High and Dry

Photo Credit: Holly Strand, DEM

Fall 2022 Newsletter

Provided by:
Utah Division of Emergency Management
Utah Floodplain Stormwater Management Association

UFSMA Request & Reminder

Call for logo designs & ideas.
UFSMA is doing a redesign of their logo & the national conference ASFPM will be coming here to Utah in 2024.
We are looking for ideas on both of these, please send any designs and sketches to board@ufsma.org.

Thank you for all those who attended this year's conference in Park City! Hope to see you at the next one in Cedar City!

Reminder, memberships expire at the end of the year.

We Have an Upcoming Training!

Provided by Division of Emergency Management and WSP

Developing a Base Flood Elevation (BFE) in a Zone A.

Approximate Zone A's are areas on a FEMA Flood Insurance Rate Map (FIRM) not studied by detailed hydrologic/hydraulic methods. These areas are shown as "Zone A" without a Base Flood Elevation (BFE) identified on the FIRM or in the Flood Insurance Study (FIS). Determining the BFE in these areas can be challenging, but guidance and new technology is available to assist in determining a BFE where this is no other information available. This training will review and provide guidance on various methods to develop a BFE in an Approximate Zone A. Hands-on exercise will be included. Laptops are recommended but not required for attendance. Additional details will be provided upon registration.

Date: Tues, Dec. 13, 2022
Time: 8:30am-12:30pm
Location: Taylorsville State Office Building
4315 S. 2700 W., 2nd Floor, Suite 2200

Register Here!

Please contact **Rachel Mares** at rachel.mares@wsp.com or 918-809-4255 with any questions.

We Have a New State Floodplain Coordinator

By Tracie Harrison
State Coordinator

As the new Floodplain Manager and NFIP Coordinator for the State of Utah, I wanted to introduce myself and say I am excited to be working with you.

My family is originally from Castledale in Emery County, where they worked in many of the mines in the area before moving to Salt Lake. I grew up in West Jordan and spent summers in our beautiful mountains camping with my large extended family. After graduating from West Jordan High School, I moved to Ephraim and attended Snow College.

I have spent over 18 years on the insurance side of things, where I first learned about flooding risk and flood insurance. After many years in the insurance industry, I decided to go back to college and earned my Bachelor of Science degree from the University of Utah in 2017. Before finishing my degree, I took an intern position with the Utah Division of Emergency Management in their RiskMap program working with Jamie Huff and Kathy Holder. If my face looks familiar, you might have seen me at the UFSMA 2017 Conference in Bryce Canyon. RiskMap gave me experience in Emergency Management, helping me develop professional relationships with not only community officials, but with the local floodplain and emergency managers.

After my time at DEM, I went to work in Florida doing disaster recovery work from Hurricane Irma. The role gave me the opportunity to assist community officials and learn the importance of building working relationships to achieve success in emergency preparedness with a focus on public safety. While I enjoyed my time in Florida (Christmas lights on Palm trees) I missed my family and the beautiful season here in Utah. I moved to Denver, Colorado to be closer to home while further growing professionally in floodplain management. My focus was on post-wildfire flood risk, mitigation, and outreach for the states of Montana, Colorado, Wyoming, and Utah. This opportunity helped me further develop relationships with Federal, State, and local agencies to support communities after a wildfire event.

I am happy to return to my home state. I want to thank Jamie Huff, Kathy Holder, Angelia Crowther, and my Floodplain Planner McKenzie Goodenough for all the hard work they do for our communities.

I look forward to getting to know you all and being able to support you.

Utah Risk MAP Flood Study Project Update

By Jamie Huff
RiskMap Program Manager

Statewide Floodplain Map Coverage

With a relatively small budget and staff, Utah's Risk MAP program has always had to prioritize floodplain information needs down to just a few projects each year. We use a handful of criteria, including: areas where there are still only paper maps, areas where existing studies need updating, and areas where flood risk has never been assessed or identified, and areas of greatest apparent need.

Utah's most populated areas are mostly mapped now. But the rural areas of the state—especially in the central, eastern and southern counties –still lack flood risk information for the most part. Even though FEMA and the State of Utah has been mapping floodplains for over 40 years!

This year—because of improved technology and funding —we have set an ambitious new goal. **We want to achieve statewide floodplain map coverage in the next ten years.** To accomplish this, we are adding a third staff member, increasing our engineering contractor pool, and taking advantage of LiDAR-derived data to run hydrologic and hydraulic models quickly and more accurately than ever before.

Base Level Engineering is the key to covering so much ground quickly. We are going to run Base Level Engineering Studies (BLE) for most of the remaining unmapped areas in the state. Utah Risk MAP already has funding for BLE studies in Juab, Millard, Sanpete, Sevier, Piute, Garfield, Kane, Wasatch, Duchesne, Uintah, Daggett, Iron, Carbon, Emery, Grand, and Tooele. These large-area BLE studies will result in *best available data* for community use in land use decision-making and updating local ordinances. However, the **floodplain data resulting from BLE will NOT be regulatory** from FEMA's standpoint until other phases of the study are completed and BLE data is combined with more detailed studies. Local floodplain/emergency managers will be involved as we move through the various phases mandated for regulatory products.

Active Projects

- Weber County
- Provo River Levee & Utah Lake
- Great Salt Lake
- Washington County
- Tooele County
- Wasatch Uintah Basin
    - Wasatch, Duchesne, Uintah, Daggett Counties
- Greater Sevier
    - Parts of Juab, Millard, Sanpete, Sevier, Piute, Garfield, Kane Counties Base Level Engineering (BLE) Analysis
- Iron County Base Level Engineering (BLE) Analysis
- Carbon, Emery Grand Base Level Engineering (BLE) Analysis
- Flood after Fire Risk Assessment: Jacob City in Tooele

Projects on Deck

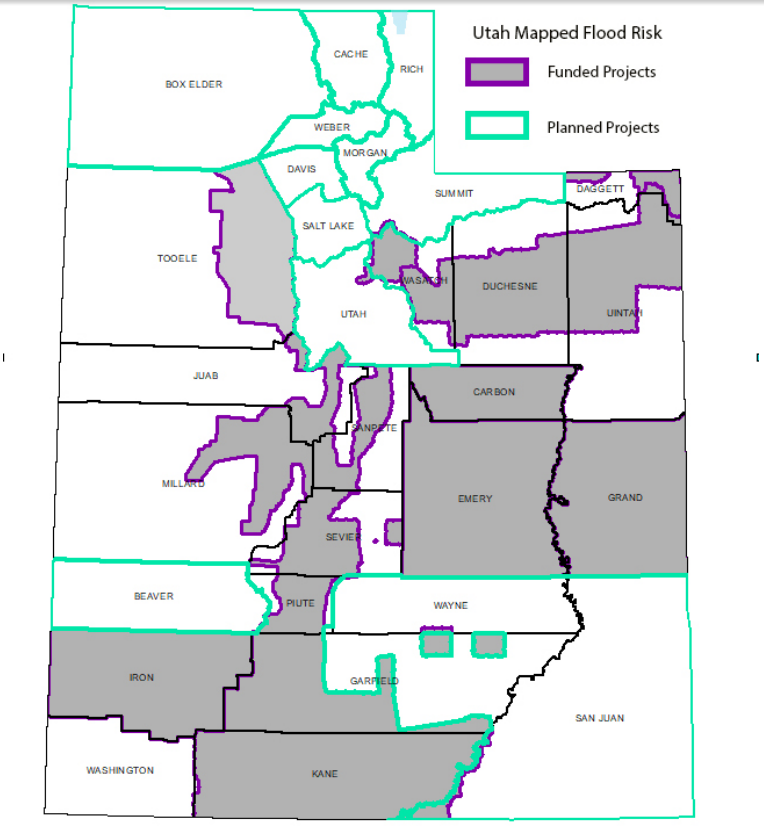
- Iron County Base Level Engineering (BLE) Analysis
- Carbon, Emery Grand Base Level Engineering (BLE) Analysis
- More Flood after Fire Risk Assessments

More Projects Planned Over the Next Five Years

Assuming federal funding is available, we have several more projects planned that will help us reduce Utah's paper inventory, revise aging data, and increase miles of identified flood risk within the state.

- Box Elder, Cache, Rich, Weber, Morgan Base Level Engineering (BLE) Analysis (2023)
- Beaver, Wayne, San Juan Base Level Engineering (BLE) Analysis (2024)
- Utah, Salt Lake, Davis, Summit Base Level Engineering (BLE) Analysis (2024)

These priorities are subject to change as national priorities shift or local needs arise.
For more on Base Level Engineering click here.



If you have any questions about these projects or would like further information or details, please contact Jamie Huff, Risk MAP Program Manager, Utah DEM, at 385-549-0746 or jhuff@utah.gov

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Pluvial Flooding: What It Is, Where It Is, and How Often It Occurs

By Holly Stand
Risk Map Communications Specialist

One of the most common misconceptions about flood risk is that one must be located near a body of water to be at risk. Not so! **Pluvial flooding**, is caused when heavy rainfall creates a flood event *independent* of an overflowing river, stream, or lake. Pluvial floods are usually shallow, but they can still cause significant property damage and even loss of life.

The two common types of pluvial flooding are:
Surface water flooding: Intense rain saturates and overwhelms an urban drainage system. Water flows out into streets and nearby structures.

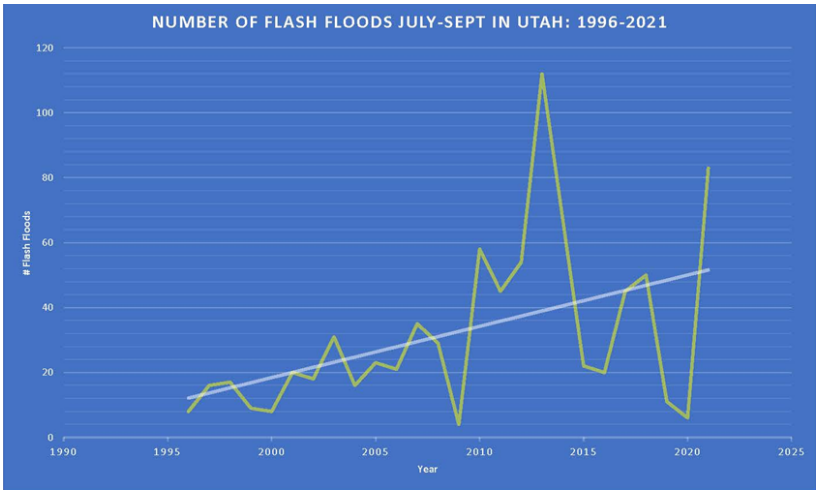
Flash flooding: Caused by intense, high-velocity torrents of water triggered by torrential rain falling within a short amount of time within the vicinity or on nearby elevated terrain. They can also occur via a sudden release of water from an upstream levee or a dam. Flash floods are dangerous and destructive not only because of the force of the water, but also because of the hurtling debris that is often swept up in the flow.

- In Utah, mountainsides with recent forest fires are notorious sources of pluvial floods, as are suburban communities on hillsides. Utah's ubiquitous alluvial fans are prime locations for alluvial flooding.
- Slot canyons are another dangerous source. These canyons channel water from thunderstorms, resulting in a fast-moving wall of water and debris. Slot canyon floods cause more fatalities in Utah than any other type of flood.

Courtesy of Holly Strand, DEM

When and Where Pluvial Floods Happen:
The intense rainstorms that cause the most pluvial flooding in Utah occur between July and September. During these months the meteorological remnants of hurricanes and tropical storms arrive in the southwest forming what is called the "North American monsoon". The monsoon is most concentrated in Mexico, New Mexico, and Arizona. But intense precipitation events and flash flooding spread into Utah—especially southern Utah and into other neighboring states.

Pluvial Floods are Increasing in Intensity:
Temperatures in Utah have risen 2.7°F since the beginning of the 20th century and will continue to rise. The period since 2012 has been the warmest on record for Utah, with 8 of the 10 warmest recorded years. Warmer air can hold more moisture, which has led to an increase in the intensity (but not the number) of rain events during the monsoon. According to Seth Arens of the Western Water Assessment program at the University of Colorado, the amount of precipitation for short-duration storms (15 minutes to 2 hours) is likely to increase 7-14% for each 1.6 degrees F of warming. If there are more intense storms in the future (likely) there will be more pluvial flooding events in Utah.



Data from NOAA's National Centers for Environmental Information, Storm Event Database https://www.ncdc.noaa.gov/stormevents/

Pluvial flood areas are not mapped:
Unfortunately, the risk of pluvial flooding from intense thunderstorms is typically not shown on floodplain maps (FIRMS) even while this flooding type has caused 25% of the flood insurance claims since 1978. It would be unrealistic for this to change in the foreseeable future. The maps cannot be quickly updated every time a community replaces a culvert, improves a storm sewer, or builds a new Stormwater detention facility. Furthermore, the hydrologic and hydraulic models upon which floodplain maps are based are created using *historical* precipitation/flow events and data. They do not incorporate estimated *future* precipitation and flows.

FEMA-led specialist groups are experimenting with new types of probabilistic flood risk

So What Can Communities Do?
For the near term, identification of Stormwater/pluvial flood areas should be a local community-based risk identification effort. This been a consistent recommendation in recent federal and state urban flood studies.
To reduce damage from pluvial flooding in urban areas, communities can and should: a) have a good warning system for informing people of impending flooding, b) maintain transport and communication through the worst possible event and c) minimize urban flooding in cities/suburbs through improved master drainage plans. Experts recommend Low Impact Development (LID) solutions including (e.g. green roofs), detention structures (e.g. ponds, swales) and infiltration techniques (filter drains, permeable surfaces) for mitigating pluvial flood damage.

And of course, the best advice for individuals would be to floodproof their homes and businesses and buy flood insurance! Even if you don't live in a Special Flood Hazard Area, don't assume your property won't flood!

Utah Community Support Liaisons

By Angelia Crowther
Community Support Section Manager

Community Support Liaisons (LNOs) have valuable roles within the Utah Department of Public Safety (DPS) and the Utah Division of Emergency Management (DEM). LNOs are remote positions that are strategically stationed throughout the state within their assigned regions (see the link above for a map of regions and LNOs). This allows LNOs to be readily available to support and connect at the local level and are the Division's point of contact to relay information and coordinate programs between the federal, state, and local agencies.

LNOs work diligently to build, foster, and maintain relationships with partners that may have a role in emergency management. Other important roles that LNOs have during disasters are to connect partners that support emergency disaster planning, response, and recovery efforts for communities to have the ability to recover much quicker and build a more resilient state. Resource requests and support needs are passed through the liaisons from county emergency managers up to the SEOC, which will allow those emergency managers and their emergency operations centers (EOC) to respond adequately and have the resources they require.

LNOs are a great resource to anyone that is looking for support from the state, seeking answers to questions, and if the LNO doesn't know the answer they can help make those connections with our subject matter experts to and for our partners across the state.

What Is The Silver Jackets & What Do They Do?

By Sarah Moore & Rachael Orellana
U.S. Army Corps of Engineers Sacramento District

The Utah Silver Jackets Team has a new leader! Tracie Harrison has just accepted the position as the State Floodplain Manager, and she will be leading the Utah Silver Jackets team, together with Jamie Huff, Risk MAP Program Manager. A fun fact is that Jamie Huff has been involved in Silver Jackets since it's inception. She was part of the Idaho Silver Jackets Team before helping lead the Utah Silver Jackets team, and Jamie is featured in a photo on the main page of the newly updated Silver Jackets Webpage.

The new Utah Silver Jackets webpage can be found here: https://www.iwr.usace.army.mil/Silver-Jackets/State-Teams/Utah/

Across the United States, Silver Jackets teams bring together multiple state, federal, and local agencies to learn from one another and to work together to reduce flood risk in their respective jurisdictions. Silver Jackets Teams are State Led and supported by Federal, other State and local partners. In the next couple months USACE and Utah Division of Emergency Management (DEM) will be identifying potential Utah Silver Jacket projects and selecting project ideas that we will move forward with developing into proposals. If you know of communities in Utah that may be interested in better understanding their flood risks, putting together an Emergency Action Plan (EAP), or exercising their EAP with a Tabletop Exercise, or other flood risk community needs, please email the USACE Silver Jackets Coordinator for Utah, Rachael Orellana at Rachael.Orellana@usace.army.mil. Utah Silver Jackets projects over the past year have ranged from urban flooding readiness to reducing flash flood risk in remote slot canyons. Recent Silver Jackets Projects have included:

- Zion National Park Flash Flood Risk Reduction Project
- City of Bluffdale Emergency Action Plan Guide and Canal Failure Flood Consequence Study
- Utah Alluvial Fan Flooding Mitigation Options Guide
- Mapleton Flood After Fire Support
- Box Elder County Flood Risk Management Workshop
- Emery County Slot Canyon Flash Flood Risk Reduction Workshop
- Alluvial Fan Delineation for the City of Nibley

Working together as a team, the Utah Silver Jackets are increasing flood risk awareness and providing a platform for interagency collaboration and resource sharing across the state. All of the communities mentioned above, and many more like them, are proving that the people of Utah understand that flood risks are real and that by working together flood risk can be reduced. The next Utah Silver Jackets Team meeting will be a virtual meeting in November of 2022. If you would like to attend the meeting, please reach out to Tracie Harrison tjharrison@utah.gov and/or Jamie Huff jhuff@utah.gov to be included on the invitation.

What is Silver Jackets?

Silver Jackets teams are interagency teams that facilitate collaborative solutions to state flood risk priorities. The state-led teams bring together multiple state, federal, and sometimes tribal and local agencies to learn from one another and work together to reduce risk from floods and sometimes other natural disasters. By applying their shared knowledge, the teams enhance preparedness, mitigation, and response and recovery efforts. The state or territory sets the priorities, with each agency member supporting the team using its own programs and resources within the constraints of available budgets and agency authorities.

The first pilot Silver Jackets teams were formed in Ohio in 2005 and Indiana in 2006. Since then, 54 Silver Jackets teams have formed in all 50 states, three territories (Guam, Puerto Rico, and U.S. Virgin Islands), and the District of Columbia. The intent is not to duplicate existing teams but to supplement and strengthen current efforts and establish collaborative relationships where they do not yet exist.

The Silver Jackets National Logo, as well as the State specific logos have all been recently updated. State specific logos prominently feature the outline of the State, emphasizing that the teams are State-led, a unique opportunity to focus Federal dollars (in the form of Federal staff labor) on State and local priorities.

We look forward to hearing your ideas for future Silver Jackets projects!

The Community Rating System (CRS)

Every year, flooding causes hundreds of millions of dollars' worth of damage to homes and businesses around the country. Standard homeowners and commercial property insurance policies do not cover flood losses. To meet the need for this vital coverage, the Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program (NFIP).

Under the NFIP's Community Rating System (CRS) communities can be rewarded for doing more than just the minimum standards.

CRS Class	Credit Points (cT)	Premium Reduction	
		In SFHA	Outside SFHA
1	4,500+	45%	10%
2	4,000–4,499	40%	10%
3	3,500–3,999	35%	10%
4	3,000–3,499	30%	10%
5	2,500–2,999	25%	10%
6	2,000–2,499	20%	10%
7	1,500–1,999	15%	5%
8	1,000–1,499	10%	5%
9	500–999	5%	5%
10	0–499	0	0

SFHA: Zones A, AE, A1–A30, V, V1–V30, AO, and AH

Outside the SFHA: Zones X, B, C, A99, AR, and D

Preferred Risk Policies are not eligible for CRS premium discounts because they already have premiums lower than other policies. Preferred Risk Policies are available only in B, C, and X Zones for properties that are shown to have a minimal risk of flood damage.

Some minus-rated policies may not be eligible for CRS premium discounts.

Premium discounts are subject to change.

CRS discounts on flood insurance premiums range from 5% up to 45%, based on CRS credit points that are awarded to communities. The discounts provide an incentive for communities to implement new flood protection activities that can help save lives and property when a flood occurs. The CRS provides credit under 19 public information and floodplain management activities described in the CRS Coordinator's Manual under four categories.

1. Public Information Activities (300 series)
2. Mapping and Regulations (400 series)
3. Flood Damage Reduction Activities (500 series)
4. Warning and Response (600 series)

Table 110-2. Credit points awarded for CRS activities.*

Activity	Maximum Possible Points	Maximum Points Earned	Average Points Earned	Percentage of Communities Credited
300 Public Information Activities				
310 Elevation Certificates	116	116	38	96%
320 Map Information Service	90	90	73	85%
330 Outreach Projects	350	350	87	93%
340 Hazard Disclosure	80	62	14	84%
350 Flood Protection Information	125	125	38	87%
360 Flood Protection Assistance	110	100	55	41%
370 Flood Insurance Promotion [5]	110	110	39	4%
400 Mapping and Regulations				
410 Flood Hazard Mapping	802	576	60	55%
420 Open Space Preservation	2,020	1,603	509	89%
430 Higher Regulatory Standards	2,042	1,335	270	100%
440 Flood Data Maintenance	222	249	115	95%
450 Stormwater Management	755	605	132	87%
500 Flood Damage Reduction Activities				
510 Floodplain Mgmt. Planning	622	514	175	64%
520 Acquisition and Relocation	2,250	1,999	195	28%
530 Flood Protection	1,600	541	73	13%
540 Drainage System Maintenance	570	454	218	43%
600 Warning and Response				
610 Flood Warning and Response	395	365	254	20%
620 Levees	235	207	157	0.5%
630 Dams	160	99	35	35%

* Figures are based on communities that have received verified credit under the 2013 *CRS Coordinator's Manual* (about 43% of CRS communities), as of October 2016. The maximum possible points are based on the 2013 *Coordinator's Manual*. Growth adjustments are not included.

You're probably already doing many of these activities. To get credit, community officials will need to

Participation in the CRS is voluntary. If your community is in full compliance with the rules and regulations of the NFIP, you may apply. There's no application fee, and all CRS publications are free. For more information, go to CRS Resources.

Taken from FEMA Community Rating Systems Local Officials Guide to Saving Lives, Preventing Property Damage, and Reducing the Cost of Flood Insurance. FEMA B573/2018

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