

**ANNUAL REPORT**  
**ON THE**  
**REGIONAL FLOODPLAIN MANAGEMENT PLAN**  
**FOR**  
**CARSON CITY, NEVADA**  
(Adopted August 7, 2008)

**Prepared by:**

**Robert D. Fellows, P.E.**  
**Chief Stormwater Engineer & Floodplain Manager**

**Shyla K. Lemons**  
**Stormwater/Floodplain Engineering Technician II**

**Carson City, NV**

**September 2009**

## **REGIONAL FLOODPLAIN MANAGEMENT-in Support of a No Adverse Impact Approach**

### **September 19, 2008 - 5 Counties join forces to reduce flood damage & protect floodplain lands.**

- The Regional Floodplain Management Plan was adopted by five counties which include Douglas, Carson City, Lyon, and Churchill Counties in Nevada and Alpine County in California.
- Main goals of the plan are to help protect community members from flooding hazards, reduce flood-related costs, lower flood insurance rates, and to provide proactive strategies for floodplain management that can be applied regionally and locally.
- Responsible parties have been identified for implementation of the plan, and existing or potential funding sources have also been identified.

### **ACTIVITIES**

#### **1. River Corridor/Floodplain Management Working Group - stakeholder group focused on regional floodplain management issues.**

##### a. Meeting Dates

1-15-18, 2-13-08, 3-17-08, 9-18-08, 10-28-08, 1-14-09 & 8-4-09.

#### **2. Regional Floodplain Management Plan**

- a. Formally adopted by Carson City on 8-07-2008
- b. Prior to adoption several community workshops were held.
  - Community Workshop @ Carson City Library - 5/07/08
  - Presentation to Carson City Planning Commission - 5/28/08
  - Presentation to Carson River Advisory Committee - 4/02/08  
voted to recommend approval of plan
  - Presentation to Carson City Planning Commission - 5/08/08  
voted to recommend approval of plan
  - Presentation to Carson City Open Space Committee - 4/16/08  
voted to recommend approval of plan

#### **3. Community Outreach and Education**

- a. Flooding/Floodplain protection display at Carson City library  
February 2009
- b. Local access television show on regional plan and ways to protect floodplain
- c. Local access television show on low level flooding and Stormwater

#### **4. Carson City Best Management Practices (BMP) Program**

- a. Program began 1/09/09 and will focus on landowners and how to reduce impact from low level flooding on their properties.

A pilot program involving the Clear Creek Watershed resulting in 9 business visits by the Chief Stormwater Engineer has proven to be very educational for the business owners in identifying possible problem areas within there business footprint.

#### **5. Protect Floodplain Natural Functions and Values and Responsible Entities**

- a. Adopt a Living River approach which will involve all entities.
- b. Floodplain & flood hazards should be considered with open space program objectives when selecting acquisition targets and establishing management strategies for open space - local governments, other entities.
  - Carson City is currently looking at purchasing open space in Brunswick Canyon.
  - Negotiations are currently in process for the purchasing of the Empire Ranch Golf Course.

#### **6. Higher Regulatory Standards & Responsible Party**

- a. Implement or enhance county ordinances that require 1:1 or greater mitigation ratio for floodplain storage volume. - local governments.
- b. Develop and conduct unsteady state modeling to identify storage requirements - Local & State governments, CWSD. Potential funding thru NDEP, CWSD and other local & state entities.
  - **Carson River Watershed Floodplain Management/Flooding Technical Committee (CRS) has been in discussion on which model to adopt. The committee discussed HEC-RAS as being the model of choice. The committee also discussed having two models, one for the Carson River and one for the tributaries.**
  - **CWSD is establishing a fund for the Floodplain Management Program.**
  - **NDEP has some funding that has been dedicated for the modeling effort to help protect floodplains from new pollution sources.**
  - **FEMA has requested a list of projects from the CWSD for consideration of funding.**

- c. Include the suggested ordinance language in county ordinances to provide watershed wide consistency. - Local governments.

## **7. Flood Data Information and Maintenance & Responsible Party**

- a. Support FEMA'S Map Modernization Program & encourage FEMA to update FIRM'S with current and future conditions. - FEMA, Carson Water Subconservancy District (CWSD) and local governments.
- b. CWSD continue to participate in FEMA'S Cooperating Technical Partner Program. - CWSD & FEMA
- c. Flood studies should be conducted for main channel and be used to update FEMA maps and fill data gaps. - CWSD & FEMA. Potential funding by Federal, state and local grant sources.
  - Carson City agreed with the committee that HECIRAS modeling software will be used for identifying the missing gap in the floodplain between Carson City and Douglas County.
  - Subconservancy has leverage money that can be used for flood studies.
  - Douglas County received FEMA money to do a model and restudy.
- d. Flood maps and studies should be evaluated and updated depending upon changes in channel and floodplain conditions, watershed hydrology or any other significant changes. - CWSD & local governments. Potential funding by Federal, state and local grant sources.
  - Carson City is using the effective FIRM maps dated 1/16/2009 from FEMA to evaluate flood zones.
  - Carson City is working with FEMA for a restudy of our west drainage system, including Vicee, Ash and Kings Canyon Watersheds, due to major upgrades by Carson City in these areas.
- e. Elevation Reference Marks (EFM) should be permanent monuments and updated on regular basis. -local governments
  - Carson City will be hiring a Consulting firm this fall to establish valid benchmarks.
- f. EFMs should be in same datum as base flood elevations on FIRMs Or a datum that is readily convertible to FIRM datum. - local governments
  - Counties agreed all new datum information shall be National Geodetic Survey (NGS) according to the North American Vertical Datum of 1988.
- g. A master list of EFMs should be developed, maintained and made available to interested parties. - local governments & CWSD

- **Carson City will develop a web based list showing all EFM'S in our county and data will be entered into the NGS database.**
- h. Photo-Monitoring program should be developed to document flooding and flood hazards in consistent matter. - CWSD, CRC and local governments

**8. Floodplain and Flood Hazard Outreach and Education**

- a. Develop watershed wide outreach and education program about floodplain importance and flooding hazards. - CRC working group – Potential funding thru Federal, state and local grant sources
  - **Carson City helped to fund the printing of "The Carson River Watershed Map" to be distributed regionally.**
  - **Carson River Watershed/Floodplain Management/Flooding Technical Committee is currently discussing details for the development of the new watershed brochure and its funding.**