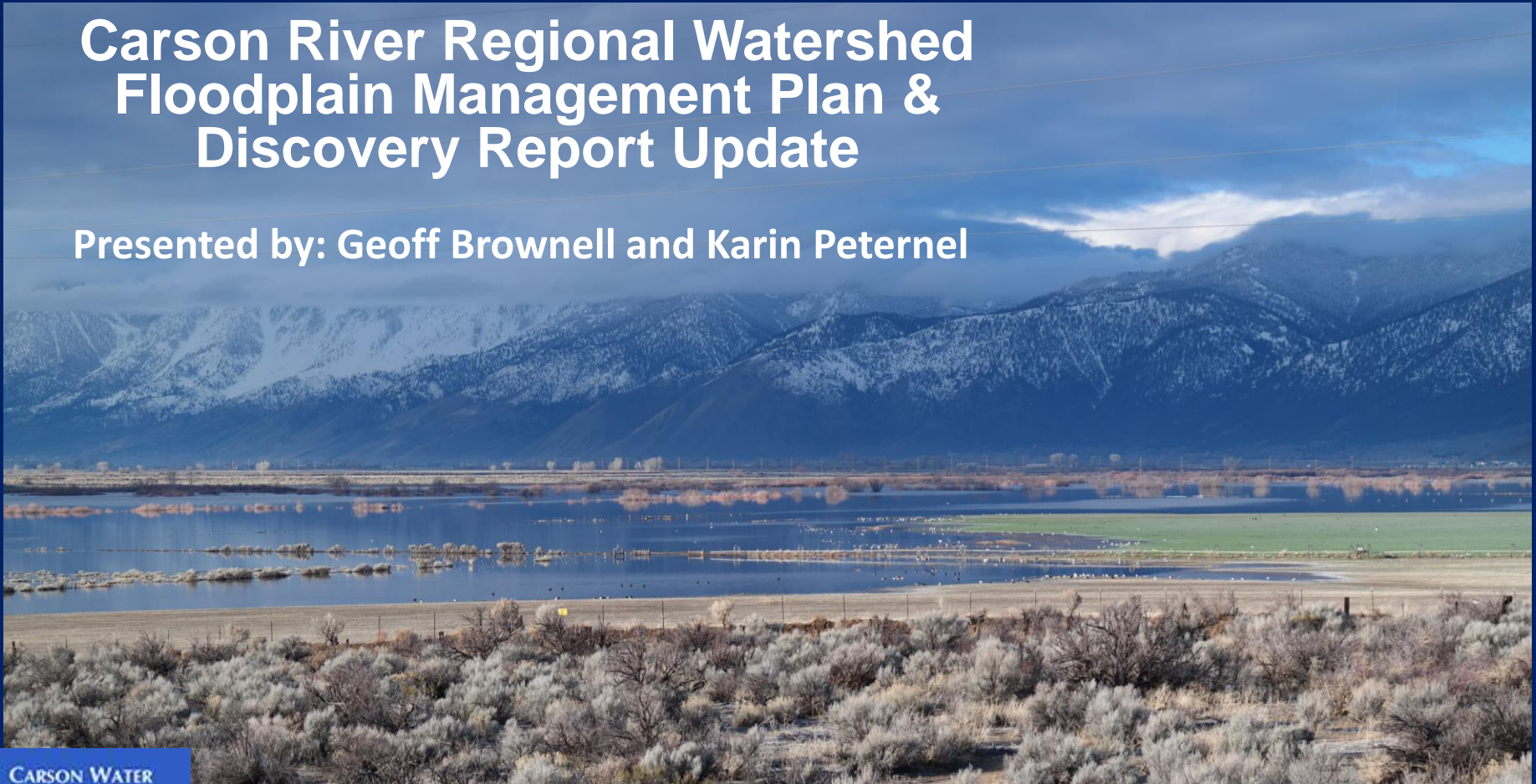


Carson River Regional Watershed Floodplain Management Plan & Discovery Report Update

Presented by: Geoff Brownell and Karin Peternel



Carson River Watershed Committee

August 15, 2018

Fallon, NV

Overview of Presentation

- Why are we here?
- How are we here?
- Why is this important?
- Project timeline
- Stakeholders
- Stakeholder Meetings
- Components of the RFMP
- Next Steps



Why are we here?

- FEMA requires updates to FMP and Discovery Report every 5 years (2008, 2013, 2018)
 - Identify new hazards
 - Identify hazard mitigation
 - Suggested Actions (8 categories)
 - FMP includes components necessary to receive funding

“A floodplain management plan is a written description of the flood risks, and actions a community will take to address how to mitigate those flood hazards”



Discovery Report

FEMA Region IX

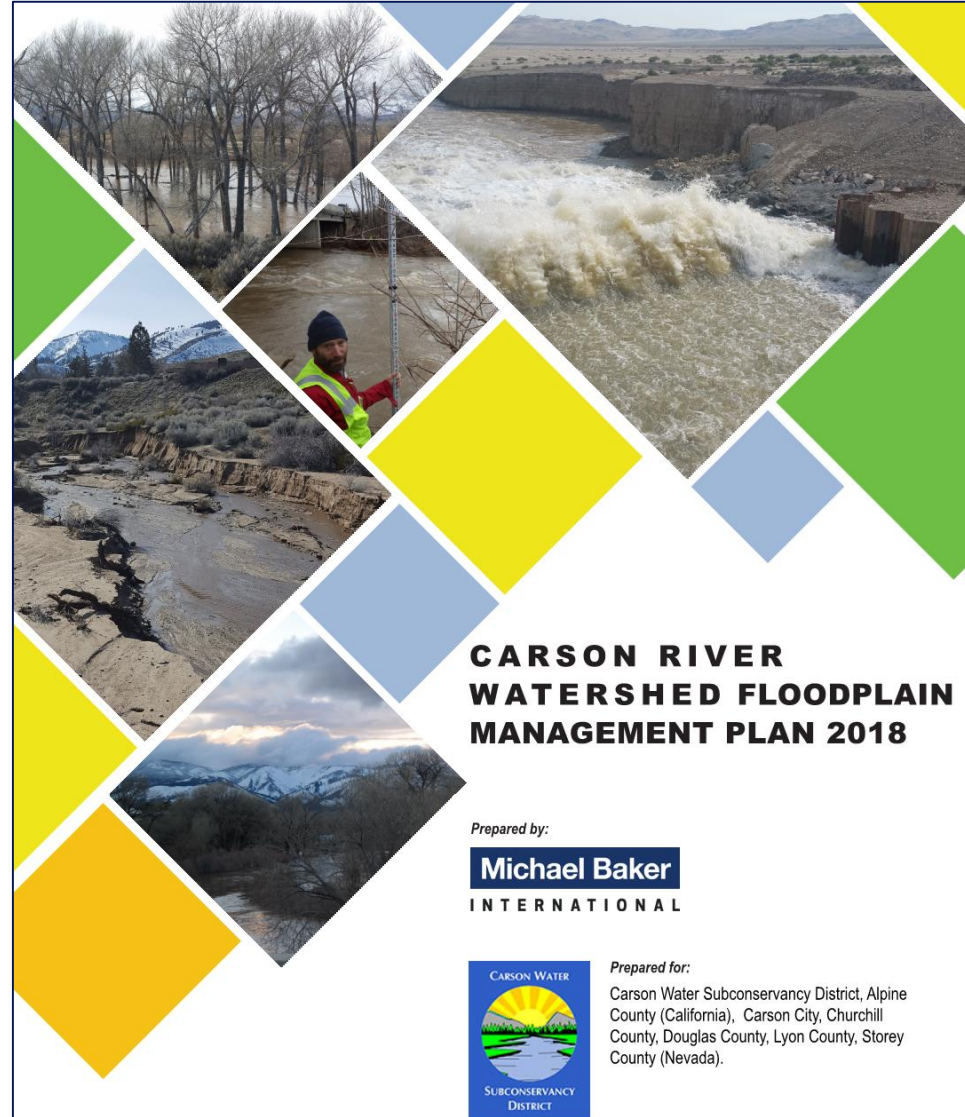
Carson River Watershed, HUC 16050201, 16050202, 16050203

Alpine County, California
Douglas County, Churchill County,
Lyon County, Carson City,
and Storey County, Nevada

Report Number 2
January 2018



FEMA



CARSON RIVER WATERSHED FLOODPLAIN MANAGEMENT PLAN 2018

Prepared by:

Michael Baker
INTERNATIONAL



Prepared for:

Carson Water Subconservancy District, Alpine
County (California), Carson City, Churchill
County, Douglas County, Lyon County, Storey
County (Nevada).

How are we here?

- CWSD is a Cooperating Technical Partner (CTP) with FEMA
 - Regional collaboration provided by one over-arching group:
 - Hazards within the region are recognized, prioritized, addressed
 - Consistent messaging to jurisdictions and residents is effective through outreach and education.
- FEMA carries out flood hazard mitigation activities through the CTP program
 - Providing funding to local communities for actions
 - Flood hazard map revisions,
 - Flood hazard mitigation planning, and
 - Outreach and education



Why is this important?

- Prevent/minimize economic losses
 - Individuals – property, home
 - Jurisdictions – damage to infrastructure
- Flood insurance available to local communities
 - Participation in the NFIP
- Community Rating System (CRS)
 - Actions required by jurisdictions to maintain flood insurance premium reductions
- FUNDING – Maintain activities to continue to receive necessary funding for prevention and mitigation



Project Timeline

Meeting	Agenda	Date
#1	Internal Kick-Off	July 13, 2017
#2	Stakeholder Meeting - Discovery Kick-Off	August 15, 2017
#3	Stakeholder Meeting - Draft Discovery Report	October 24, 2017
#4	Stakeholder Meeting - Discovery Final / RFMP Kick-Off	January 23, 2018
#5	Carson River Watershed Forum – Draft RFMP	April 11, 2018
#6	Carson River Watershed Committee Presentation	August 15, 2018

Stakeholders

- Project Team
 - Carson Water Subconservancy District
 - Michael Baker International
- Local Community partners and officials
 - Alpine, Churchill, Douglas, Lyon, Storey, Carson City
- State of Nevada partners and officials
 - NDEM, NDWR, NDEP,
- Other Federal Agencies partner representatives
 - FEMA, USGS, U.S. Navy, National Weather Service, USACE
- Other Stakeholders
 - Washoe Tribe, Fallon Tribe, UNR Cooperative Extension, CRC Members

Stakeholder Meetings

- Meeting #1 – Project introduction, goals, timeline, **data request via 14 item community questionnaire**
- Meeting #2 – draft Discovery Report, **breakout sessions by community to review identified projects**
- Meeting #3 – final Discovery Report, **brainstorm on RFMP improvements and additional data request**
- Meeting #4 – draft RFMP (Carson River Watershed Forum)

Components of RFMP

- Introduction and Background
- FEMA
- Flood History and Risk Assessment
- Flood Risk Reduction and Floodplain Strategies
- Implementation
- Planning Process
- Emergency Response and Flood Warning

Goals:

1. *Identification of flood hazards*
 - a) *New flood hazards*
2. *Recommend suggested actions*
3. *Follow CRS requirements to receive credits for flood insurance premium discounts*



Appendices

Appendix A – FEMA CTP Agreement

Appendix B – Link to FEMA County Flood Insurance Rate Maps

Appendix C – Rapid Evaluation of the Carson River

Appendix D – 2016 Floodplain Ordinance Draft Report and Mitigation Plan Table

Appendix E – Risk MAP Charter

Appendix F – Hydraulic Modeling Documents

Appendix G – CRS Annual Monitoring Reports

Appendix H – 2018 Risk MAP Discovery

Appendix I – Table of CWSD CTP Projects

Appendix J – Floodplain Management Plan Update / Revision Process

Appendix K – Adoption of RFMP

What's new since 2008 RFMP?

- Identification of new flood hazards
 - Alluvial fan flooding
 - Long-term extended riverine flooding
- Identification of new types of solutions/actions
 - LID (Low impact development)
 - Stormwater Management actions
- Identification of impediments to flood protection
 - No upstream storage
 - Private property
 - Funding
- Positive outcomes
 - Floodplain protection is a priority
 - Active partnerships continue to result in implementation and regional floodplain management



New

3.0	Flood History and Risk Assessment.....	17
3.1	Types of Flood Hazards	19
3.3	FEMA Repetitive Loss Areas.....	21
3.4	Risk Assessment (HAZUS).....	22
3.4.1	Estimated Economic Loss due to 100-year Flood	22
3.5	Public and Private Infrastructure	22
3.6	Future Condition Consideration and Impacts to Floodplain.....	23
4.0	Flood Risk Reduction and Floodplain Strategies.....	24
4.1	Protect Floodplain Natural Functions and Values	31
4.1.1	Living River Approach.....	31
4.1.2	Good Neighbor Policy	32

New

4.3.8	Photo Monitoring.....	39
4.3.8	Rain Gage Network.....	39
4.4	Channel Migration and Bank Erosion monitoring.....	40
4.5	Floodplain and Flood Hazard Outreach and education	43
4.6	Reduction of Infrastructure Impacts.....	45
4.7	Map/Study Alluvial Fan Flood Hazards	46
4.8	Stormwater Mitigation	47
5.0	Implementation	48
5.1	Steps for Plan Implementation	48
5.2	Monitoring and Revision.....	48
5.3	Linking Regional Floodplain Management with Other Plans.....	49
5.3.1	Hazard Mitigation Plans	49
5.3.2	Carson River Watershed Adaptive Stewardship Plan	49
5.3.3	Carson River Flood Mitigation Plan.....	50
5.4	Additional regulatory and Permitting Agency Coordination	51
5.5	Potential Funding Sources	52
6.0	Planning Process	52
7.0	Emergency response and Flood Warning	53
7.1	Flood Forecast and Warning Systems.....	54
8.0	References	55

Next Steps

- CWSD Board Adoption in September
- Counties Adoption in Fall 2018



QUESTIONS ?

11.02.2017