

# Nevada Floodplain Management News

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## INSIDE THIS ISSUE:

Compliance Enforcement	1
The Whole Picture: LiDAR Acquisition for the State of Nevada	2
City of Reno Dedicates High Water Mark	3-4
Carson City's New High Water Mark Mural	5
Nevada Flood Mitigation Workshop	6
FMA: Emerging Professionals	7
Upcoming Training and Conferences	8



## COMPLIANCE ENFORCEMENT

BY ERIN WARNOCK

*"The next step in FEMA's restructuring plan is increasing action on compliance."*

The Nevada Floodplain Management Program is responsible for administering the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program at the state level. We act in accordance with FEMA's guidance and are a liaison between local floodplain management and FEMA. With that said, FEMA is working diligently to restructure almost every aspect of current floodplain management procedures to increase efficiency, accuracy, and data collection. The first change we witnessed was Risk Rating 2.0; the new pricing methodology that leverages industry best practices and cutting-edge technology to enable FEMA to deliver flood insurance rates that are actuarially sound, equitable, easier to understand and better reflect a property's flood risk. This went into effect for all policies new and existing after April 1, 2022.

The next step in FEMA's restructuring plan is increasing action on compliance. This will look like more frequent audits for local communities. There will be screening process audits in which our office will contact communities and request information. This baseline information will be reviewed and used to determine whether site visits are needed or if more information will be requested. This will allow our office to touch base with our communities more often and provide additional and more in-depth assistance when needed. Additionally, FEMA has created a national database to track potential violations. Previously, potential violations were tracked in community assistance visit audit reports. However, the new database will allow this data to be more closely tracked and identified to prevent it from falling off the radar due to changes in staff or when other tasks take precedence. FEMA is ultimately moving in a direction in which compliance will be enforced at a higher level than we have seen before. I encourage Nevada's local floodplain management staff to attend trainings and meetings that we host to stay in the know about these coming changes.

Erin Warnock, Nevada State Floodplain Manager & NFIP Coordinator

# The Whole Picture: LiDAR Acquisition for the State of Nevada

*Written by Sarah Fichtner*

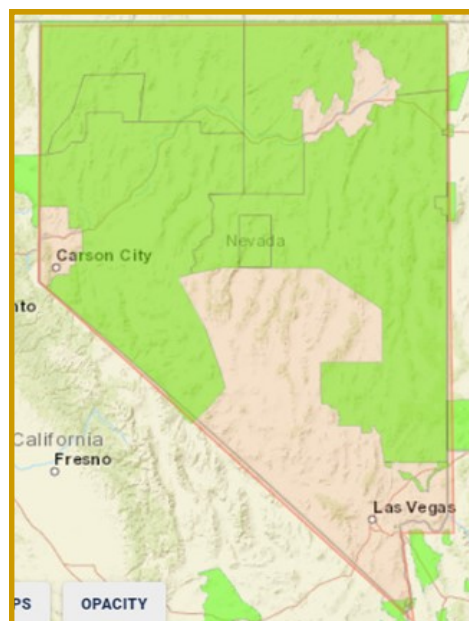
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For anyone who is not familiar, LiDAR stands for Light Detection and Ranging, and is a common remote sensing method used to collect land elevation data. FEMA uses LiDAR data to determine flood zones and produce Flood Insurance Rate Maps (FIRMs) and Flood Insurance Studies (FIS). This process, from LiDAR collection to flood insurance rate map products, can take a significant amount of time (several years) depending on the size of the area being covered and any interruptions to the work, e.g., a pandemic.

The critical importance of LiDAR is not limited to flood mapping. Additional applications include, but are certainly not limited to, city planning, transportation and emergency response services for city, county, and tribal entities; determining plant type, height, and density for forestry purposes; and exploration of natural resources.

Given the multi-disciplinary benefits of using LiDAR, and the time it takes to collect and develop LiDAR data, it would make sense to have LiDAR coverage on hand for the whole state... right? Unfortunately, the cost of LiDAR is a huge limiting factor despite collaboration and cost-sharing across multiple entities. Currently, there is LiDAR coverage for a small portion of the state mostly in urban areas of Nevada (bottom left image). The 3D Elevation Program (3DEP) seeks to acquire high-quality land elevation data across the nation and is in the process of procuring LiDAR covering much of rural Nevada (lower right image). Once LiDAR is completed for these areas, Nevada will have 70% coverage. A plan to acquire LiDAR for the remaining 30% of Nevada is in the works, so stay tuned for more updates.

Screen captures from the [US Interagency Elevation Inventory](#) of completed LiDAR (left) and LiDAR in progress (right) across Nevada.





## City of Reno Dedicates High Water Mark Sign

Residents in the cities of Reno and Sparks enjoy the comforting aesthetics, recreational opportunities, and irrigation benefits provided by the Truckee River, a 121-mile closed river basin that drains from Lake Tahoe on the California-Nevada border to Pyramid Lake, northeast of Reno. The public affectionately calls the river its “Crown Jewel,” that is, until the Truckee River overflows its banks and floods casinos, businesses, homes, and even the airport.

This year marks the 25<sup>th</sup> and 5<sup>th</sup> anniversaries of the 1997 and 2017 Truckee River floods. The 1997 flood caused \$1.2 billion in damage (adjusted for inflation) and led to the formation of the Truckee River Flood Management Authority, established to improve the area’s protection against floods. Other post-1997 flood mitigation projects included building a new debris-resistant Virginia Street Bridge, a new levee drain realignment, and the purchase of land set aside for recreational use. The Truckee River flooded in 2017, but damages were less severe partly due to mitigation measures completed since 1997.

On May 20, 2022, the City of Reno held a ceremony at Wingfield Park for the unveiling of a High Water Mark sign to promote community-based awareness of flood risk on the Truckee River and to remind residents that floods can and do happen, often with disastrous consequences. In attendance were local, state, and federal officials including City of Reno elected officials and staff, U.S. Army Corps of Engineers, Truckee River Flood Management Authority, National Weather Service, Nevada Division of Water Resources, and the Federal Emergency Management Agency (FEMA). The City of Reno’s new High Water Mark signs display historical photos from the 1997 flood of record on the Truckee River and has a [QR code](#) that links to information about the Truckee River’s flood history.

Reno’s efforts, led by Reno’s Utility Services Department’s Senior Engineering Technician Sergio Gutierrez, were supported by the Nevada Division of Water Resources. Media coverage included reports from four television stations and one radio station.

FEMA Region 9 staff meet with community representatives and other federal and state agency staff once a month to discuss and support future plans to promote flood safety messaging and public outreach through the High Water Mark Initiative. FEMA headquarters initiated the program as a pilot project in 2013 as part of its National Flood Insurance Program. Reno was the 38<sup>th</sup> community to promote flood safety, disaster preparedness, and community resilience through the program.

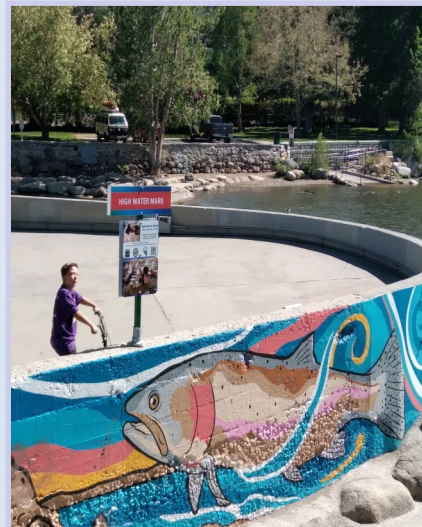
*We have been working diligently on this flood awareness project in order to create a lasting monument that will serve to educate the public for years to come.*

*The sign will serve to commemorate the 25th and 5th anniversaries of the 1997 and 2017 floods in the City of Reno, and remind our community to never forget that these dangers exist along our Truckee River.*





## City of Reno Dedicates High Water Mark Sign (cont'd.)





# Carson City's New High Water Mark Mural

Carson City and the Carson Water Subconservancy District (CWSD) recently unveiled a High Water Mark Mural and held a Disaster Preparedness Festival on August 11, 2022

Please enjoy this wonderful drone footage of the special engagement. [Click](#) to play.  
*Video courtesy of Shane Fryer, Carson Water Subconservancy District*



Carson City installed this stunning High Water Mark mural nestled in open space wetlands. Placed along [Route 1](#)—Multi-Use Path and [Route 6](#)—Trail, it connects the city to the Carson River under the East 5th Street Bridge. This mural is not only beautiful, it also serves as an outreach tool to underscore how floodplains and open space work together to reduce flood danger to people and their property.



***The new mural depicts Carson City's rich wildlife habitat and is also by a large interpretive sign that describes how 'Open Space and Floodplains Work Together.'***

Floodplains and wetlands store expansive amounts of water to reduce the potential severity of floods. Additionally, these open floodplains and wetlands improve water quality as they filter pollutants and increase water quantity with ground water recharge. Wetlands enrich our quality of life with their idyllic, scenic vistas, and these habitats are home to Nevada's most biologically diverse wildlife areas. Carson City has preserved and protected approximately 71% of Carson City's floodplain and wetlands as open space. As the city accommodates more housing, these natural systems serve as one of the most effective ways to moderate flood disaster costs and build community flood resilience.

FEMA funded this High Water Mark project in Carson City through a Cooperating Technical Partners (CTP) grant to Carson Water Subconservancy District (CWSD) to let people know [Nevada floods](#) and to encourage communities to take long-term action to address flood risk. With this funding, Carson City systematically plans the best approach to reduce flooding from rain, flash floods, and riverine floods. These plans are utilized in the City's Capital Improvement Plan, its new drainage manual, and updates to its floodplain ordinances.

Click [here](#) to find out more about Carson City's High Water Mark Mural Project and the Mural's artist, Debra Fong.



# Nevada Flood Mitigation & Funding Opportunities Workshop

Thursday September 22, 2022  
1:00pm - 4:30pm

Regional Emergency Operations Center  
5195 Spectrum Blvd, Reno, NV 89512

Email [nvsilverjackets@usace.army.mil](mailto:nvsilverjackets@usace.army.mil) to register

Please join us for a chance to learn about flood mitigation efforts, practices, current grants in action, and future funding opportunities.

3 Continuing Education Credits for CFMs





Join the *Emerging Professionals* for upcoming webinars. The California Silver Jackets Team and the Floodplain Management Association (FMA) Emerging Professionals are partnering to host a series of CA Watershed University webinars focusing on leadership and soft skills for emerging professionals in the water resources field. All webinars are free of cost.

*Recent Leadership Webinar Series webinars and events:*

- ♦ Rise to Leadership and Importance of Succession Planning
- ♦ Emerging Professionals' Summer Social
- ♦ Chat with Ed James, GM for the Carson Water Subconservancy District
- ♦ Hamilton City Flood Damage Reduction and Ecosystem Restoration Project

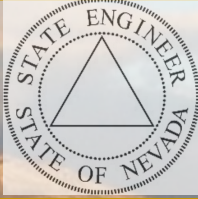
**With 50 informative webinars already presented, don't miss another one.**

**Simply sign up on [Eventbrite](#) by clicking the 'Follow' button and you'll automatically receive invites to attend upcoming events and all webinars.**

## **Floodplain Management Association *Emerging Professionals***

Striving to engage and support emerging Floodplain Management professionals, as well as students and academia in related fields of study, through mentorship, networking, and training.





## Upcoming Fall Training and Conference Announcements

- Sept. 22**      **Nevada Flood Mitigation & Funding Opportunities Workshop in Reno, NV (see event flyer on page 6)**
- Nov. 8 - 9**      **Nevada Watershed University Virtual Summit**
- Nov. 14 - 20**   **Nevada Flood Awareness Week: Events planned for Reno, Lockwood, Carson City, and Douglas County**

### **Nevada Floodplain Management News is a Publication of the Nevada Floodplain Management Program**

If you have any questions or comments regarding the content of this newsletter or are interested in contributing an article to a future Nevada Floodplain Management Bulletin, please contact Nevada Division of Water Resources, Public Outreach Manager: Carlos Rendo at [crendo@water.nv.gov](mailto:crendo@water.nv.gov)

