



NEVADA

Flood Management News

Fall 2004

Nevada Division of Water Resources

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Share Your Success Stories

We invite you to share your successful floodplain management strategies with our readers.

Please forward your story to:

Nevada Division of Water Resources
123 West Nye Lane
Suite 246
Carson City, NV 89706-0818
groenewd@water.nv.gov

NEVADA FLOODPLAIN MANAGEMENT PROGRAM

Flood After Fire

From our offices at the Division of Water Resources on Nye Lane we watched helplessly this summer as the Waterfall Fire ravaged the canyons above Carson City. The fire consumed numerous homes and structures and left damaged watersheds in its wake.



View of the Waterfall Fire from Nevada Division of Water Resources, Carson City

With winter coming on, we in Carson City anxiously wait to see what kind of water year is in store for us. City water supply and infrastructure as well as several downstream neighborhoods have been left vulnerable to flooding and debris flows due to the extensive burn area (see *Wildfires* article on page 2).

But reseedling and other flood mitigation efforts by Nevada Division of Forestry, Carson City, UNR Cooperative Ex-

tension, NRCS, Nevada Fire Safety Council and others are already underway. As I watch the helicopters from my window dropping straw mulch and grass seed on burned areas, I may be the only Division of Water Resources employee who would be glad to see drought conditions continue a little while longer.

Kim Groenewold, Program Officer
Floodplain Management Program

Wildfires Increase Risk of Flooding and Debris Flows

The Waterfall Fire

“The Waterfall Fire began on July 14, 2004 in the Kings Canyon area just west of Carson City, the capital city of Nevada. The fire quickly spread into the Carson Range, Carson City watershed and by containment consumed 15 homes, one



Vicee Canyon High Severity Burn Area—Waterfall Fire BAER Team Report, July 27, 2004

commercial building, 25 other buildings along with 8,759 acres of land. The Waterfall fire burned under extreme conditions; many firefighters with decades of experience observed fire behavior that they had never seen before. The backdrop of the Capital City is forever changed, it will take years to re-establish the forest and shrub lands that were here before the fire.”

Waterfall Fire Burn Area Emergency Response (BAER) Team Report, July 27, 2004

Changes in the Watershed

A major wildfire can greatly increase the risk of flooding in the affected area for several years after the fire, until normal vegetation has recovered.

The most immediate consequence of a wildfire is the potential for soil erosion. As a fire burns, it destroys plant material and the litter layer that would normally help to stabilize the soil and slow the runoff during a rainstorm.

Intense heat from fire can make the soil repel water, a condition called *hydrophobicity*. In severe, slow-moving fires, the burning of vegetative materials creates a gas that penetrates the soil profile. As the soil cools, the gas condenses and forms a waxy coating that causes the soil to repel water. When the soil can't absorb water during a rainstorm, the result can be flooding in the areas downstream of the burned area.

Because percolation of water into the soil profile is reduced, hydrophobicity can also make it difficult for seeds to germinate and for roots of surviving plants to obtain moisture. This serves to lengthen the time it takes for a watershed to recover.

Increased Flood Risk

From a flood risk perspective, a serious wildfire can drastically change the hydrologic characteristics of a watershed. Rainfall runoff from a recently burned watershed can be more than an order of magnitude larger than for unburned watersheds. A modest rainstorm, on the order of a 10-year event, has the potential for producing flood flows comparable to a 100-year flood event.

For several years after a major wildfire, increased runoff and enhanced potential for soil erosion can combine to produce a dangerous threat of mud and debris flows for downstream areas.

Lowering the Risk

A Nevada Division of Forestry pamphlet entitled “Waterfall Fire, Soil Erosion Control after Wildfire” provides erosion control techniques that can be employed to break up the hydrophobic layer and help the watershed to recover. Techniques described in the pamphlet include reseeding affected areas, creating log erosion barriers by felling dead trees or using straw waddles, creating straw bale check dams, and installing culverts to channel runoff. This pamphlet and additional information about post-Waterfall Fire mitigation activities by Carson City and others can be accessed on the Carson City web site, www.carsoncityinfo.com.

Flood Insurance Has You Covered

It's important to realize that for several years after a major fire the increased risk of flooding and debris flows can put a larger area at high risk from flood damages than the 100-year flood zone (Special Flood Hazard Area) shown on the FEMA Flood Insurance Rate Map. Also, many people do not realize that their homeowners insurance policy alone does not cover them from flood losses; only a flood insurance policy does.

Some important things to know about flood insurance through the National Flood Insurance Program:

Wildfires (continued)

- Flooding is covered;
- Mud flow is covered;
- Landslides and slope failures are NOT covered;
- Your losses are covered even if a disaster is not declared – Federal disaster assistance is only available with a disaster declaration;
- Policies are available on contents as well as on structures, for condominium owners, renters, and nonresidential buildings in addition to homes;
- Policies go into effect 30 days after purchase;
- Outside of a Special Flood Hazard Area, you may be eligible for a Preferred Risk policy with significantly lower premiums;
- Flood insurance is available in any community that participates in the National Flood Insurance Program regardless of a structure’s location inside or outside of a Special Flood Hazard Area;
- If a community participates in the Community Rating System, as Carson City does, all of its citizens are eligible for discounts on flood insurance premiums based on floodplain management activities by the City that go beyond the minimum required for participation in the National Flood Insurance Program.

Flood Insurance Reform Act of 2004

On June 30, 2004, President George W. Bush signed into law the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004. The overall purposes of the Act are:

- To help people who have experienced serious and repetitive flood damage to solve their problems with financial assistance from the NFIP in partnership with communities and states;
- To end the abuses by those who misuse the program causing all policyholders to pay more for flood insurance; and
- To improve consumer understanding and rights of NFIP policyholders.

A copy of the Reform Act of 2004 and a summary of its provisions may be downloaded from the Association of State Floodplain Managers web site at www.floods.org.

Friendly New Faces at NDWR



Ann Mori, Floodplain Management Program Assistant

Since our last issue of the Nevada Flood Management News, we have friendly new faces in the Nevada Division of Water Resources to introduce to our readers.

This summer we said farewell to Judith Lyman who served as the Floodplain Management Program Assistant from its beginning with the Department of Conservation and Natural Resources. Judith has moved to Las Vegas

to accept a position with the Nevada Department of Human Resources, Aging Services Division, and to be closer to her mom.

Our new Floodplain Management Program Assistant is Ann Mori who comes to us from the Division of State

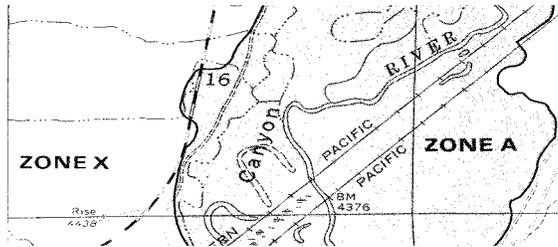
Lands within the Department of Conservation and Natural Resources. Ann brings with her experience with budgeting and grants administration as well as a quick wit and a great sense of humor.

Over the past year, we have gained friendly new faces in our front office as well. Sue Gilbert, Dana Rael, and Susan Cox are the cheerful and efficient women who answer the phones for NDWR and greet our walk-in clients.



Front office staff (left to right): Sue Gilbert, Dana Rael and Susan Cox

These ladies are part of our competent administrative staff who keep things humming here at the Nevada Division of Water Resources.



Unnumbered A Zones

Unnumbered A Zones

On the FEMA Flood Insurance Rate Map (FIRM), any flood zone designation beginning with the letter A is a Special Flood Hazard Area subject to flooding by the one-percent-annual-chance flood (so called "100-year flood"). Among these zones, Zone A is defined as: *Areas subject to inundation by the 1-percent-annual-chance flood event. Because detailed hydraulic analyses have not been performed, no base flood elevation or depths are shown. Mandatory flood insurance purchase requirements apply.*

The U.S. Congress established the National Flood Insurance Program on August 1, 1968 with the passage of National Flood Insurance Act of 1968. In support of the program, FEMA identified flood hazard areas throughout the U.S. and its territories by producing Flood Hazard Boundary Maps (FHBMs). In its initial assessments, FEMA designated areas of special flood hazards (A Zones) on the Flood Hazard Boundary Maps using approximate methods. These preliminary maps provided the basis for a community's entry into the National Flood Insurance Program under a preliminary "emergency phase."

As communities entered the regular phase of the National Flood Insurance Program, FEMA produced Flood Insurance Rate Maps (FIRMs) based on a Flood Insurance Study that utilized detailed hydrologic and hydraulic analyses to calculate base flood elevations

(water surface elevations of the "100-year flood") and in some cases to define regulatory floodways.

The Trouble With A Zones

The presence of A Zones, also referred to as "Unnumbered A Zones," on Flood Insurance Rate Maps represents the vestiges of FEMA's initial flood hazard assessment under the emergency phase of the National Flood Insurance Program.

Unnumbered A Zones abound in our state and nearly every Nevada community participating in the National Flood Insurance Program has some A Zone on its Flood Insurance Rate Maps. Unnumbered A Zones can be challenging for a

community to administer because base flood elevations have not been defined. FEMA's floodplain management regulations in 44 CFR 60.3 (b)(4) requires a community when faced with an A Zone to:

Obtain, review, and reasonably utilize any base flood elevation and floodway data available from a Federal, State, or other source, including data developed pursuant to the FHBM and/or FIRM, as criteria for requiring that new construction, substantial improvements, or other development in Zone A on the community's FHBM or FIRM meet minimum standards of structure elevation of to or above the Base Flood Elevation (BFE).

The implication of this language is that FEMA considers it the responsibility of the community to obtain,

Annual Flood Insurance Rates per \$100 of Coverage

1-4 Family Residential Structure

| Elevation Difference to Nearest Foot | Building Rates | Contents Rates | Type of Information on the Elevation Certificate |
|--------------------------------------|----------------|----------------|--|
| +5 or more | \$0.36 | \$0.62 | Without Estimated Base Flood Elevation |
| +2 to +4 | \$0.75 | \$0.82 | |
| +1 | \$1.42 | \$1.40 | |
| 0 or below | *** | *** | |
| +2 or more | \$0.32 | \$0.50 | With Estimated Base Flood Elevation |
| 0 to +1 | \$0.70 | \$0.72 | |
| -1 | \$2.24 | \$2.08 | |
| -2 or below | *** | *** | |
| No Elevation Certificate | \$2.67 | \$2.61 | No Elevation Certificate |

Elevation Difference is measured between the lowest floor and the highest adjacent grade or the base flood elevation if available.

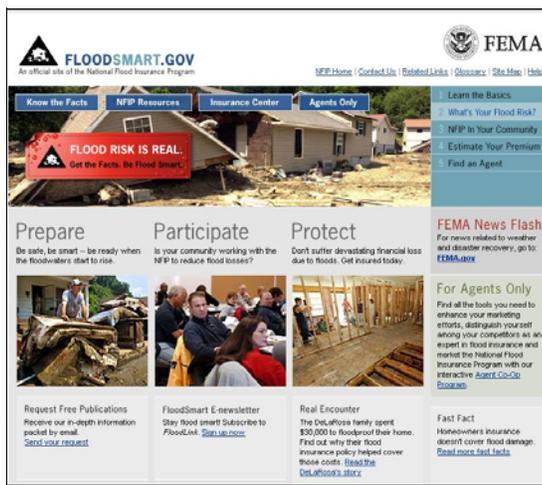
*** Must submit policy to FEMA for rating

FEMA Launches New FloodSmart Web Site

FEMA has launched another web-based resource for obtaining information about flood risks and the National Flood Insurance Program. The FloodSmart web site provides simple and straightforward information targeted to the average homeowner for understanding flood risk and the availability and cost of flood insurance.

One nifty feature of the web site is that by clicking on "What's Your Flood Risk," you can obtain a relative assessment of flood risk for any location nationwide by address. You can also see a simplified version of flood zones for the area based on the current effective Flood Insurance Rate Map.

Another useful feature of the FloodSmart website is the ability to "Estimate Your Premium." By entering pertinent information about a structure (residential/non-residential, flood zone, etc.) you can obtain a Quick Quote for a typical flood insurance premium for both building and contents coverage. You can also link to a list of insurance agents offering flood insurance in your area.



Unnumbered A Zones (continued)

review and utilize the best available data, from a reliable source to determine base flood elevations for A Zones when none has been provided.

Insurance Implications

When no base flood elevation has been estimated, the elevation difference for the purpose of rating a flood insurance policy is measured between the highest adjacent grade next to the building and the lowest floor of the building. For a post-FIRM building without a basement enclosure (see table left entitled *Annual Flood Insurance Rates per \$100 of Coverage*) the lowest floor would have to be elevated in excess of 2 feet above highest adjacent grade to achieve comparable insurance premiums to the same building with its lowest floor elevated to an estimated base flood elevation.

It is worth noting that if no Elevation Certificate can be provided for a structure located in an unnumbered A zone, the annual insurance premium on a residential structure can be nearly four times that of the

same structure elevated to an estimated base flood elevation.

It's Worth Estimating a Base Flood Elevation

Perhaps the bottom line for local community officials is that it's worth the effort to define a base flood elevation. For large developments in A Zones it is a minimum requirement of FEMA's regulations to produce base flood elevations. All Nevada floodplain management ordinances contain the provisions of 44 CFR 60.3(b)(3):

Require that all new subdivision proposals and other proposed developments (including proposals for manufactured home parks and subdivisions) greater than 50 lots or 5 acres, whichever is the lesser, include within such proposals base flood elevation data.

This provides the mechanism that requires developers to come up with base flood elevations for larger new developments in unnumbered A Zones. The best way to meet this

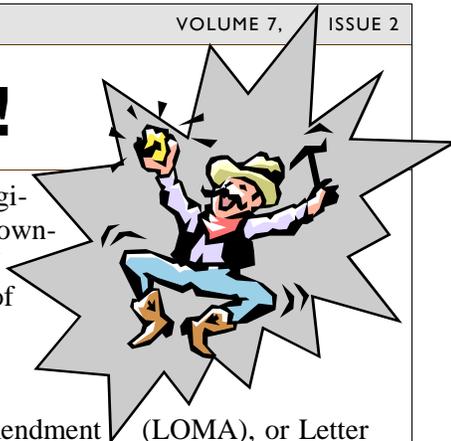
requirement is with a full hydrologic and hydraulic engineering analysis with the community adopting the resulting study in its floodplain management ordinance. The study should also be submitted to FEMA for a Letter of Map Revision.

For smaller developments, FEMA offers the guidance document FEMA 265, Managing Floodplain Development in Approximate Zone A Areas, dated July 1995, to assist communities with developing base flood elevations in A Zones. Further guidance on utilizing FEMA draft or preliminary Flood Insurance Study data is provided in FEMA Floodplain Management Bulletin 1-98, "Use of Flood Insurance Study (FIS) Data As Available Data." Both of these documents are available on the FEMA web site www.fema.gov.

The advantage to the community is that it provides lower insurance rates for its constituency located in A Zones that are more in line with AE Zone premiums.

Eureka!! I Found it on the Internet!

The FEMA web sites are gold mines of information for community officials, engineers, planners, surveyors, builders, developers, insurance agents, lenders, homeowners . . . anyone involved in floodplain management or flood insurance. However, if you need information on a specific topic, it's not always easy to go right to it. One of the following links may be just what you were looking for:



Status of Map Change Requests: www.fema.gov/fhm/st_main.shtm

Track the status of a pending Letter of Map Revision (LOMR), Letter of Map Amendment (LOMA), or Letter of Map Amendment based on Fill (LOMR-F).

Compendium of Letters of Map Change: www.fema.gov/fhm/dl_comp.shtm

Go to lists of all effective Letters of Map Change (LOMR, LOMA and LOMR-F) dating back to January 1996 and up to December 2003.

FEMA Mitigation Technical Bulletins: www.fema.gov/fima/techbul.shtm

Download copies of the index and all eleven of FEMA's Technical Bulletins that provide guidance for interpreting NFIP building performance standards.

Flood Insurance Grandfathering Rules: www.fema.gov/pdf/reg-ix/insgrandfather2.pdf

Find an explanation of FEMA's Grandfathering Rules for Pre-FIRM and Post-FIRM structures as relates to flood insurance.

Insurance Companies Selling Flood Insurance: www.fema.gov/nfipInsurance/companies.jsp

Search by State for all insurance companies that sell flood insurance.

Flood Zone Determination Companies: www.fema.gov/nfip/fzone1.shtm

Follow this link to a nationwide list of Flood Zone Determination Companies.

Flood Insurance Premium Estimator: www.floodsmart.gov/floodsmart/pages/premiupest.jsp

Estimate a typical flood insurance policy premium based on the type of structure, use and flood zone.

Viewing and Printing Flood Maps: msc.fema.gov/documents.shtml

Download instructions for viewing flood maps online and for printing out "Firmettes" - page sized portions of the current effective Flood Insurance Rate Map.

Common Acronyms in the NFIP: www.fema.gov/fhm/fq_term.shtml

Find a list of acronyms commonly used in the National Flood Insurance Program (NFIP)



ASFPM
2005 Annual Conference

June 11-17, 2005
Madison, Wisconsin

National Flood Determination Association (NFDA)

The NFDA is a national nonprofit organization comprised of flood determination companies, their vendors, re-sellers and other industry associates. NFDA administers a certification program to recognize determination companies that operate within guidelines set forth by NFDA to maintain standards of excellence, foster professionalism and advocate quality services. NFDA certification requires companies to meet standards in: 1) Accuracy validation, 2) Business recovery, 3) Experience in business, 4) Financial viability, 5) Flood Zone Determination training, 6) Quality assurance, and 7) Record keeping. For more information, go to the NFDA web site at www.floodassoc.com/index.html



Emergency Management Institute Training

Courses Conducted by the Emergency Management Institute (EMI)

Mitigation Curriculum

Schedule for October 1, 2004 through September 30, 2005

E172 - Advanced HAZUS Multi-hazards for Flood

March 3-6, 2005
September 26-29, 2005

E190 - Intro to ArcGIS for HAZUS Mitigation Users

February 7-10, 2005
June 13-16, 2005

273 - Managing Floodplain Development thru the NFIP

November 15-18, 2004
January 17-20, 2005
April 18-21, 2005
June 27-30, 2005

E276 - Benefit-Cost Analysis: Entry-Level Training

November 8-10, 2004
July 25-27, 2005

E278 - NFIP/Community Rating System (CRS)

March 21-24, 2005
July 11-15, 2005
September 12-15, 2005

E279 - Retrofitting Flood prone Residential Buildings

August 22-26, 2005

E296 - HAZUS Multi-Hazard/DMA 2000 Risk Assessment

March 28-31, 2005
August 8-11, 2005

E313 - Basic HAZUS Multi-hazards (MH)

February 14-17, 2005
June 20-23, 2005

E317 - Comprehensive Data Management for HAZUS Multi-Hazards

September 12-15, 2005

E344 - Mitigation Planning for Tribal Officials

December 6-10, 2004
April 11-15, 2005

How to Apply: Applicants to EMI must submit a Standard General Admission Form (FEMA Form 75-5) to Kim Groenewold, Nevada Floodplain Management Program, groenewd@water.nv.gov or by FAX (775) 687-6972. Forms and detailed information about the courses are available on FEMA's web site training.fema.gov.

FEMA Training for Lenders and Insurance Agents

Courses Conducted by FEMA Insurance Contractor, Computer Sciences Corp.

None scheduled in Nevada at this time.
Check the FEMA web site www.fema.gov/regions/ix/r9_nfip.shtm

for a list of Lender and Insurance Agent Workshops to be held in Region IX

How to Apply: Please contact the Edie Lohman at (916) 780-7905, Lohmannnfip@hotmail.com.

Nevada Floodplain Management Training

Courses Conducted by the FEMA Region IX and NDWR

None scheduled at this time.
Check the NDWR web site water.nv.gov/flood/training_calandar.htm

for new postings of workshops as they become available

How to Apply: For more information or to register, contact Ann Mori at (775) 687-4380, extension 6, amori@water.nv.gov.



The Community Rating System is a voluntary program offered to reward communities that undertake activities beyond the NFIP. The CRS is a point system that reduces flood insurance premiums for the citizens of participating communities. A new web resource for communities interested in participating may be found at: training.fema.gov/EMIWeb/CRS

| Nevada Community | CRS Class | NFIP Policies | Annual Premium | CRS Reduction |
|------------------|-----------|---------------|----------------|---------------|
| Carson City | 8 | 614 | \$276,586 | \$24,083 |
| Clark County | 6 | 5,159 | \$2,049,719 | \$407,824 |
| Henderson | 6 | 848 | \$347,587 | \$61,391 |
| North Las Vegas | 6 | 209 | \$77,554 | \$9,760 |
| Douglas County | 7 | 704 | \$309,202 | \$41,097 |
| Storey County | 8 | 172 | \$46,903 | \$3,968 |
| Mesquite | 8 | 116 | \$37,352 | \$3,238 |
| Las Vegas | 6 | 1,075 | \$470,036 | \$67,084 |

Nevada Flood Management News
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<http://water.nv.gov/>

NEVADA

Flood Management News



**Arid Regions 10th Biennial
Conference**
Restoration and Management of
Arid Watercourses

November 16 – 19, 2004
Mesa, Arizona