

CRS ANNUAL REPORT
(Period of July 1, 2017 to June 30, 2018)

On Activities Associated with the

Carson River Watershed
REGIONAL FLOODPLAIN MANAGEMENT PLAN

Submitted for:

DOUGLAS COUNTY
and
CARSON CITY
and
STOREY COUNTY

August 16, 2018

Prepared by:



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This annual report provides progress on the [Carson River Regional Floodplain Management Plan's \(Regional Plan\)](#) suggested actions for Carson City, Douglas and Storey County. This report outlines regional floodplain management actions which occurred during the period of July 1, 2017 to June 30, 2018 that can be credited toward the National Flood Insurance Program's Community Rating System (CRS). The regional floodplain management work initiated, completed, or administered by the Carson Water Subconservancy District (CWSD) are documented in this report.

1.0 Background

In 2008, the Regional Plan was 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. A [Supplemental Update of the Regional Plan](#) was subsequently adopted by these five counties in 2013. A small portion of Storey County is within the Carson River Watershed but its board has not formally adopted the Regional Plan or its Supplemental Update. The Regional Plan and FEMA Discovery Revision began in mid-2017 and is scheduled to be completed by September 19, 2018 (See specifics in Section 2.1.c.1 below). In addition to an updated Discovery Report, substantial changes to the 2018 Regional Plan include:

- Reformatted Document;
- Revised suggested actions
 - Suggested actions were renumbered and now includes 45 suggested actions broken into 8 categories.
 - Two categories were added: Alluvial Fan Flood Hazard Reduction and Stormwater Mitigation;
- Documented County progress of suggested actions; and
- Updated Rapid Evaluation

The Regional Plan'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 Plan 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.

In 2005, CWSD became a Cooperative Technical Partner (CTP) with FEMA. Through this program CWSD can apply for 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 eight 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).

2.0 Activities Conducted for this Reporting Period

2.1 Stakeholder Involvement

Several stakeholder groups provide watershed level input and assistance in the implementation of the Regional Plan.

2.1. a 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.

A two-day CRC Watershed Forum was held on April 11-12, 2018. The first day of the conference focused on floodplain management. A conference schedule is available upon request.

2.1. b River Corridor/Floodplain Management Working Group –The River

Corridor/Floodplain Management Working Group is a sub-committee of the CRC with a focus on regional floodplain management issues. This group met three times (8/15/2017, 10/24/2017, and 1/23/2018) during the last year. These meetings mainly focused on the 2017 Discovery Update and the 2018 Regional Plan Revision. Members of the group participated in the process, provided local data and input for revisions. The group also discussed implementation of river and flood projects, and plans for FEMA funding. [Agendas and Meeting notes](#) are available on our website. In addition, a Carson River Regional Flood Management Workshop was conducted as a part of the CRC forum on April 11, 2018, to finalize the Discovery Report and first review of the Regional Plan Revision.

2.1.c 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 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 5, 2018, to discuss projects CWSD should pursue for FEMA Mapping Activity Statement (MAS) 9 funding. The agenda and meeting notes are available at CWSD.

2.1.d. 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. In 2017, CWSD received a grant to hire a consultant to update the FEMA RiskMAP Discovery Report. During this reporting period, the consultant held several meetings with CWSD staff and counties, and the Carson River Coalition stakeholder group. At these meetings, suggestions for flood projects were gathered and prioritized throughout the watershed. The report was completed April 2018.

2.2 Low-Level Flooding/Stormwater Management

No action related to MS4 was taken by CWSD during this reporting period.

2.2.a Promote 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.

3.0 Implementation of Suggested Actions

The [Regional Floodplain Management Plan](#) divides implementation strategies into six categories and provides suggested actions for each category. The following sections provide an overview of the work conducted for each category during this reporting period.

3.1 Protect Floodplain Natural Functions and Values and Responsible Entities

Progress during this period on Suggested Actions 1 -10 of the Regional Plan include:

- Weed management projects were conducted throughout the watershed.
- Streambank stabilization projects were delayed in 2017 due to high runoff. However, during this period several bank stabilization and clearing / snagging projects were identified.

- CWSD helps fund the Alpine Watershed Group (AWG) to continue their work in the Upper Carson River Watershed.
 - AWG has partnered with American Rivers on Faith Valley and Forestdale Meadow Restoration Planning. A project launch meeting took place in 2017. Fieldwork for the baseline assessment has been completed, and AWG will assist with local outreach to present the data and draft designs to the public in Fall of 2018.
 - AWG has partnered with California State Parks on the Grover Meadow Restoration Project, which includes removing trails impacting Grover Meadow, stabilizing a reach of Hot Springs Creek within the meadow, and creating interpretive signage for the State Parks' new ADA accessible trail, including signs on meadow function, habitat and wildlife, and vegetation. The new trail includes elevated boardwalks and permeable causeways that allow for hydrologic connectivity and ADA access from the campground to the hot springs.

3.2 Higher Regulatory Standards

CWSD is working collaboratively with County planners and floodplain managers to update local flood regulations.

Progress during this period on Suggested Actions 11 – 13 of the Regional Plan include:

- In 2017, CWSD received a grant to update each county's floodplain ordinances to be consistent with new Flood Insurance Rate Maps (FIRMs) in Douglas, Lyon and Carson City counties. These draft ordinances are being modified per County to incorporate the final model update protocol, any specific mitigation measures, and different (higher) County regulatory standards.
- As mentioned in section 2.2. of this report, LID ordinance language is also being revised. Although funded from Nevada Division of Environmental Protection, this language will sync with new floodplain ordinances. LID projects which capture polluted stormwater also benefit a community's floodplain management program.

3.3 Flood Data Information and Maintenance

Progress during this period on Suggested Actions 14 – 22 of the Regional Plan include:

- MAS 4 completed final phase of the Carson River Physical Map revision supports FEMA's map modernization program (SA – 15). These maps have been in review since submission in March 2017 with the anticipation they will be effective by the end of 2018.
- CWSD continues to work with FEMA as a Cooperating Technical Partner. It is working on MAS 7 and MAS 8 and has applied for and received funding for MAS 9 (SA- 16).

- As part of MAS 7, CWSD worked with the US Army Corps of Engineers (USACE) to produce preliminary maps of alluvial Fans in the Carson River Watershed. This white paper will be included in the 2018 Regional Plan revision. It is a goal to develop this preliminary data with USACE into planning level documents.
- In the fall of 2017, USGS contracted to fly LIDAR data collected for parts of Reno, Storey County, Lyon County, Douglas County and Carson City. This will provide detailed topographic data for several studies in the Carson River Watershed. to provide a higher level of detail which can be implemented in future FEMA mapping efforts.
- As part of MAS 8, CWSD is also conducting an area drainage master plan study for Storey and Lyon Counties in North Dayton Valley.
- Mas 9 grant was submitted for FY 2018, as of the writing of this report, this grant was awarded.

3.4 Channel Migration and Bank Erosion Monitoring

Progress during this period on Suggested Actions 23 – 29 of the Regional Plan include:

- CWSD continues to fund Carson Valley Conservation District (CVCD); Dayton Valley Conservation District (DVCD); and Lahontan and Stillwater Conservation Districts (LSCD) to monitor known hazard areas and channel migration to document and update changes to the river channel (SA-23).
- CWSD funded DVCD and CVCD to complete a winter flood damage inventory in federally declared disaster areas and met with FEMA officials in Spring of 2017.
- CWSD assisted in funding CVCD bio-engineering techniques used by the Carson Valley Conservation District and The Nature Conservancy at River Fork Ranch along Brockliss Slough and the East Fork to promote use of non-structural and bio-engineering for river restoration and rehabilitation projects (SA-28).
- 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.
- AWG, in partnership with Humboldt-Toiyabe National Forest (USFS), Bureau of Land Management (BLM), Friends of Hope Valley and Alpine County, was awarded a restoration grant from California State Parks' Off Highway Motor Vehicle Recreation (OHMVR) program.
- 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 Aspen Festival with staff assistance and funding so these organizations can continue their monitoring, bank stabilization, and rehabilitation efforts.

3.5 Floodplain and Flood Hazard Outreach and Education

Progress during this period on Suggested Actions 30 – 34 of the Regional Plan include:

Progress during this period:

- MAS 7 provided CWSD funding to assist counties in Nevada Flood Awareness Week (FAW) held Nov. 12-17th, 2017. CWSD staff met monthly throughout 2017 with the FAW planning committee. Led by Nevada’s Floodplain Management office, activities included state and county proclamations, specific events, bill board advertisements and PSAs. Douglas County & Carson City hosted FAW events.
- With funding from MAS 8, CWSD has expanded flood awareness to conduct flood awareness at schools and other local venues. The floodplain model is utilized to demonstrate to adults and students how floodplains work, flooding, risk, and the importance of floodplain protection. Where appropriate, floodplain videos are also utilized. A relay race game was developed to underscore the importance of disaster preparedness. This program was developed from January – June 2018. CWSD and/or contractor participated in:
 - Outreach events were held throughout Spring 2018 at Eagle Valley Middle School STEAM Night and Fremont Elementary in Carson City; Scarcelli Elementary in Douglas County; Oodles of Noodles in Lyon County.
 - Additional Outreach events are planned in summer and fall at:
 - i. Agricultural Safety Day in Carson City - July 28, 2018
 - ii. National Night Out in Carson City – August 7, 2018
 - iii. Cantaloupe Festival in Churchill County – August 25- 26, 2018
 - iv. Dayton Valley Days – September 15, 2018 (tentative)
 - CWSD staff and contractor are working with county staff to schedule flood outreach in fall 2018 at:
 - i. Silver Stage High School in Lyon County
 - ii. Hugh Gallagher Elementary School/ Storey County High School in Storey County
- CWSD staff is working with the FAW committee monthly to plan and implement Flood Awareness Week to be held Nov. 4-10, 2018. A website was refreshed in 2018 and is updated with current information regularly. The website is hosted by Nevada Division of Water Resources (NDWA) at NevadaFloods.org. The FEMA grant will support additional advertising with radio spots, electronic signs, and work with county staff on library displays in the Carson River Watershed for 2018.
- CWSD will continue to utilize “Floodplains as Community Assets” videos (A 30 second PSA, and 3 other short videos aimed toward public officials, the development community, and the agriculture/public) in outreach and

education. The videos are available on the [Carson River Watershed YouTube Channel](#).

- Watershed 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 shortly 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.

3.6 Reduction of Infrastructure Impacts

There are 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.

Progress made during this period:

- CWSD recently completed the Johnson Lane Area Drainage Master Plan in Douglas County. This study examined the area as a whole and explored different alternatives to mitigate floods. This project included several public meetings. The kickoff off meeting had over 100 attendees and the findings meeting on April 10, 2018 was attended by approximately 200 residents.
- CWSD recently began an Area Drainage Master Plan for the North Portion of Dayton Valley in Lyon County and Storey County. This study examined the area as a whole and explored different alternatives to mitigate floods. The kick-off meetings were well attended; Storey County had approximately 30 people and Lyon County had approximately 80 residents.
- CWSD continues to meet with agricultural producers, the Counties, Nevada State Lands to discuss alternatives for fixing and/or replacing grade control structures damaged during winter/spring flooding of 2017.

4.0 Future Activities

Throughout fall of 2018, CWSD will present the 2018 Regional Flood Management Plan to each county for adoption. Once adopted, CWSD will continue to diligently work to coordinate the completion of the 45 suggested actions in the Floodplain Management Plan 2018 revision in the Carson River Watershed. Updated floodplain ordinances will be finalized and presented to county boards. In addition, will work with flood awareness working group led by state floodplain manager to provide outreach and education to counties throughout the watershed. These floodplain management activities are dependent on the partnership with each county.

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

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