaging equipment has entered the market which offers a lower price point to entry for many users. The Texas Water Development Board has funded a Guide to educate communities about these products. The Guide will be discussed along with a case study from Hawaii.
D3	Derek Hines	Stantec Inc	Balancing Accuracy and Clarity: Tackling Flood Risk Representation in 2D Models	Floodplain mapping plays a critical role in understanding and mitigating flood risks, yet achieving accurate and seamless representation remains a significant challenge, particularly in the context of 2D modeling. Disconnected flooding – either due to shallow overflows or limitations of 2D cell sizing — introduces complexities that often make it difficult to ensure models align with real-world flooding risk. These issues stem from the inherent unpredictability of water movement, the limitations of computational grids, and the difficulty in accounting for microtopographic features. Producing floodplain renderings that effectively balance technical accuracy and clear risk communication requires sophisticated approaches. Models must capture nuanced hydrological dynamics while presenting outputs that are interpretable for a broad audience, including policymakers and the public. Achieving this involves addressing discontinuities in data resolution, managing interpolation techniques, and post-processing outputs to smooth abrupt transitions without oversimplifying the flood risk. Ultimately, the goal is to ensure that floodplain renderings not only accurately represent the physical environment but also deliver actionable insights for flood management and planning. This calls for ongoing refinement of 2D modeling techniques, integration of advanced tools for disconnected flooding scenarios, and continuous collaboration between engineers, GIS professionals, and communicators.
E	Christina Wollman (Facilitator)	Perteet	Floodplain Managers Roundtable	Facilitated discussion with floodplain managers across the region.
F1	Chris Frei (WSE) and Molly Lawrence (VNF)	Watershed Science & Engineering / Van Ness Feldman	Updates from the South Fork Nooksack River Floodplain Permit Streamlining Workgroup	The permit streamlining workgroup is a group of tribal, community, consultant, FEMA, and agency staff collaborating to improve floodplain permitting to support the timely implementation of habitat restoration projects along the SF Nooksack River in Whatcom County, WA. We'll discuss sticking points in the CLOMR/LOMR process, clarify FEMA regulations and guidance, and detail ongoing efforts to identify process improvements and to apply and document what's been learned.
F2	Heather Page	Anchor QEA, Inc	Multi-Benefit Solutions: Crafting an Integrated Plan for the Chehalis Basin	Washington's Chehalis Basin Strategy is an innovative, basin wide approach that unites many partners in a framework to reduce flood risk, recover salmonid habitat, and improve climate resilience. This presentation will review the strategy and highlight how continuous collaboration is guiding system-scale analysis that creates successful, broadly supported projects, and will guide state investment for decades to come.
H1	Cole Baldino	South Puget Sound Salmon Enhancement Group	Forests into Flow: Timberland Strategies for Watershed-Wide Flood Restoration	The Deschutes River, like many Washington rivers, has headwaters held by a single ownerâ€”Weyerhaeuser. SPSSEG partnered with WeyCo to develop a scalable floodplain restoration model that maximizes ecological gain while offering cost savings, efficiencies, and co-benefits. Due to the project's scale and the Capitol downstream, it required a CLOMR and coordination with multiple agencies. This presentation explores challenges, successes, and tips for large-scale restoration on timberland headwaters.

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H2	Kevin Zerbe	Washington Emergency Management Division	Spatiotemporal analysis of structures repetitively damaged by floods in Washington	Flooding in WA is dynamic with few datasets that capture the location of flood damage for use in state and local risk assessments. We analyzed the location of repetitive loss (RL) structures over a 45-year period and identified clusters of RL structures and claim amounts. Our goal is to quantify the relationship between RL location and claim amounts over the 45-year period and determine if this information can be used to inform statewide flood risk reduction efforts.
H3	Lauren Lumm	Forerunner	AI in Floodplain Managementâ€"Smarter Tools for Resilient Communities	Artificial intelligence is rapidly transforming public sector work, offering new ways to improve efficiency, reduce administrative burden, and enhance operations. For floodplain managers—who face growing regulatory complexity, limited staff capacity, and rising climate risks—AI offers practical tools to streamline workflows while maintaining local control and accountability. This presentation will explore how local governments are beginning to adopt AI in floodplain management to address common challenges: high volumes of documentation, time-intensive compliance tasks, and communication barriers with the public. Drawing from our experience working with over 150 U.S. communities, we'll examine tested use cases such as automated Elevation Certificate review, AI-assisted document generation, and real-time translation for public outreach. We'll also address key design principles—like transparency, security, and human oversight—that ensure AI augments, rather than replaces, professional judgment. Through this lens, attendees will learn how to evaluate emerging AI tools for their own communities. Ultimately, the session will offer a grounded, practical look at how AI can be responsibly integrated into floodplain management—not as a silver bullet, but as a way to strengthen resilience, reduce friction, and better serve residents in an era of increasing risk.
I1	Andrew Nelson	Northwest Hydraulic Consultants	A process-based river corridor width optimization approach applied to the Nooksack River	River corridors are a commonly used approach for the regulation and management of rivers; two common examples are the FEMA floodway and Channel Migration Zones. These often focus on one or two potential functions of a river corridor and may not be well suited as tools to optimize eco-geomorphic river function and flood risk reduction in a floodplain with existing roads, farms, and other infrastructure. Here we propose a new integrated approach to define a river corridor as the optimized space needed to sustain key river functions based on an understanding of the desired functions of that corridor, including both ecological functions and social functions such as flood risk reduction and infrastructure maintenance costs. Key processes are linked to channel migration and include floodplain rejuvenation and effects of constriction and confinement on channel dynamics and morphology. Quantification of these processes for a reach of the Nooksack River in Whatcom County, WA shows an asymptotic curve with rapid gains for habitat and flood protection values up to a threshold width, and additional gains requiring substantially larger corridor widths. For the example river, the optimal threshold corridor width is substantially more than its current constrained condition but much less than the width of the floodplain and channel migration zone, and appears to be feasible from a social and economic perspective considering the agriculture dominated land use of the floodplain.

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I2	Paula Harris, Whatcom County River & Flood Division and Mark Ewbank, Herrera Environmental Consultants	Whatcom County, Herrera	Allowing the River to do the Work: Analysis of Widening a Funnel in the Nooksack River	Allowing the River to do the Work: Analysis of Widening a Funnel in the Nooksack River Sediment accumulation in the Nooksack River near the city of Everson is accelerating due to a constrained river channel and it is exacerbating overbank flooding impacts that extend into Canada. This presentation describes extensive geomorphic and hydraulic modeling and analyses that Whatcom County is leading to develop design plans for river corridor widening in the Everson area. The design concept relies on sufficient removal of hydraulic constraints to allow the river to do the majority of the work to transport large amounts of fine sediments without inducing channel aggradation downstream, and it can also accomplish large-scale habitat restoration. This presentation describes practical applications of concepts described in the preceding presentation in this conference session, focusing on the context and results of analyses completed to date and next steps the County is planning to gain widespread community support for the proposed corridor widening.
I3	Kevin Coulton	Environmental Science Associates	Ford Setback Levee Preservation	The goal of this project is levee preservation, which is defined by Pierce County in their 2023 Comprehensive Flood Hazard Management Plan as maintaining the existing alignment and infrastructure and including improvements to the levee structure to increase its resistance to future damages and reduce flood risk. Preservation actions do not include changing the location of the alignment or raising the elevation of the levee profile but rather involve upsizing toe or face armoring or reducing the slope of the riverside face to add stability, such that the improvements do not encroach beyond the footprint of the existing levee or result in environmental impacts. In essence, to perform restoration work in-place to preserve the existing function and extend the life of the asset. The Ford Setback Levee is located approximately 3 miles south of Orting, Washington along the east (right) bank of the Upper Puyallup River. This non-federal levee is approximately 13,050 feet long and protects an estimated $29.3 million of property at risk. The current estimated level of protection is equal to the 5-year flood event with 2 feet of freeboard. In collaboration with Pierce County, ESA and subconsultant Cornforth Consultants assessed the existing condition of the riprap revetment along Ford Setback Levee and performed limited geotechnical field samplingof subsurface conditions. Historical records of past levee damages and trends in channel migration were reviewed to inform the analysis. A geomorphic assessment of the Puyallup River reach adjacent to the levee was conducted to estimate future trends in channel migration and locations of erosion along the levee and 2-dimensional modeling was performed to evaluate hydraulic conditions to inform design criteria. Findings from this assessment were used in the design to modify standard scour-depth and riprap-sizing equations to better account for the high excess energy conditions observed in this reach of the river with variable attack angles impinging on the face of the levee almost anywhere. Using this project as a pilot study, an initial levee rehabilitation/preservation approach was also developed to allow the County to evaluate levees county-wide and proactively identify future bank protection needs according to both river behavior and levee performance. The information learned from this study provide the County a springboard to further analyze and refine their approach to levee preservation and rock sizing methodology. This presentation will provide a summary of this work and the key findings and recommendations.

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J1	Bradley Hubbard, PE, PIA, CFM	National Flood Experts	Opening the Black Box of Risk Rating 2.0: Turning Confusion into Clarity	FEMA's Risk Rating 2.0 has introduced a new era of flood insurance pricing, bringing complexity and uncertainty to many communities. In this session, Brad Hubbard—Professional Engineer, Certified Floodplain Manager, and Licensed Insurance Agent—provides a technical breakdown of the key components driving premium changes under the new system. Rather than viewing Risk Rating 2.0 as a burden, this presentation reframes it as a catalyst for progress. Through actionable insights, derived from new technology by National Flood Experts, attendees will learn how to interpret the new rating factors, evaluate their implications, and explore how improvements in stormwater, site design, and flood mitigation can meaningfully affect risk and insurance costs.
J2	French Wetmore	French & Associates	Preparing a Floodplain Species Plan	Since 2021, the Community Rating System has provided credit for preparing a Floodplain Species Assessment (FSA) and preparing, adopting and implementing the follow-on Floodplain Species Plan (FSP). Together these credits give communities a role in identifying threatened and endangered species and determining ways to help them recover their populations, like Federal agencies do under the Endangered Species Act. These projects are not very complicated and don't require a planning committee, yet few communities have taken advantage of them. This is surprising because a Floodplain Species Plan can provide a guide for how a community can address recent biological opinions, preserve floodplain open space and protect natural and beneficial functions. Preparing and adopting a Floodplain Species Plan can provide the following benefits: - An organized and updated community program to address protection and recovery of threatened and endangered species, - An opportunity for the floodplain management staff to work with and learn from wildlife and environmental protection staff and vice versa, - 15 points for preparing an FSA, - 85 points for preparing, adopting and implementing an FSP, and - Meet a prerequisite to become a CRS Class 4. As with other CRS planning elements, the credit criteria focus on the process. CRS guidance provides a step-by-step procedure that is easy to follow. It is designed for a person who does not have specialized knowledge in endangered species. This presentation will review the rationale for the CRS credit, the planning process and sources of information and assistance so local staff can do the work. The presenter is French Wetmore, CFM, who helped FEMA develop the credit and who has helped communities prepare and receive credit for their Floodplain Species Assessments and Floodplain Species Plans.

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K1	Ryan V. Morgan	City of Star Idaho	Reducing the Flood: Slowing Development in a River Floodplain	Star, Idaho is located along the Boise River, just 16 miles downstream from downtown Boise, and is one of the fastest-growing communities in the Northwest, with a growth rate exceeding 35% over the past five years. When FEMA flood maps for the Boise River in Ada County were revised in 2003, the City of Star had only been incorporated for six years, and its population was just 2,300. At that time, 95% of the city's limits were located within one square mile—nearly half of which fell within the newly revised floodplain. By 2011, when the next mapping update began, Star's population had nearly tripled to 6,600, and four large subdivisions had been approved within the floodplain. By the time the new maps were adopted in 2019, the city had grown to approximately 11,000 residents, with four additional subdivisions located in the floodplain. By 2025, Star's population surged to over 24,000, and continued development in the floodplain has become an increasing concern. This class will examine strategies for mitigating floodplain impacts, focusing on one subdivision approved in 2004 and how the City and the Developer have worked together to revise the approved preliminary plat to make it more resilient to flooding.
K2	Luke Assink and Henry Hu	WSDOT and HNTB	WSDOT Best Practice to Address Flood Risk and Meet Local Floodplain Management Requirements	In 2013, a federal court injunction required Washington State to correct complete or partial fish barriers in Western Washington by removing state owned culverts that block access to spawning and rearing habitat for salmon and steelhead by 2030. There are approximately 1,000 culverts under state highways that are subject to the injunction. WSDOT must correct approximately 400 barriers by the year 2030 by replacing existing culverts with new crossings that restore access to habitat, allow for natural stream processes and to aid in the protection and restoration of fish populations. In this presentation, we will present challenges and opportunities on the flood risk management aspect. WSDOT's fish passage and stream restoration projects essentially eliminate significant backwater under existing conditions due to undersized culverts. Another critical project component is to install channel complexity features to provide fish habitat. As a result, in some cases, flood inundation depths and extents increase in the vicinity of the project area even though the project does not alter the natural water course. The flood risk in these potentially affected areas is defined at a range of levels from unmapped by Federal Emergency Management Agency (FEMA) to a mapped floodway. Floodplain management requirements for local jurisdictions vary significantly, some of which are significantly beyond the typical FEMA National Flood Insurance Program requirements. We will present case studies to demonstrate approaches and share successes WSDOT has had to apply for CLOMRs and challenges in obtaining local floodplain permits.

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K3	Tim Bedford	Jacobs	Lessons from the `Flood Triangle`: Resilient Flood Mitigation Strategies and Flood Risk Communication on the I-39/90/94 Corridor Study	Two interstates and one state highway all intersect on the broad flat alluvial plain of the Wisconsin River near the confluence of the Baraboo River, a significant tributary. Known by local agencies as the “flood triangle,” the area is one of the most flood prone in the state. Over the past 30 years, the flood triangle has experienced repeated flood events, damaging Wisconsin Department of Transportation (WisDOT) highways, and disrupting essential services and the traveling public. Both I-90/94 and I-39 carry over 20,000 vehicles per day, making both critical to the highway inventory. In June 2008, the Baraboo River experienced an unprecedented >500-year event that closed 40 miles of I-90/94 from WIS78 interchange to WIS82 in Mauston for more than five days. As part of WisDOT’s I-39/90/94 corridor study, Jacobs partnered with WisDOT to characterize the existing flooding in the triangle, develop a resilient strategy to minimize overtopping of I-39 and I-90/94, and minimize adverse impacts to adjacent land owners. The regulatory Special Flood Hazard Area (SFHA) in the flood triangle is largely in the floodway and does not consider the downstream impacts of the proposed alternative. However, these impacts could not be ignored due to property ownership downstream of the interstates. To assess these impacts, Jacobs developed a dynamic 2-dimensional (2D) model of the two river systems using updated return frequency flowrates based on updated rainfall data. WisDOT leveraged the 2D model to identify a preferred alternative that balances and minimizes flood impacts adjacent to the interstates. As a result, the preferred alternative will be more challenging to permit but is grounded in a comprehensive risk based approach. The project has been a case study in building consensus and communicating flood risk in the midst of multiple contradictory modeling tools and significant nuance.
L1	Maureen O'Shea	IDWR	Quirky Challenges of Floodplain Management & Community Resiliency in Rural Idaho	The Snake River is 1,078 miles long meandering across Idaho. While vast, the Snake River Basin is quite arid. Much of the area along the Snake River, within a few miles of its banks, is irrigated farmland. More than 95% of the Snake River is an A Zone without BFE. Idaho has 44 Counties with 41 Counties participating in the NFIP. Idaho has 197 Cities with 133 Cities participating in the NFIP. About 213 of the 241 Idaho communities eligible to join the NFIP have a population of <25,000. City & county elections occur every two years. Often half of the seated council/commissioners are new every two years. Thus, FPM & Resiliency education is an ongoing challenge. Not only does half the elected officials change out with biennial regularity; then every four years so does the City/County Clerk. In the 213 communities with a population of <25,000 the City/County Clerk often wears way too many hats. Functions of the Clerk’s office often includes Alcohol Beverage Licensing, Alcohol Catering Permits, Annual City Budget, Building Permit Applications, City Elections, City Park Reservations, Dog Licensing, Payroll, Personnel/Human Resources, Planning & Zoning, Public Records Request, Urban Renewal, Water, Sewer, Sanitation Services, & so many other duties as assigned of which includes Floodplain Development Permits. If someone only snow skis once a year… they will never become an Olympics contender. Thus, these small cities/counties can never be a master of FPM & Resiliency. They do less than one Floodplain Development Permit per quarter, & sometimes less than one a year. The capacity to apply for, & administer a grant exceeds the community’s capacity.

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L2	Mary Jordan Braley, Stevens County Land Services and Trent Rogers, PE, Ardurra	See attached	Chewelah, WA: Hazard Mitigation Plan Development through Base Level Two-Dimensional Hydraulic Modeling	With funding from Washington's Flood Control Assistance Account Program (FCAAP), a preliminary hydrologic and hydraulic modeling project was conducted in Chewelah, Washington, to assess flood risk along Chewelah, Paye, and Thomason Creeks and their confluences with the Colville River. FCAAP, established by the Washington State Legislature, supports local governments in developing floodplain management plans and implementing mitigation projects to reduce flood hazards. This project featured the development of a two-dimensional (2D) hydraulic model using high-resolution LiDAR, FEMA Flood Insurance Studies, and field-collected structural geometry to estimate flood extents for 10-, 50-, and 100-year events. Challenges such as dense vegetation limiting LiDAR accuracy and incomplete culvert data were addressed through manual terrain adjustments and reasonable structural assumptions. The model was calibrated using the 2016 flood event and validated with photographic evidence, supporting the reliability of the selected Manning's n-values. In conjunction with the technical modeling, the project included an outreach and educational component, engaging a Technical Advisory Group (TAG) composed of project staff, agency personnel, and local stakeholders. The TAG reviewed modeling results to develop flood hazard planning alternatives tailored to the City of Chewelah's goals, resources, and constraints. Historical flood data and hydraulic modeling informed the creation of static maps and a public-facing interactive web map to raise awareness of flood hazards and available resources. The project culminated in a work plan for a city-level Comprehensive Flood Hazard Management Plan (CFHMP) and a needs assessment for scaling these efforts to the county level. The project offers practical lessons in model development, calibration, and data integration, while proposing a scalable Base Level Engineering (BLE) approach for broader watershed application and providing a replicable framework for similar communities across the Pacific Northwest.
L3	Tyler Blue	Ardurra	Waitsburg, WA: Risk Management and Cross Collaboration Benefitting Rural Communities	The Touchet River runs directly through the city of Waitsburg and has been mapped as part of the National Flood Insurance Program (NFIP). Historic flooding, some as recent as 2020, has led to increased perception and care around development in the community within mapped floodplain boundaries. The Waitsburg Parks and Recreation District, in collaboration with the nonprofit organizations Rural Youth Enrichment Services (RYSE) and Friends of the Pool (FotP), has been working to plan, design, and construct a new community pool to replace their current, 100-year-old facility. The local stakeholders have been working with civil, environmental, and hydraulic consultants to evaluate and determine the most viable site for the project within the city. The presentation will highlight the two-dimensional hydraulic modeling completed for the Touchet River to assess the feasibility of the proposed pool site and highlight the coordination efforts utilized to garner buy-in from the local community and federal agencies at-large. For emergency management professionals and communities with increased flood risk, this case study underscores the importance of early engagement, updated information, and cross-sector collaboration when evaluating projects in vulnerable areas. Attendees will gain insights into how community-driven initiatives can succeed when aligned with floodplain management and a shared commitment to public safety.
M1	Matt Gilbertson	Simpson Gumpertz & Heger	Recent Updates to Flood-Resistant Design Standards: ASCE 7-22 Supplement 2 and ASCE 24-24	Flood risk is a growing concern for the built environment, and navigating the rapidly changing landscape of flood regulations can be challenging for building designers. The presentation will provide an overview of the recent updates in two key ASCE standards: ASCE 7-22 Supplement 2 and ASCE 24-24, which together represent a significant shift in the criteria, loads, and other requirements for flood-resistant building design.

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M2	Rob Flaner	Black & Veatch Corporation	REGIIONAL SUBSTANTIAL DAMAGE RESPONSE PLANNING, CAN IT WORK?	This presentation will share lessons learned from a case study and strive to answer the question, regional substantial damage response planning, can it work? Section 1206 of the Disaster recovery Reform Act of 2018 incentivizes substantial damage response planning. The Community Rating System does as well with credit for an SDP under activity 510. Since the passage of the DRRA, several examples of how to develop SDRP's have been developed and recognized under the CRS program. But is it possible to plan for substantial damage response on a regional scale? When these types of plans are the most effective are large scale disaster events that impact a region. These regions are typically stressed for resources and many fronts, and the needs for substantial damage determination are often forgotten. Based on that fact alone, regional planning makes sense because it creates the opportunity to pool resources under a common cause. The CRS program has not typically recognized regional programs based on past interpretation of program requirements. However, the times may be changing. FEMA has received significant feedback on "CRS Next", much of which has centered upon the recognition of regional programs. This presentation will look at a case study in San Joaquin County, CA that is currently preparing a multi-jurisdictional local hazard mitigation plan (MJHMP) following a CRS 10-step script to maximize CRS credit potential for the County and 9 cities. To increase the resilience for the entire panning area, this effort included the creation of regional substantial damage response plan that would cover the County and all 9 cities. This effort was done in full coordination with Verisk to assure CRS creditability and was a functional annex of the MJHMP.
M3	Peter Jackson	Idaho Department of Water Resources	Current FFRMS & HUD Impacts - Where do we go from here ?	With the New Administration placing the FFRMS program on hold, where do the States and Communities go from here. Discussion on how Communities still need to follow their standards and consider the impacts to the community at large. HUD requirements that are NOT associated with FFRMS still apply and these requirements must be followed.
N1	Celinda Adair & Michelle Gilbert	AtkinsRealis	Communications tips for FPAs: Keep your message from meandering and keep the information flowing	Good communication habits can help you turn data into shared knowledge and action. We will review best practices for effective communication, including tailoring messages, leveraging social media and digital tools, using plain language, and creating accessible products. We will also touch on considerations for disaster events. Our goal is to provide you with tools and tips to educate and inform the public and partners, promote action, build relationships, and support program compliance.
N2	Aaron Michel	Swiss Re	Recover Faster: Parametric Flood Insurance and Flood Analytics (60 min.)	This presentation will share innovations in the private re/insurance markets that aid in faster flood recovery for local governments, including parametric flood insurance and flood analytics.
O1	Molly Lawrence	VanNess Feldman	Wading through the Flood of Changes: NFIP-ESA Integration Status Report	Update on the status of NFIP-ESA integration in Oregon, Washington and CA. Status of FEMA efforts related to its Implementation Plan and Pre-Implementation Compliance Measures related to the Oregon NFIP Biological Opinion and related litigation.

Session	Presenter Name	Organization	Title of Presentation	Abstract
O2	Lucas Evans & Rowyn Cooper-Caroselli	Wolf Water Resources	A review of permitted habitat restoration projects within the floodway & floodplain â€“ challenges, solutions, and policy considerations from a series of case studies	While multiple tools and strategies are available for permitting aquatic restoration projects (No-Rise, CLOMR/LOMR, etc.), aquatic restoration does not fit well within the framework of the NFIP and often restoration outcomes are reduced to avoid cost and schedule increases. This presentation includes (10+) restoration project case studies to examine strategies for successful floodplain permitting. The projects reveal a pattern of recurring solutions that are organized into the following bins: (1) design, (2) modeling, (3) policy interpretation, and (4) planning. The lessons learned from these examples are shared to increase future floodplain permitting success, limit project delays, and save funding for implementation of more and better project implementations. A second review of these project case studies considers future policy improvement to the NFIP – what can these projects tell us about current shortfalls, pinch-points, and opportunities for improvement? Cost, schedule delays, and design compromises caused by the NFIP are discussed and used to develop a succinct list of policy recommendations.
P1	Patrick VanDewiele and Azadeh Bloorchian-Verschuyl	Stantec	Stream Level Approach in HUC-10 Watershed Scale 2D Hydraulic Models for Flood Study Application â€“ 2025 Update	With the advancement of HEC-RAS 2D capabilities, flood studies have evolved to utilize 2D hydraulic comprehensive modeling more and more in-place of traditional 1D methodology. One method becoming more common in early 2020's has been developing 2D hydraulic models at watershed scale, which better represents the physical characteristics such as topography and landcover, as well as hydraulic properties which determine their impacts on flood routing, flow velocities, and inundation patterns during flood events. To reduce the number of runs/plan files required, one methodology is to simulate multiple streams simultaneously. However, this introduces significant challenges, especially in large-scale models, due to complex interactions between stream flows, including backwater effects and excessive cumulative flows downstream of confluences. To address these issues, Stantec developed the Stream Level Approach, a novel methodology that eliminates the need for negative flow inputs downstream of confluences. The Stream Level Approach categorizes tributaries by stream level and simulates them independently to improve model efficiency and accuracy. This approach breaks down the simulations for each flood event by these stream levels. In other words, it groups the streams in each level together for a given flood event simulation with the other streams in different levels having no flow. A single downstream boundary condition outflow is used for all stream levels and no need for negative flow boundary condition lines at each confluence and results are later merged in RAS Mapper using the maximum inundation extent where overlaps occur. Stantec applied the Stream Level Approach for two FEMA Region 10 county flood insurance studies in Idaho. These studies were in discovery phase and used 2D base-level-engineering standards to provide approximate flooding results to inform the community planning. This abstract provides an update to the methodology and findings presented at the 2024 conference, focusing on the continued development and application of the Stream Level Approach. The 2025 presentation will share lessons learned, performance insights, and practical considerations for implementing the Stream Level Approach in future floodplain mapping efforts. This work supports scalable, accurate, and efficient flood modeling across larger watershed areas.

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P2	Richard Carter	BGC Engineering	Landslide Susceptibility Assessment for Informed Decision Making - City of Tukwila, Washington	Through support from a FEMA Cooperative Technical Partners program grant, the City of Tukwila and BGC Engineering completed a citywide landslide susceptibility assessment to provide city decision makers with a deeper understanding of landslide hazards and to inform land use decisions and long-term planning for strategic mitigation. The study consisted of compiling different types of publicly available information important to the landslide susceptibility model in an online earth science platform for visualization and comparison with other relevant infrastructure data sets. BGC also completed lidar change detection (LCD) using multiple lidar acquisitions to ensure complete change detection coverage across the city. The results of the LCD provided insight into slope movements between the lidar collections, as well as displayed ground disturbance activities and changes related to soil erosion and surface water. Another part of the study assessed urban forest health from the standpoint of targeted plantings and slope stability where applicable. The purpose of the study involved consideration for the intersection of the landslide prone areas with critical facilities, utilities and infrastructure. The City of Tukwila can use the results of this study to prioritize slopes for mitigation, to make scientifically informed decisions on development, and to communicate with and educate landowners about the site conditions in their area.
P3	Paul Sclafani	USACE	Floodplain Mapping at the Corps	Over the past 5 years, the Corps has made a policy shift from flood maps for internal use to those available publicly. Corps flood maps are generated from our Floodplain Management program, Water Management program, and Dam Safety program. FEMA and the Weather Service also produces maps too. Interpretation and dissemination of these maps are typically the responsibility of our Floodplain Managers and in Oregon, the Silver Jackets team is a great resource for understanding these maps.
PLENARY	Marjorie Wolfe, PE, CFM	Wolf Water Resources	Plain talk about Floodplain Permitting	The work of River Restoration is to increase the natural and beneficial function of floodplains without causing adverse impacts to people and property. Restoration projects are moving to multi-benefit larger scale floodplain projects that improve not only habitat, but water quality, flow attenuation, and often reduce risks of deep fast flow during floods. Floodplain regulations were not written with these projects in mind but written for development as homes and buildings. This presentation describes the theory, practice and unintended consequences of "conservative" regulations for floodplain restoration projects. Drawing on lessons learned and proposing solutions that reduce the cost of remapping where there is no increased risk. It will outline pathways to ensure that these projects that provide so needed to protect our rivers and communities can proceed cost effectively while also ensuring public health and safety risk is addressed.
PLENARY	NORFMA Board and others	NORFMA	Closing Discussion	In less than a year, FEMA's workforce has been depleted, major programs cut, and there are calls for the agency to be reformed, if not eliminated. After decades of close federal partnership, how can/should state and local entities responsible for floodplain management best adapt to this new reality? This will be an open discussion on what we've learned and shared during the conference, thoughts and reflections, and your ideas for the upcoming year.