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Drought and Flood—Yin and Yang

Here in the West, our major flooding problems in the valleys very often start in our mountains. Especially in northern Nevada, the magnitude of our flood risk each year, as well as our annual water supply outlook, are both dependent on the seasonal snowpack in the mountains.

As of early March 2012 our water supply outlook reported by the National Weather Service appears to be pretty bleak with many areas having snowpack that is 30% of average. This is a far cry from our previous winter of 2010-2011 which saw record precipitation and snowpack in northern Nevada watersheds. The heavy snowpack last winter prompted the NWS California-Nevada River Forecast Center to hold weekly conference calls to keep local emergency managers and water resource agencies abreast of weather forecasts in the event that serious flood conditions developed. As the late winter and spring unfolded, however, we “dodged the bullet” on flood-

ing as the snowmelt made its way down through our streams and rivers with high flows, but without serious flooding.

But, as those of us who were here in 1997 know, it could have as easily gone the other way. If a “Pineapple Express” weather system had brought warm rain on snow, that record snowpack might have come down all at once causing flooding of the magnitude we saw in 1997. The pre-conditions were there but fortunately the trigger event did not occur.

So far this year’s water supply outlook is very different from last year. According to Gary Barbato of the National Weather Service, even if northern Nevada were to have a “Miracle March,” with 3 to 4 times the normal snow, we would still be below average for the season.

But what may be most unsettling about our past two winters is that this wide variability between winter precipitation seasons from one year to the next is consistent with climate

change predictions by the U.S. Global Change Research Program. Climate change experts predict winter precipitation becoming more variable with a “trend toward both more frequent extremely dry and extremely wet winters.”

Perhaps because of our status as the driest state in the country, it seems as if we continually face drought conditions that are periodically punctuated by flood events. But it’s important to realize that those flood events are inevitable. And if the climate change experts are right, the magnitude of our future flood events will likely increase.

Like Yin and Yang, drought and flood are seemingly contrary forces that follow each other endlessly in the natural world. It’s important to recognize that during these dry years between flood events, we have an opportunity to take action in our communities to reduce the consequences of future flooding.

*Kim Davis, PE, CFM
Nevada Floodplain Manager*

Breaking News!

Pending FEMA approval, **Lander County** will become the newest Nevada **Community Rating System (CRS)** community in October 2012, when it would enter CRS as **Class 8**. Properties located in Special Flood Hazard Areas would receive a 10% premium discount on flood insurance. CONGRATULATIONS LANDER COUNTY!



FMA 2012 Annual Conference
September 4-7, 2012
Hyatt Regency
Sacramento, California

2013 Pre-Disaster Mitigation Grant Program Eliminated



The President's 2013 proposed budget included \$0 for FEMA's **Pre-Disaster Mitigation (PDM)** program. Consequently FEMA has indicated it will be unlikely that mitigation assistance through the PDM program will be available for this year's Unified Hazard Mitigation Assistance (UHMA) grant cycle. FEMA's application period for the UHMA, which has historically included the PDM grant program, opens each year in early June and closes in late November.

FEMA does not anticipate that

other programs in UHMA— notably the Flood Mitigation Assistance (FMA), Repetitive Flood Claims (RFC), and Severe Repetitive Loss (SRL) programs to address flood mitigation—will be impacted. Also, applications made to the PDM grant program prior to or during the 2012 grant cycle (June 2011 to November 2011) will continue to progress through FEMA's grant process for review, and possible selection and award, based on available funding.

In a related matter, Nevada

Division of Emergency Management will assume responsibility for administering the FMA, RFC and SRL grant programs for the State of Nevada. The Nevada Floodplain Management Program will continue to be involved with these grant programs through participation in the Nevada Hazard Mitigation Planning Committee.

For more information contact Elizabeth Ashby, Nevada Division of Emergency Management, (775) 687-0314, eashby@dps.state.nv.us.

Nevada Silver Jackets Team



In 2006 the Flood Risk Management Program (FRMP) was created within the U.S. Army Corps of Engineers (USACE) to integrate flood risk management activities both internally within USACE and externally with other federal agencies— most notably the Federal Emergency Management Agency (FEMA)—as well as state and local agencies. The Silver Jackets Team concept is the state level tool for USACE to implement FRMP activities in each state. In Nevada, a Silver Jackets Team has formed, currently consisting of

representatives from USACE, FEMA, Nevada Division of Emergency Management and Nevada Division of Water Resources as the core team agencies, with adjunct representation from U.S. Geological Survey, National Weather Service, and National Resources Conservation Service. So far the Team has met four times and is working toward the signing of a Silver Jackets Team charter by all agencies involved.

The objective of the Nevada Silver Jackets Team is to better

coordinate flood risk activities among all agencies—federal, state, regional and local—and to better leverage resources to reduce flood risk in Nevada watersheds and communities. The committee hopes to become a catalyst for collaboration and cooperation and a conduit for bringing available resources to bear for the benefit of flood risk reduction in Nevada.

For more information contact Kim Davis, Nevada Division of Water Resources, (775) 684-2884, kadavis@water.nv.gov.



Green Versus Gray: Flood Plain Development in Southern Nevada

By Andrew Trelease, Clark County Regional Flood Control District

Every year millions of tourists flock to Las Vegas to marvel at the impressive high-rise casinos, resorts and hotels. However, some Vegas residents wonder why the steel and concrete extend beyond the Strip and into the natural desert washes. Despite low annual rainfall amounts and locally imposed watering restrictions, nuisance water from developed areas sometimes finds its way into unlined drainage channels and washes where it can provide enough nourishment to sustain habitat for vegetation and wildlife. These washes often become popular destinations for hikers and nature enthusiasts seeking to escape the “concrete jungle” of the big city. Why then, is it a common practice in Clark County to build concrete drainage facilities along natural washes?

To answer that question, we must first consider the goals of the drainage facilities. Some of the criteria set by the Clark County Regional Flood Control District (District) are that drainage facilities must:

- Protect life and property from the dangers of flooding;
- Operate in a dependable, efficient, and cost-effective manner;
- Allow for easy, efficient, and cost-effective maintenance.

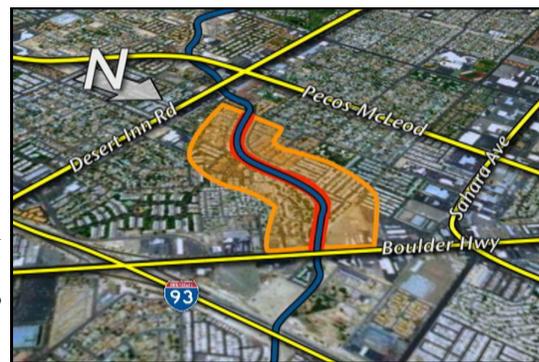
Using concrete as a channel lining is a very effective way to achieve all of these primary goals. Although initially concrete is generally more expensive, the durability and efficiency of these structures often makes them the most cost-effective long-term solution. The initial costs for concrete channels are usually offset by the ability to use less right-of-way, since they can typically be built in narrower corridors than other types of channels.

Clark County is generally comprised of mountainous desert with relatively steep slopes (greater than 1 percent) and is subject to flash flooding. These conditions can result in rainstorms which produce violent and potentially damaging runoff events with little warning. Often natural desert washes are not capable of handling a 100-year storm event. These washes are typically formed by minor storm events, and are often overtopped or relocated by severe erosion during major events. Therefore, it is prudent for communities to maintain a buffer zone between natural washes and development. This buffer zone may be several hundred or several thousand feet, depending on the associated risk.

Many of the District funded open channels were constructed through existing

neighborhoods with inadequate drainage corridors. In these cases, concrete was often chosen as a channel lining to eliminate the need to purchase additional expensive right-of-way and/or relocate homes and businesses.

The size and type of a drainage facility is determined early in the design phase. An analysis is performed for all District funded facilities to determine the least environmentally damaging, practicable solution to solve flooding issues. If concrete lining is determined to be the most practicable solution in an environmentally sensitive area, the District will mitigate the impacts by contributing funds to an approved wetlands mitigation bank. Where possible, based on engineering standards and available rights-of-way, it is the District’s goal to maintain the natural washes. Of the 322 miles of existing open channels on the District’s Master Plan, about 132 miles (41%) are natural washes.



Example of required rights-of-way widths along Flamingo Wash: Channel was constructed with concrete (red lines). The orange shaded area represents the required width if the wash had been left natural. More than 700 homes would have needed to be relocated in the natural wash condition, as well as the bridges at the road crossings.

Of the 322 miles of existing open channels on the District’s Master Plan, about 132 miles (41%) are natural washes.



The Clark County Regional Flood Control District has contributed almost \$6.4 million to various wetlands mitigation banks as compensation for disturbing wetlands in Clark County, including \$4.6 million at Ducks Unlimited Pond at Wetlands Park on the Las Vegas Wash (pictured).

Nevada CRS Communities—Exceeding the National Average



A comprehensive drainage maintenance program that addresses both debris and sediment as well as their sources can earn CRS credit for the community.

As compared to the national average of 1,481 points, Nevada CRS communities receive an average total credit of 2,013 points.

In Nevada, nine of our communities participate in the Community Rating System (CRS), earning discounted premiums for their constituents who pay for flood insurance. CRS credit points are given for a wide range of floodplain management activities, and the total of these points determines the amount of the discount.

CRS Activities

CRS provides for 10 classes, with Class 1 having the highest premium discount and non-participating communities in Class 10 receiving none. A community's CRS class is based on the number of credit points calculated for defined activities undertaken in the following categories (series):

- 300 Series—Public Information
- 400 Series—Mapping and Regulations
- 500 Series—Flood Damage Reduction
- 600 Series—Flood Preparedness

Exceeding the National Average

As compared to the national average of 1,481 points, Nevada CRS communities receive an average total credit of 2,013 points. Each individual Nevada CRS community exceeds the national average for several CRS sanctioned activities.



Carson City—A Class 6 community, Carson City joined CRS in 1994. Carson City receives credit significantly above the national average and the highest number of points in the state for activities in Open Space Preservation and Drainage System Maintenance.

Clark County—A Class 6 community, Clark County joined CRS in 1992. Clark County receives credit above the national average and the highest number of points in the state for activities related to Elevation Certificates and Flood Warning.

Douglas County—A Class 6 community, Douglas County joined CRS in 1993. Douglas County receives credit significantly above the national average for Higher Regulatory Standards, and above the national average for Floodplain Management Planning, and is the only Nevada community receiving credit for Flood Protection, which involves retrofitting flood-prone buildings or constructing small flood control projects.

Henderson—A Class 6 commu-

nity, Henderson is one of the first three Nevada communities to join CRS in 1991. Henderson receives credit above the national average and the highest number of points in

the state for Storm water Management and for Additional Flood Data by providing additional floodplain maps or flood data in areas where FEMA did not provide such data.

Las Vegas—A Class 6 community, Las Vegas is one of the first three Nevada communities to join CRS in 1991. Las Vegas receives credit above the national average the highest number of points in the state for Flood Protection Assistance by providing technical assistance and advice for property owners and publicizing the services provided.

Mesquite—A Class 6 community, Mesquite joined CRS in 2002. Mesquite receives credit above the national average and the highest number of points in the state for activities related to Hazard Disclosure.

North Las Vegas—A Class 6 community, North Las Vegas is one of the first three Nevada communities to join CRS in 1991. North Las Vegas receives credit significantly above the national average and the highest number of points in the state for activities related to Flood Data Maintenance.

Credit Points	CRS Class	Premium Reduction	
		SFHA*	Non-SFHA*
4,500+	1	45%	10%
4,000 – 4,499	2	40%	10%
3,500 – 3,999	3	35%	10%
3,000 – 3,499	4	30%	10%
2,500 – 2,999	5	25%	10%
2,000 – 2,499	6	20%	10%
1,500 – 1,999	7	15%	5%
1,000 – 1,499	8	10%	5%
500 – 999	9	5%	5%
0 – 499	10	0	0

*SFHA—Special Flood Hazard Area

(Continued on page 5)

Storey County—A Class 8 community, Storey County joined CRS in 1994. Storey County receives credit above the national average and shares the highest number of points in the state for activities related to Elevation Certificates.

Washoe County—A Class 7 community, Washoe County is Nevada’s newest CRS community joining in 2009. Washoe County receives credit above the national average and the highest number of points in the state for activities related to Outreach Projects.

Savings Stay in Nevada

According to data provided by ISO (Insurance Service Organization), the administrator of the CRS program, there were 7,337 NFIP policies in force in Nevada CRS communities as of October 1, 2011, with a total of \$4,166,541 paid in premiums to the NFIP. But this amount *does not* include CRS discounts of \$612,767. These savings are real dollars that are staying in the pockets of Nevadans in our nine CRS communities.

CRS premium discounts are applied not only to policies located in Special Flood Hazard Areas (SFHAs; Zones A, AE, AO and AH in Nevada) but in non-SFHAs (Zones X, Shaded-X and D) as well. For Class 8 communities such as Storey County, the discount is 10% in SFHAs and 5% in non-SFHAs. For Class 6 communities, such as Carson City, Douglas County and the Clark County communities, the discounts are 20% in SFHAs and 10% in non-SFHAs.

Nevada Community	NFIP Policies	NFIP Premium	CRS Discounts
Carson City	644	\$498,227	\$101,904
Clark County	2,753	\$1,229,624	\$179,517
Douglas County	1,069	\$728,770	\$135,264
Henderson	508	\$264,129	\$32,852
Las Vegas	722	\$410,123	\$45,687
Mesquite	143	\$73,537	\$4,482
North Las Vegas	219	\$116,098	\$9,417
Storey County	225	\$109,758	\$9,953
Washoe County	1,054	\$736,275	\$93,692
CRS Communities	7,337	\$4,166,541	\$612,767
Non-CRS Communities	6,674	\$4,432,270	\$0
All Communities	14,011	\$8,598,811	\$612,767

Benefits the Community

In addition to discounts in flood insurance premiums, CRS communities realize other benefits through participation in the program:

- The CRS floodplain management activities provide enhanced public safety, a reduction in damage to property and public infrastructure, avoidance of economic disruption and losses, reduction of human suffering, and protection of the environment.
- A community can evaluate the effectiveness of its flood program against a nationally recognized benchmark.
- Technical assistance in designing/implementing some activities is available at no charge.
- A CRS community’s flood program benefits from having an added incentive to maintain its flood programs over the years. The fact that the community’s CRS status

could be affected by the elimination of a flood-related activity or a weakening of the regulatory requirements for new development, should be taken into account by the governing board when considering such actions. A similar system used in fire insurance rating has had a strong impact on the level of support local governments give to their fire protection programs.

- Implementing some CRS activities, such as floodplain management planning, can help a community qualify for certain federal assistance programs.

For More Information . . .

To find out more about the CRS, go to the FEMA web page: <http://www.fema.gov/business/nfip/crs.shtm>, or contact Dave Arkens, ISO, (702) 485-3345, dmarkens@iso.com. Also, see related article titled, “Major Changes for 2012 CRS Coordinator’s Manual,” on page 6.

These savings are real dollars that are staying in the pockets of Nevadans in our nine CRS communities.



Outreach projects conducted as part of a public information program strategy can earn CRS credit for the community.

Major Changes to 2012 CRS Coordinator's Manual

The Community Rating System (CRS) is a voluntary incentive program to recognize and encourage community floodplain

management activities that exceed the minimum requirements of the National Flood Insurance Program. Guidance for implementation of CRS by participating NFIP communities is defined in

the *CRS Coordinator's Manual, FLA-15*.

As of late 2011, significant changes were proposed for CRS which will impact the activities recognized for credit points as well as the number of credit points that will be available for specific activities. These changes will be reflected in a new 2012 version of the CRS Coordinator's Manual

planned for availability early this year. The effective date for the new 2012 CRS Coordinator's Manual will be no sooner than July 1, 2012.

The 2012 CRS Coordinator's Manual will incorporate changes to certain elements, activities, prerequisites, procedures, documentation and credit points. Proposed changes are the product of several years of review and evaluation by the CRS Task Force (an advisory group of experts from FEMA, professional associations, the insurance industry and CRS communities), FEMA and many CRS stakeholders, and are pursuant to the report entitled, "*A Strategic Plan for the Community Rating System, 2008-2012*."

FEMA continues to host webinars to explain and discuss proposed changes in CRS program. Additionally a special website for the 2012 CRS Coordinator's Manual has been set up as a central point for distributing the latest informa-

tion on proposed changes to the CRS, the background work that went into the revisions, and the schedule for implementation.

A summary of proposed changes, including available credit points, is described in a document entitled "*Major Changes for the 2012 CRS Coordinator's Manual*." Because of the scope and complexity of the proposed changes, participating CRS communities are currently assessing the impact of these changes on their individual programs. Dave Arkens, ISO representative for Nevada, will be working closely with our CRS communities to assist them with properly accounting for CRS credit under the new 2012 CRS Coordinator's Manual.

For more information on proposed changes, available webinars, and downloadable copies of publications cited in this article, go to the 2012 CRS Coordinator's Manual website at: www.crs2012.org.

The effective date for the new 2012 CRS Coordinator's Manual will be no sooner than July 1, 2012.

Solar Panels in the Floodplain

The following policy guidance on free-standing solar panels is excerpted from an email from Jennifer Tylander, Program Specialist, FEMA Mitigation Directorate, Washington D.C.

If free standing solar panels are proposed in the floodplain, it is considered development and permits are required [60.3(a)(1)]. In addition, local officials are to review proposed development to assure all necessary permits have been received from those*

governmental agencies from which approval is required by Federal or State law [60.3(a)(2)]. In addition, the local official is to determine whether the proposed development is reasonably safe from flooding. If the free-standing solar panels are in a flood-prone area, the proposal for free standing solar panels should be reviewed to assure that all such proposals are consistent with the need to minimize flood damage [60.3(a)(4)]*. Ways to minimize*

flood damage to free standing solar panels include, but are not limited to, being adequately anchored to prevent flotation or collapse, constructed with flood resistant materials below the Base Flood Elevation, and be designed or located such that floodwater is prevented from entering or accumulating in the components that are not flood resistant during flooding events.

* Title 44 Code of Federal Regulations

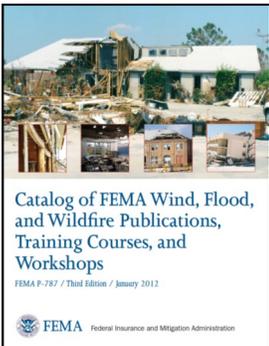
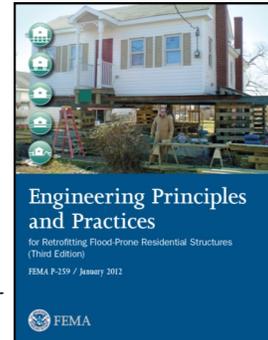


Free standing solar panels in the floodplain are considered development and permits are required.

New FEMA Publications

Engineering Principles and Practices of Retrofitting Flood Prone Residential Structures, Third Edition, FEMA P-259, January 2012

The third edition of this document is intended to further aid homeowners in selecting and successfully executing a flood retrofit on their home. Engineering design and economic guidance on what constitutes feasible and cost-effective retrofitting measures for flood-prone residential and non-residential structures are presented. This edition was updated to be more user-friendly and concise, the overall length of the publication has been shortened



Catalog of FEMA Wind, Flood and Wildfire Publications, Training Courses, and Workshops, FEMA P-787, January 2012

The third edition of this catalog contains a listing with brief descriptions of publications, courses, and workshops developed by the Building Science Section of FEMA's Federal Insurance and Mitigation Administration (FIMA).

I-Codes Sample Checklists for Flood Hazards, December 2011

This document contains a Plan Review Checklist for Flood Hazard Area Application Review and an Inspection Checklist for Flood Hazard Area Inspections in both A Zones and V Zones.



Flood Resistant Provisions of the 2012 International Code Series

This document is a compilation of flood resistant provisions, prepared by FEMA, of the 2012 International Code Series (IBC, IRC, IEBC IMC, IPC, IFGC, IPSDC, IFC). Also included, as a separate document, is a summary of changes from the 2009 IBC. The 2012 edition of the I-Codes contains provisions that are consistent with the minimum flood-resistant design and construction requirements of the NFIP for buildings and structures.

These new publications may be found on the FEMA Library website at: www.fema.gov/library.

High Water Markers Available from NDWR

In the process of mapping a floodplain, a great deal of time is spent with computer models such as HEC-RAS or Flo-2D just to name a couple. Detailed studies require a lot of effort to develop the correct inputs, but assumptions must still be made at times. Model calibration is the art of balancing the estimated results with historical observations. Final model results, and consequently mapped floodplains, are affected by the calibration of the model used to predict flooding. Properly documented High

Water Marks (HWM) can improve model calibrations and accuracy of FEMA flood maps. To that end, the Floodplain Management Program has acquired 500 stamped aluminum discs to be used to document High Water Marks (HWMs) after future flood events.

Another purpose of documenting HWMs is to raise public knowledge of flood risk in that area. HWMs are common in the Mid-West, and local communities believe it is a very obvious device to communicate flood risk.

The Nevada Preliminary Damage Assessment (PDA) team has been trained on placement and documentation requirements in the event of deployment for future flood events. Also, communities experiencing flooding events that may benefit from having documented HWMs can arrange for markers through a timely phone call or email to Luke Opperman, Nevada Division of Water Resources (NDWR), (775) 684-4286, lopperman@water.nv.gov.



High Water Marker 1 1/2" disc

Regional Climate Impacts—Southwest

Excerpted from *Global Climate Change Impacts in the U.S.* (2009).
United States Global Change Research Program, www.globalchange.gov



SOUTHWEST

Paradoxically, a warmer atmosphere and an intensified water cycle are likely to mean not only a greater likelihood of drought for the Southwest, but also an increased risk of flooding.

The Southwest region stretches from the southern Rocky Mountains to the Pacific Coast. Elevations range from the lowest in the country to among the highest, with climates ranging from the driest to some of the wettest. Past climate records based on changes in Colorado River flows indicate that drought is a frequent feature of the Southwest, with some of the longest documented “megadroughts” on Earth. Since the 1940s, the region has experienced its most rapid population and urban growth. During this time, there were both unusually wet periods (including much of 1980s and 1990s) and dry periods (including much of 1950s and 1960s). The prospect of future droughts becoming more severe as a result of global warming is a significant concern, especially because the Southwest continues to lead the nation in population growth.

Human-induced climate change appears to be well underway in the Southwest. Recent warming is among the most rapid in the nation, significantly more than the global average in some areas. This is driving declines in spring snowpack and Colorado River flow. Projections suggest continued strong warming, with much larger increases under higher emissions scenarios compared to lower emissions scenarios. Projected summertime temperature increases are greater than the annual average increases in some parts of the region, and are likely to be exacerbated locally by expanding urban heat island effects. Further water cycle changes are projected, which, combined with increasing temperatures, signal a serious water supply challenge in the decades and centuries ahead.

Paradoxically, a warmer atmosphere and an intensified water cycle are likely to mean not only a greater likelihood of drought for the Southwest, but also an increased risk of flooding. Winter precipitation in Arizona, for example, is already becoming more variable, with a trend toward both more frequent extremely dry and extremely wet winters. Some water systems rely on smaller reservoirs being filled up each year. More frequent dry winters suggest an increased risk of these systems running short of water. However, a greater potential for flooding also means reservoirs cannot be filled to capacity as safely in years where that is possible. Flooding also causes reservoirs to fill with sediment at a faster rate, thus reducing their water-storage capacities.

On the global and national scales, precipitation patterns are already observed to be shifting, with more rain falling in heavy downpours that can lead to flooding. Rapid landscape transformation due to vegetation die-off and wildfire as well as loss of wetlands along rivers is also likely to reduce flood-buffering capacity. Moreover, increased flood risk in the Southwest is likely to result from a combination of decreased snow cover on the lower slopes of high mountains, and an increased fraction of winter precipitation falling as rain and therefore running off more rapidly. The increase in rain on snow events will also result in rapid runoff and flooding.

The most obvious impact of more frequent flooding is a greater risk to human beings and their infrastructure. This applies to locations along major rivers, but also to much broader and highly vulnerable areas such as the Sacramento–San Joaquin River Delta system. Stretching from the San Francisco Bay nearly to the state capital of Sacramento, the Sacramento–San Joaquin River Delta and Suisun Marsh make up the largest estuary on the West Coast of North America. With its rich soils and rapid subsidence rates – in some locations as high as 2 or more feet per decade – the entire Delta region is now below sea level, protected by more than a thousand miles of levees and dams. Projected changes in the timing and amount of river flow, particularly in winter and spring, is estimated to more than double the risk of Delta flooding events by mid-century, and result in an eight-fold increase before the end of the century. Taking into account the additional risk of a major seismic event and increases in sea level due to climate change over this century, the California Bay–Delta Authority has concluded that the Delta and Suisun Marsh are not sustainable under current practices; efforts are underway to identify and implement adaptation strategies aimed at reducing these risks.



1997 Flood in Central Valley, California (2012 Central Valley Flood Protection Plan, Public Draft, December 2011)

Understanding Zone D—Flood Insurance

On Flood Insurance Rate Maps (FIRMs) the Zone D designation is used for areas where there are possible but undetermined flood hazards, as no analysis of flood hazards has been conducted. The Zone D designation is also used when a community incorporates portions of another community's area where no map has been prepared.

Flood insurance is available in Zone D however it is not federally required by lenders for loans on properties in these areas. Although these areas are often undeveloped and sparsely populated, lenders may become aware that new development in such areas has increased the possibility of property damage from flooding and they may require coverage as a condition of their loans, even though it is not federally required.

Flood insurance rates for properties in Zone D are commensurate with the uncertainty of the flood risk.

Consequently, as seen in the table, the Zone D premiums can be higher than standard low-risk X zone premiums and significantly higher than the Preferred Risk Policy (PRP) premiums. If

an area is being remapped and properties are going from Zone B, C, or X to Zone D, the insurance agent should determine if grandfathering the existing low-risk zone for future rating will provide a lower premium than using the new Zone D premium. Also, since

Zone D is not considered an SFHA, a property that was designated in Zone D on the

FIRM Date*/Building Type	Preferred Risk Policy (Zone B, C, X)	Standard Rates (Zone B, C, X)	Standard Rates (Zone D)
Pre-FIRM Home**	\$221	\$778	\$575
Post-FIRM Home**	\$221	\$778	\$952
Pre-FIRM Manufactured Home***	\$221	\$778	\$575
Post-FIRM Manufactured Home***	\$221	\$778	\$1,197

*Pre-FIRM buildings are constructed prior to 12/31/74 or the effective date of the initial flood map; Post-FIRM buildings are constructed on or after the effective date of the initial flood map
 **Based on \$50,000 in building and \$20,000 in contents coverage; single family home on a slab with no garage, \$1,000 deductible for building and for contents for Zone B, C, X and post-FIRM D; \$2,000 deductible for pre-FIRM Zone D
 ***Based on \$50,000 in building and \$20,000 in contents coverage; permanently affixed to a lot with no enclosure; \$1,000 deductible for building and for contents in Zone B, C, X and post-FIRM D; \$2,000 deductible for pre-FIRM Zone D

previous map and is newly designated in an SFHA by a map revision effective may be insured under the PRP based on the 2-year PRP eligibility extension. More details on Zone D, grandfathering and PRP Extension can be found at www.fema.gov.

... Zone D premiums can be higher than standard low-risk X zone premiums and significantly higher than the Preferred Risk Policy (PRP) premiums.

Hazus-MH 2.1 Software Release

Have you ever wondered what could happen to your community if a large earthquake occurred nearby? Is your community prepared to meet the needs of your citizens when that once in a lifetime flood strikes?

Insight into these questions can assist emergency managers and decision makers to know how to mitigate against natural disasters in their communities.

FEMA's Hazus-MH can provide that insight.

Hazus-MH is a nationally applicable, standardized methodology that contains models for estimating potential losses from earthquakes, floods, and hurricanes. Hazus-MH uses Geographical Information Systems (GIS) technology to estimate physical, economic and social impacts of disasters.

This Spring FEMA announced

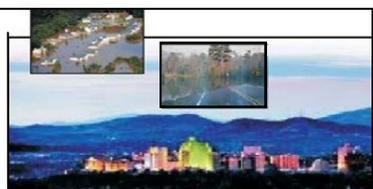
the release of Hazus-MH 2.1 which includes many improvements to the usability and functionality of the software. For more information about the new Hazus-MH release, to learn more about training opportunities, or to find out how to get involved in a Hazus User Group (HUG) in your area, go to www.fema.gov/plan/prevention/hazus/.





24th Flood Warning Systems Training Conference and Exposition

May 15 - 18, 2012 Reno, Nevada



NDWR

NEVADA FLOODPLAIN MANAGEMENT NEWS

Nevada Division of Water Resources
901 South Stewart Street, Suite 2002
Carson City, Nevada 89701

Phone: 775-684-2800
Fax: 775-684-2811
E-mail: nvflood@water.nv.gov

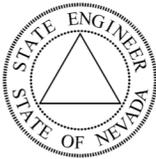
Nevada Floodplain Management News is a publication of the Nevada Floodplain Management Program.

The Nevada Floodplain Management Program was established in the Department of Conservation and Natural Resources, Division of Water Planning by the 1997 Nevada State Legislature after the need for a statewide flood management program became apparent when damages from the 1997 New Years Flood on the Truckee River were assessed.

In the Spring of 2001 the Nevada Floodplain Management Program was transferred within the Department of Conservation and Natural Resources and was later confirmed by Governor's Executive Order, dated April 10, 2003, to its current residence within the Division of Water Resources under the direction of the Nevada State Engineer.

To subscribe send email request to:

nvflood@water.nv.gov



Nevada Flood Hazard Mapping Report

For more information contact Luke Opperman, lopperman@water.nv.gov.

Carson City	Vicee, Ash & Kings Canyon PMR	Issues with incorrect publication details and delays in revised Federal Register publication are affecting the progress of this map revision.
Douglas County	Pine Nut Creek PMR	Douglas County submitted all the information to FEMA's reviewers and was approved for the PMR. Map change will be processed as LOMR.
Elko County	West Wendover Appeal Resolution	This will be first DFIRM. Preliminary maps released September 25, 2009. Draft FIS and engineering supporting appeal currently under review by FEMA contractor.
Eureka	County Wide DFIRM	DFIRM effective date May 16, 2012.
Lander	County Wide DFIRM	Detailed engineering study near Battle Mountain with new Base Flood Elevations.
Lyon	Carson River Study (CTP-CWSD)	Phase one, Detailed Study of Carson River Watershed. Carson Water Subconservancy District as a Cooperative Technical Partner lead.
Lyon	Walker River PMR	Detailed engineering study near the City of Yerington with new floodway determination. "Depth Grids" showing the depth of the 1% annual chance flood waters, will be the first in Nevada.
Mineral	County Wide DFIRM	Countywide digital conversion, with additional Approximate Zone A near Hawthorne, detailed study in Luning. Preliminary maps released November 11, 2011.
Nye County	Pahrump Valley PMR	Detailed topography and engineering to determine BFEs in Approximate Zone A.
Washoe County	Evans Creek and White Lake PMR	Preliminary map released September 12, 2011. Community commented on floodways located in NDOT right of ways on Highway 395.

PMR - Physical Map Revision; LOMR - Letter of Map Revision; FIS - Flood Insurance Study; DFIRM - Digital Flood Insurance Rate Map; CTP - Cooperating Technical Partner; CWSD - Carson Water Subconservancy District; BFE - Base Flood Elevation