

CRS ANNUAL REPORT
(Period of July 1, 2018 to June 30, 2019)

On Activities Associated with the

Carson River Watershed
REGIONAL FLOODPLAIN MANAGEMENT PLAN

Submitted for:

DOUGLAS COUNTY
and
CARSON CITY
and
STOREY COUNTY

September 27, 2019

Prepared by:

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This annual report provides progress on Community Rating System (CRS) activities in the Carson River Watershed and outlines regional floodplain management actions which occurred during the period of July 1, 2018 to June 30, 2019 that can be credited toward the National Flood Insurance Program's Community Rating System (CRS). This report is provided to Carson City, Douglas and Storey County, which are CRS communities. The regional floodplain management work initiated, completed, or administered by the Carson Water Subconservancy District (CWSD) are documented in this report. The Carson River Watershed Regional Floodplain Management Plan informs and guides CWSD's floodplain management activities as part of the Integrated Watershed Management Process.

1.0 Background

In 2008, the [Regional FMP](#) and the [2013 Regional FMP Supplemental Update](#) were formally adopted by the boards of the Carson Water Subconservancy District, Douglas, Carson City, Lyon, and Churchill Counties in Nevada, and Alpine County in California to provide a consistent approach to planning efforts, programs and projects, help protect community members from flooding hazards, and conserve floodplain lands. The [2018 Regional FMP](#) was revised in 2017 – 2018 and adopted by Storey County in addition to those counties which also adopted the two prior versions. The 2018 Revision process and document are discussed in Sections 3.0 3.3 .

Federal Emergency Management Agency (FEMA) Cooperating Technical Partner

In 2005, CWSD became a [Cooperative Technical Partner \(CTP\) with FEMA](#). Through this program CWSD can apply for funding from FEMA to conduct floodplain mapping, flood studies, mitigation planning, public outreach, and other projects that reduce the flood risk in the Carson River Watershed. Since 2005, CWSD has received nine CTP funding grants from FEMA. Each grant application includes a Mapping Activity Statement (MAS) which identifies the various flood studies and activities that will be accomplished (See specifics in Section 3.3 and 3.5 below).

Federal Emergency Management Agency (FEMA) Risk MAP Program

In 2011, CWSD and various federal, state, and county government bodies signed the first [FEMA Region IX Risk MAP Charter](#) agreement formalizing collaborative efforts for flood management in the Carson River Watershed. In October 2016, Storey County became a signatory to the Charter. This collaboration enhances hazard mitigation plans, improves community resiliency after flooding, protects beneficial functions of floodplains, and raises awareness about local flood risks. A RiskMap Charter meeting was held February 4, 2019, to discuss and identify projects for CWSD to pursue for FEMA Mapping Activity Statement (MAS) 10 funding. The agenda and meeting notes are available at CWSD.

2.0 Carson River Coalition Stakeholder Process

Carson River Coalition Meetings

The Carson River Coalition (CRC) is a bi-state, multi-county stakeholder group, hosted by the Carson Water Subconservancy District (CWSD) and funded by CWSD and the Nevada Division of Environmental Protection (NDEP). Planners, engineers, floodplain managers, and other staff members from all watershed counties participate in this group. In addition, employees from many other local; state and federal entities; and non-governmental agencies such as conservation districts, State Floodplain Manager, State Division of Emergency Management, FEMA, US Bureau of Reclamation, National Weather Service and The Nature Conservancy participate in CRC working groups with private citizens. CRC meetings are open to the public; meeting information is available at www.cwsd.org.

3.0 Community Rating System Activities

The [2018 Regional FMP](#) divides implementation strategies into eight categories and provides suggested actions for each category. Table 3.1 correlates suggested actions in the 2018 Regional FMP to FEMA’s Community Rating System categories (Table 3.2). This section outlines CRS work completed by CWSD between July 1, 2017- June 30, 2018.

Table 3.1 Correlation of CRS Categories to Suggested Actions of 2018 Regional FMP

CRS Categories	2018 Regional Floodplain Management Plan Suggested Actions
310, 320, 350, 410, 420 , 450 510, 520, 530	Protect Natural Floodplain Function and Values
430	Set Higher Regulatory Standards
410, 440	Collect Flood Data Information and Maintenance
410, 430, 440, 510	Balance Channel Migration and Bank Erosion Monitoring
330	Increase Floodplain and Flood Hazard Outreach and Education
510, 540	Reduce Infrastructure Impact
440, 530	Map/Study Alluvial Fans
320, 450	Minimize Stormwater Impacts

Table 3.2 CRS activities outlined in CRS Coordinator’s Manual (2017)

CRS Category	ACTIVITY
300 Public Information Activities	310 Elevation Certificates 320 Map Information 330 Outreach Projects 340 Hazard Disclosure 350 Flood Protection Information 360 Flood Protection Assistance 370 Flood Insurance Promotion
400 Mapping and Regulatory Activities	410 Additional Flood Data 420 Open Space Preservation 430 Higher Regulatory Standards 440 Flood Data Maintenance 450 Stormwater Management
500 Flood Damage Reduction Activities	510 Floodplain Management Planning 520 Acquisition and Relocation 530 Flood Protection 540 Drainage System Maintenance
600 Flood Preparedness Activities	610 Flood Warning Program 620 Levee Safety 630 Dam Safety

The following sections provide an overview of CWSD’s work conducted for each CRS category during this reporting period.

300 - Public Information Activities

310 Elevation Certificate Activities: *The objective of this activity is to maintain correct Federal Emergency Management Agency (FEMA) Elevation Certificates and other needed certifications for new and substantially improved buildings in Special Flood Hazard Area (SFHA).*

CWSD Progress during this period on Elevation Certificates Activities include:

- While CWSD staff doesn’t specifically address Elevations Certificates in our public interactions, but we refer questions to the appropriate city or county staff.
-

320 Map Information Activities: *The objective of this activity is to provide inquirers with information about the local flood hazard and flood-prone areas that need special protection because of their natural functions.*

CWSD Progress during this period on Map Information Activities include:

- North Dayton Valley Area Drainage Master Plan outreach was conducted in Lyon County and Storey County. This project began in September 2017 will conclude in August 2019. This project included public outreach events at beginning and end of project which allowed community residents to review maps and provide data and photos to validate mapping results. This project was presented to community officials with alternatives to mitigate flood hazards.

- South Dayton Valley Area Drainage Master Plan outreach was conducted in Lyon County. This project began in September 2018 will conclude in August 2020. This project included public outreach kickoff event at beginning which allowed community residents to review maps and provide data and photos to validate mapping results. This project will be presented to community officials with alternatives to mitigate flood hazards.
- North Carson City Area Drainage Study was begun in September 2018 to study alluvial fan / stormwater flooding in Carson City. This study incorporates the results of Eagle Valley and Goni Flood mapping and will address alluvial fan flooding in Carson City. This project will include presentations to public and Carson City’s Board of Supervisors.

330 Outreach Project Activities: *The objective of this activity is to provide the public with information needed to increase flood hazard awareness and to motivate actions to reduce flood damage, encourage flood insurance coverage, and protect the natural functions of floodplains.*

CWSD Progress during this period on Outreach Project Activities include:

- The [2018 Regional FMP](#) was finalized and adopted by all 6 watershed counties. “This plan affirms the long-term vision of the Carson River Coalition which utilizes a “Living River” approach. This approach recognizes the importance of balancing the river’s natural floodplain form and function with various land uses.”¹
- CWSD staff assisted landowners with permitting for flood repairs from 2017 flooding damage in Douglas and Lyon County, Nevada
- CWSD utilized FEMA funding to assist counties in Nevada Flood Awareness Outreach Events and Flood Awareness Week (FAW) held November 4-10, 2018. CWSD staff met monthly throughout 2018-2019 with the FAW planning committee. Led by Nevada’s Floodplain Management office, activities included state and county proclamations, specific events, billboard advertisements and PSAs. Douglas County hosted a FAW event.
- CWSD staff highlights [NevadaFloods.org](#) website at its outreach events. Mas 8 FEMA grant supported additional advertising with radio spots, electronic signs.
- With funding from MAS 8, CWSD has expanded flood awareness to conduct flood awareness at schools and other local venues. Elements include:
 - Floodplain model is utilized to demonstrate to adults and students how floodplains work, flooding, risk, and the importance of floodplain protection.
 - “I Am Ready” flood preparedness activity books provided by US Army Corps of Engineers. These books are used for 2 purposes – teachers provide a count of how many they need, so it is easy to track participant numbers. These books are passed out the week prior to flood awareness event. Students demonstrate how they acted on their knowledge when they return with their emergency information page filled in. As a reward , they receive program swag with nevadafloods.org logo – yoyo’s, Great Basin wildflower seeds, flood awareness bag, etc..
 - A relay race game was developed to underscore the importance of disaster preparedness. Teams of 4-6 students race across field / gym and select items for a family of four with a dog

¹ 2018 Regional FMP , p. 8
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to grab as they “evacuate” After the race, students brainstorm about items they may have forgotten.

- This program was developed from January – June 2018; Events occurred from 1/1/2018 – 6/2019. CWSD and/or contractor participated in events in all watershed counties. 30 hours of classroom time provided the opportunity to present to over 1,000 children in the Carson River Watershed. Table 3.1 lists these events.

Table 3.1 School Outreach Events

School Outreach		
DATE (S)	LOCATION	EVENT/OUTREACH EFFORT
Carson City School Outreach		
2/28/2019	Carson City	Bordewich-Bray Elementary STEAM Night
3/13/2019	Carson River Park, Carson City	Empire Elementary RW- FAW
5/22/2019	Riverview Park, Carson City	Mark Twain Elementary RW FAW
5/28/2019	Carson City	Carson Middle School STEAM Night
5/31/2019	Linear Ditch Park, Carson City	Fremont Elementary RW - FAW
Churchill County School Outreach		
8/25/2018	Fallon, NV	Flood Awareness Booth RW - FAW
Douglas County School Outreach		
3/13/2019	Carson River Park, Carson City	Pinon Hills Elementary (Douglas County School) RW FAW
Lyon County School Outreach		
1/29/2019	Silver Springs, NV	Silver Stage Middle School RW - FAW
Storey County School Outreach		
3/1/2019	Virginia City, NV	Hugh Gallagher Elementary - RW FAW

- With Nevada Division of Environmental Protection CWSD staff is directing a Watershed Literacy Campaign. The goals of this program are to inform residents they live in a watershed, what a watershed is, how one’s actions impact the watershed, and actions to take to help keep the Carson River Watershed healthy. The Watershed Literacy Campaign includes multiple phases and include
 - Work with Nevada Department of Transportation to install “You are Entering the Carson River Watershed” signs.

340 Hazard Disclosure Activities: *The objective of this activity is to disclose a property’s potential flood hazard to prospective buyers before the lender notifies them of the need for flood insurance.*

CWSD staff coordinates with city/county staff at public meetings to provide hazard maps of its flood projects to residents in the Carson River Watershed. At these public meetings, community residents can ask questions, discuss their property with project engineers, resource professionals, and city/county staff to better understand their specific flood hazards. Messaging directs watershed residents to Nevada floods.org to discover their flood risk and determine whether or not they are required to purchase flood insurance. Staff also underscores the affordability of flood insurance for buildings not in SFHAs.

350 Flood Protection Information Activities: *The objective of this activity is to provide the public with information about flood protection that is more detailed than that provided through outreach projects.*

CWSD Progress during this period on Flood Protection Information Activities include:

- Public and Project outreach events provided Flood Protection Information to residents as listed in Table 3.2. These events include brochures, maps, and activity books to give detailed information about flood protection that is more detailed.

Table 3.2 Carson River Watershed Public and Project Outreach Events

Public and Project Outreach		
DATE (S)	LOCATION	EVENT/OUTREACH EFFORT
Alpine County Outreach		
12/18/2018	Markleeville, CA	Present FMP for Adoption Alpine County, CA Board of Supervisor's Meeting
6/28/2019	Markleeville, CA	Present Ordinances Alpine County, CA Planning Commission Meeting
Carson City Outreach		
11/5/2018	Carson City, NV	Present FMP for Adoption Carson City Board of Supervisor's Meeting
Churchill County Outreach		
1/7/2019	Fallon, NV	Present FMP for Adoption at Churchill County Board of Commissioners Meeting
Douglas County Outreach		
11/5/2018	Minden, Nevada	Present FMP for Adoption at Douglas County Board of Commissioners Meeting
11/6/2018	Gardnerville, NV	Douglas County Flood Awareness Event
5/11/2019	Gardnerville, NV	Douglas Safety Day at Lampe Park
Lyon County Outreach		
12/20/2018	Yerington, NV	Present FMP for Adoption at Lyon County Board of Commissioners Meeting
6/1/2019	Dayton, NV	Oodles of Noodles in Downtown Dayton
Storey County Outreach		
12/4/2018	Virginia City, NV	Present FMP for Adoption Storey County Board of Commissioners Meeting

- CWSD staff created a Carson City library display for the month of December.
- CWSD's website provides link to the Floodplain Management Plan and its updates, on www.cwsd.org.
- County floodplain and emergency manager information are being updated and will be available on the Flood Awareness section on www.cwsd.org.
- Floodplain protection and flooding articles were included in CWSD's newsletter, "[Watershed Connections](#)" that is distributed to over 1000 individuals throughout the six counties located in the Carson River watershed.

360 Flood Protection Assistance: The objective is to provide one-on-one help to people who are interested in protecting their property from flooding.

CWSD Progress during this period on Flood Protection Assistance Activities include:

- CWSD staff works with people who enquire about how they can protect their property from flooding in flood outreach efforts.
- CWSD staff also refers property owners with specific questions to appropriate city or county staff member.

370 Flood Insurance Promotion: *The objective of this activity is to improve flood insurance coverage in the community.*

CWSD Progress during this period on Flood Insurance Promotion Activities include:

- CWSD staff coordinates with staff from counties, state and FEMA at various outreach events listed in sections 320, 330 and 340 to include flood insurance promotion. Flood awareness week events include FEMA flood insurance specialists so residents can ask specific questions. Common themes of this messaging include why it may be prudent to purchase even if one is not required; check out Nevadafloods.org to know your flood risk; and money spent on flood insurance (aka mitigation) reduces disaster costs.

400 Mapping and Regulatory Activities

410 Flood Hazard Mapping Activities: *The objective of this activity is to improve the quality of the mapping that is used to identify and regulate development as risk from flood hazards.*

CWSD Progress during this period on Flood Hazard Mapping Activities include:

- In response to FEMA comments regarding the Carson River Physical Map revision, additional model runs are required to complete project. This project supports FEMA's map modernization program. These maps have been in review since submission in March 2017. Additional funding has been awarded and these model runs will be completed by the end of 2019. It is anticipated maps will become effective in 2020.
- Carson City Flood Insurance Rate Maps from Physical Map Revision Project became effective 6/20/2019.
- CWSD continues to work with FEMA as a Cooperating Technical Partner. It is working on MAS 7, MAS 8, MAS 9 and has applied for MAS 10.
- As part of Nevada Silver Jackets program, CWSD worked with the US Army Corps of Engineers (USACE) to create planning level maps of selected alluvial fans in the Carson River Watershed. The next phase of USACE alluvial fan map project began in in early 2019.
- As part of MAS 8, CWSD mapped alluvial fan drainages in North Dayton Valley in Lyon County and Storey County.
 - Dayton Valley Area Drainage Master Plan was conducted in North Dayton Valley and encompasses alluvial fan / stormwater flooding in in Lyon County and Storey County. This project began in September 2017 will conclude in August 2019. This project provided data to community officials to plan for future flood events. It also included public outreach events which allowed community residents to provide data and photos to validate mapping results.
- As part of Mas 9 grant,
 - South Dayton Valley Area Drainage Master Plan was begun in September 2018 to study alluvial fan / stormwater flooding in South Dayton Valley in Lyon County. This project will

conclude in August 2020. This project will provide data to community officials to plan for future flood events. A public outreach event has occurred, which allowed community residents to provide data and photos to validate mapping results.

- North Carson City Area Drainage Study was begun in September 2018 to study alluvial fan / stormwater flooding in Carson City. This study incorporates the results of Eagle Valley and Goni Flood mapping and will address alluvial fan flooding in Carson City. This project will conclude in August 2020.
- Douglas County: Pinenut Letter of Map Revision
- Mas 10 grant was submitted for FY 2018 and a preliminary evaluation of a Physical Map Revision project in Churchill was conducted. As of the writing of this report, this grant was awarded. Work will begin in September 2019 to run through 2022.

Projects in Mas 10 are intended to:

- Conduct Physical Map Revision in Churchill County.
- Develop an Area Drainage Master Plan for Ruhenstroth in Douglas County.
- Develop an Area Drainage Study for West Carson City.
- Continue Flood Awareness program.

420 Open Space Preservation: *The objectives of this activity are to:*

- 1) *Prevent flood damage by keeping flood-prone lands free of development, and*
- 2) *Protect and enhance the natural functions of floodplains.*

CWSD Progress during this period for Open Space Preservation efforts include:

- The *Living River Approach* was highlighted during the adoption process. The *Living River Approach* in the Regional FMP supports river and floodplain management which recognizes the importance of balancing the natural floodplain form and function of the river. During adoption presentations, it was stressed that \$1 in mitigation saves communities \$6 in disaster costs.²
- CWSD helped fund the [Alpine Watershed Group](#) (AWG) in the Upper Carson River Watershed. AWG works to preserve and enhance the natural system functions in Alpine County's watersheds for future generations through collaboration, education, and proactively implementing stewardship projects.

430 Higher Regulatory Standards: *The objective of this activity is to credit regulations to protect existing and future development and natural floodplain functions that exceed the minimum criteria of the National Flood Insurance Program (NFIP).*

CWSD Progress during this period on Higher Regulatory Standards Activities include:

- CWSD is working collaboratively with City or County planners and floodplain managers to update local flood regulations. Draft ordinances were finalized per city or county's direction to incorporate the final model update protocol, any specific mitigation measures, and different (higher) city or county regulatory standards. These ordinances are being presented for adoption by boards in Carson City, Douglas County, and Lyon County in fall 2019.
- Alpine County adoption process will take longer since California requires it goes through CEQA review before final adoption. However, county staff has worked to inform planning commission, residents and county board of supervisors of the benefits of this plan.

² <https://www.nibs.org/news/381874/National-Institute-of-Building-Sciences-Issues-New-Report-on-the-Value-of-Mitigation.htm>
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- Storey County used the same language template and chose to fund an update of their floodplain ordinances in conjunction with the Project.

440 Flood Data Maintenance: *The objective of this activity is to make community floodplain data more accessible, current, useful, and/or accurate so that the information contributes to the improvement of local regulations, insurance rating, planning, disclosure, and property appraisals.*

CWSD Progress during this period on Flood Data Maintenance Activities include:

CWSD has several website pages which directs watershed residents to community floodplain data with links to NevadaFloods.org and the FEMA Map Service Center.

450 Stormwater Management: *The objective of this activity is to prevent future development from increasing flood hazards to existing development, to protecting existing hydrologic functions within the watershed, and to maintain and improve water quality.*

CWSD Progress during this period on Stormwater Management Activities include:

- CWSD promotes Low Impact Development (LID) Use in the Carson River Watershed. In 2018, CWSD received Clean Water 208 funding. In discussion with the various counties, it was decided the funding should be utilized to update LID ordinances throughout the watershed. In February 2018, CWSD hired a consultant to update LID ordinances. This ongoing project examined existing LID language and will update LID ordinance language in Carson River Watershed communities. Although funded from Nevada Division of Environmental Protection, this language will sync with new floodplain ordinances with a focus of reducing stormwater. LID projects which capture polluted stormwater also benefit a community's floodplain management program.
- Several area drainage studies (refer to section 410) are being conducted in the Carson River Watershed. These studies assist city/county staff and board members by informing decisions by identifying areas likely to flood, considering infrastructure, mapping flooding, and providing alternative solutions to reduce alluvial and stormwater flooding.
- Carson City: The Saliman/Voltaire LOMR was submitted to FEMA in July 2019 and provides flood data to the county's floodplain manager to plan for stormwater effects in South Carson City.

500 Flood Damage Reduction Activities

510 Floodplain Management Planning: *The objective of this activity is to credit the overall strategy of programs, projects, and measures that will reduce the adverse impact of the hazard on the community and help meet other community needs.*

CWSD Progress during this period on Floodplain Management Planning activities include:

River Corridor/Floodplain Management Working Group

The River Corridor Working Group was renamed the Floodplain Management Working Group and is a sub-committee of the CRC with a focus on regional floodplain management issues. This group meets on a regular basis. This group met 10/25/2018 to hear about floodplain projects, coordinate Regional FMP adoption by city or county boards, and kick off ordinance update project. The group also discussed implementation of river

rehabilitation and flood projects funded by other state and federal entities. [Agendas and Meeting notes](#) are available on our website.

CWSD 2018 Regional Floodplain Management Plan & Discovery Report

The Floodplain Management Working group was the nexus for adopting the 2018 Regional Floodplain Management Plan. In 2017- 2018, the Floodplain Management Group guided the revision of the Regional FMP. The plan was finalized and approved by CWSD's board in October 2018. CWSD & city or county staff worked together to present the Regional FMP for adoption to each city or county November 2018 – January 2019. The [2018 Regional FMP](#) was adopted by all six counties in the watershed: Alpine County, California; Carson City, Churchill County, Douglas County, Lyon County, and Storey County, Nevada. This was the first time Storey County, Nevada, adopted the Regional FMP. The 2018 FEMA Discovery update is included in the Appendices of the 2018. Substantial changes to the 2018 Regional FMP included:

- Reformatted document
- Suggested Actions were renumbered and broken into 8 categories and correlated to CRS activities.
 - Two categories of Suggested Actions were added: Alluvial Fan Flood Hazard Reduction and Stormwater Mitigation
 - Documented city or county progress of suggested actions, and
- Updated Rapid Evaluation. This 3 hour intensive table top exercise which reviewed river reaches in each city or county with staff members representing city or county, state water quality, floodplain managers, and in some cases, other interested parties.

The Regional FMP's purpose is to create long-term vision and strategies for floodplain management to protect watershed resources and mitigate flood hazard impacts in the Carson River Watershed. The Regional FMP also identifies responsible parties and funding sources for implementation.

The regional plan objectives include the following:

- Manage economic development without sacrificing floodplain and river form and function;
- Ensure public safety upstream and downstream;
- Protect property rights while conserving natural resources;
- Protect and improve wildlife habitat and water quality;
- Provide and maintain river continuity and connection of the river to its floodplain;
- Promote conservation of lands within the river corridor.

Risk MAP Discovery

In 2011, CWSD working closely with local watershed communities staff members, conducted the Risk MAP Discovery process to better understand the local flood risk, mitigation efforts, etc., and to spur watershed-wide discussions about increasing the area's resilience after flooding. The [FEMA RiskMAP Discovery Report](#) was updated in 2018 and is part of the [2018 Regional FMP](#). This Regional FMP will be updated in 2023.

520 Acquisition and Relocation: *The objective of this activity is to encourage communities to acquire, relocate, or otherwise clear existing building out of the flood hazard area.*

CWSD Progress during this period on Acquisition and Relocation activities include:

The Regional FMP stresses the benefits of keeping floodplain lands free of structures.

530 Flood Protection: *The objective of this activity is to protect buildings from damage by*

- *Retrofitting the building so they suffer no or minimal damage when flooded and/or*

- *Constructing small flood control projects that reduce the risk of flood waters' reaching the buildings.*

CWSD did not conduct any Flood Protection activities this reporting period.

540 Drainage System Maintenance: *The objective of this activity is to ensure that the community keeps its streams, channels, and storage basins clear of debris so that their flood carrying and storage capacity are maintained.*

CWSD Progress during this period on Drainage System Maintenance activities include:

- CWSD works with communities to identify opportunities throughout the watershed for the enhancement and/or design and maintenance of roads, culverts, grade controls, and bridges to accommodate floodwaters better, protect floodplains, and decrease harmful erosion.
- CWSD continues to fund conservation districts in the watershed to monitor known hazard areas and channel migration to document and update changes to the river channel (SA-22). Specific projects funded in 7/1/2018 – 6/30/2019 include:
 - Douglas County: Carson Valley Conservation District - Carson River Bioengineering, Maintenance and Debris Removal
 - Lyon County: Dayton Valley Conservation District- Post-Flood Repairs Project
 - Churchill County: Lahontan /Stillwater Conservations District - Channel Clearing and Snagging
- CWSD continues to fund Alpine Watershed Group (AWG) in Alpine County, California. AWG is the first line of defense for flood hazard mitigation in the Watershed. This organization's ongoing work to rehabilitate and restore river function in Alpine County benefits the entire watershed.
 - Grover Meadow Restoration & ADA Access Project. California State Parks is the lead on this project. The purpose of the Grover Hot Springs Meadow Restoration Project is to reduce user impacts throughout the meadow and to rehabilitate the existing impacted areas. By decommissioning user-created trails and stabilizing banks along Hot Springs Creek, the project will reestablish the continuity of flow through the meadow. The project will also develop interpretive signage along an elevated ADA trail in order to educate visitors about the local ecology and sensitivity of the wetland area.
 - Faith and Forestdale Project – American Rivers is the lead on this project. The overarching goal of this project is to improve hydrologic and ecosystem processes in these two meadows located in the headwaters of the West Carson River Watershed. AWG's involvement includes outreach, education, and monitoring of the sites.
- In Alpine County, the Friends of Hope Valley in partnership with the Alpine Watershed Group continue to plant willow stakes and complete bio-engineering bank stabilization projects with volunteers in Hope Valley. CWSD supports Markleeville Creek Day and the Alpine County events with staff assistance and funding so these organizations can continue their monitoring, bank stabilization, and rehabilitation efforts.

600 Warning and Response

610 Flood Warning and Response: *The objective of this activity is to encourage communities to ensure timely identification of impending flood threats, disseminate warning to appropriate floodplain occupants, and coordinate flood response activities to reduce the threat to life and property. This activity focuses on the community's emergency management actions and plans, and efforts coordinated through the community's emergency manager. Therefore, the emergency manager should be the point of contact.*

CWSD Progress during this period on Flood Warning and Response activities include:

- [Emergency manager contact information](#) is included in the 2018 Regional FMP. This contact information for each watershed community is also posted on CWSD's website. This information is updated annually.
- CWSD's 2018 Regional FMP has identified data need to improve warning and response.
 - Update and maintain elevation reference marks (ERMs)
 - Establish and maintain a rain gage data network in local jurisdictions
 - Develop and coordinate watershed-wide photo-monitoring program to consistently documents flooding and flood hazards.

620 Levees: *The objective of this activity is to encourage communities to properly inspect and maintain levees and to identify impending levee failures in a timely manner, disseminate warning to appropriate floodplain occupants, and coordinate flood response activities to reduce the threat to life and property. This activity focuses on the community's emergency management actions and plans, and efforts coordinated through the community's emergency manager. Therefore, the emergency manager should be the point of contact, and he/she should coordinate with the agency responsible for the levee.*

CWSD did not conduct any Levee activities this reporting period.

620 Dams: *The objective of this activity is to encourage states to provide dam safety information to communities and to encourage communities, in turn, to provide timely identification of an impending dam failure, disseminate warning to those who may be affected, and coordinate emergency response activities to reduce the threat to life and property.*

CWSD did not conduct any Dam activities this reporting period.

4.0 Future Activities

CWSD has multiples projects which will occur in the next two years which are funded by local, state or federal funds.

FEMA Cooperating Technical Partner Grants:

The Mapping Activity Statement 7 concluded July 31, 2019. The Voltaire / Saliman LOMR will be the outcome and is in FEMA review.

The Mapping Activity Statement 8 projects will wrap up August 2019 and include:

- Floodplain Ordinance Update - Throughout fall of 2019, CWSD will present updated floodplain ordinances to planning commissions before going before city or county boards for adoption in Carson

City, Douglas County, Lyon County. Storey County is funding its own floodplain ordinance update, but is utilizing draft language provided by CWSD.

- Alpine County, California must complete CEQA process before it can move forward with floodplain ordinance adoption.
- North Dayton Valley Area Drainage Master Plan project in Lyon and Storey Counties will be completed August 2019.

The Mapping Activity Statement 9 projects are anticipated to conclude in late 2020 include:

- North Carson City Drainage Study
- Pine Nut Wash Letter of Map Review (LOMR) in Douglas County.
- South Dayton Valley Area Drainage Master Plan in Lyon County.
- Northern Nevada Public Outreach Flood Awareness Program 2019-2020 in all watershed counties.

The Mapping Activity Statement 10 is just kicking off and will conclude in late 2022 and includes:

- West Carson City Drainage Study
- Physician Map Revision will be updated downstream of Lahontan Reservoir in Churchill County.
- Ruhenstroth Area Drainage Master Plan in Douglas County.
- Additional model runs to Complete PMR in Carson Valley portion of the Carson River in Douglas and Alpine Counties will be completed.
- Northern Nevada Public Outreach Flood Awareness Program 2021-2022 all watershed counties.

Silver Jackets Project: USACE is providing planning level maps of Alluvial Fans in Carson City and Douglas County will conclude in 2020. USACE has identified the need of Lyon County to acquire LIDAR along the Highway 50 corridor East of Dayton as next potential Silver Jackets project.

Nevada Division of Environmental Protection has funded for Integrated Watershed Management through 2022. This program facilitates CRC stakeholder process for the Carson River Watershed.

US Bureau of Reclamation Grant to develop a Water Marketing Strategy for the Carson River Watershed. The aim of this grant is the sustainability of the Watershed and considers the balance between users and considers benefits of preserving the natural floodplain functions.

CWSD is participating in Storey County Hazard Mitigation Plan update and will be added as a jurisdiction in order to be eligible to apply for HMGP (BRIC) funding. CWSD desires to use this funding to develop a Carson River Hazard Mitigation Plan that will inventory structures on the river. Having this plan in place will assist communities to effectively respond when flood disasters strike.

Local funds have been approved for FY 2020 for Conservation Districts for Weed Abatement and River Rehabilitation and Stabilization projects.

Please contact CWSD staff with any questions or comments regarding the above report:

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