NEVADA Flood Management News

Spring 2003 | *Nevada Division of Water Resources* | *Volume 6, Issue 1*

Inside this issue:

Share Your Success Stories

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

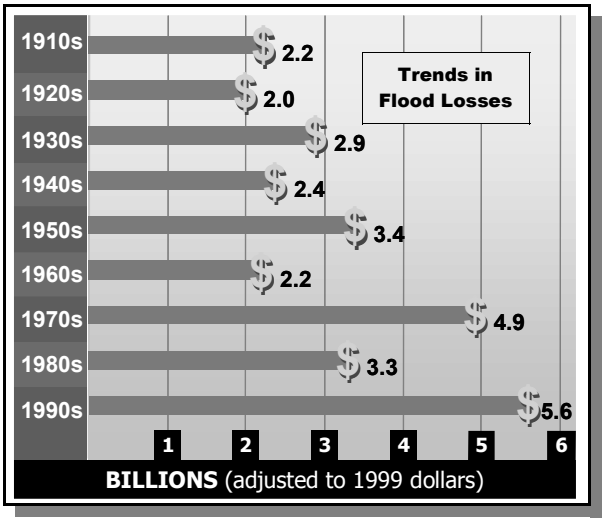
Please forward your story to:

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

NEVADA FLOODPLAIN MANAGEMENT PROGRAM

No Adverse Impact

The Association of State Floodplain Managers reports that annual flood losses in the United States continue to worsen despite 75 years of federal flood control and 30 years of the National Flood Insurance Program. Nationally our average annual flood losses are currently estimated at $6 billion. Your tax dollars pay for the recovery from this damage. Although floods are the single most predictable natural hazard, the cost of flood damages per capita has doubled over the past century.



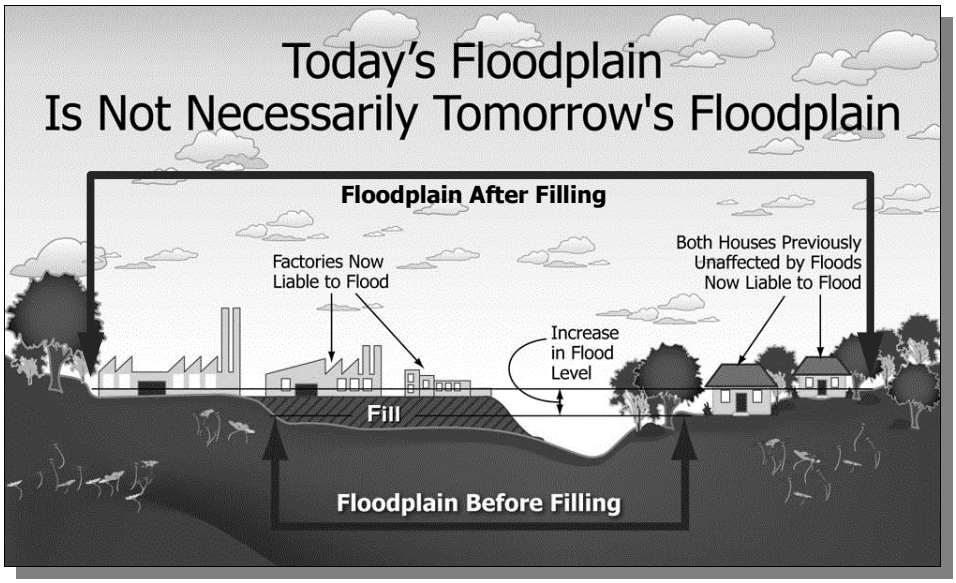
Even if your community's current construction guidelines reflect the minimum national standards, the net result could still be future increases in flood risk to property somewhere in your watershed. Flood risk includes increases in flood levels, flood velocity, erosion and sedimentation.

The Association of State Floodplain Managers promotes a **No Adverse Impact** approach to development that can not only reduce flood losses, but can save lives, protect property and reduce the amount of your tax dollars that are spent on recovery.

This issue of Nevada Floodplain Management News describes how Washoe County, Reno, and Sparks are incorporating the concept of No Adverse Impact as they work cooperatively on flood mitigation planning for the Truckee River watershed. I encourage all Nevada communities to consider how the concept of No Adverse Impact can be incorporated and implemented when planning for future development.

Kim Groenewold, Program Officer
Floodplain Management Program

No Adverse Impact - A Common Sense Strategy for Floodplain Management



If your community's current construction guidelines simply reflect the minimum national standards, or if the guidelines only address new construction, the net result will be future increases in flood risk to property somewhere in your watershed. So states "A common Sense Strategy to Protect Your Property" published by the Association of State Floodplain Managers (ASFPM).

Construction anywhere in the watershed can increase the risk of flooding to other properties even those that have never flooded in the past. Federal standards do not fully consider the impact of new development, so ASFPM recommends that communities implement a higher standard to protect themselves. The No Adverse Impact approach to development will not only reduce flood losses, but will save lives, protect property and reduce the amount of your tax dollars that are spent on recovery.

Today's Flood Levels are NOT Tomorrows Flood Levels

It is a fact that both existing and future development will experience flood depths above the current mapped flood hazard area. Current federal floodplain management regulations do not consider the increase in the future flood levels that will be caused by new development. For this reason, even if the current minimum standards are followed, flooding and flood damages will continue to increase.

Sometimes new construction contributes to increasing damage from floods because it replaces land area that is naturally used to store floodwaters. The area that naturally stores flood waters is called the floodplain. As more land area is replaced with homes, businesses, industry and streets, flood waters are no longer stored in the floodplain but instead continue downstream. Construction in the floodplain and throughout the watershed increases flood flows. The result is an increase in the amount of flood water that will impact downstream communities.

No Adverse Impact Defined

Activities that could adversely impact flood damage to another property or community will be allowed only to the extent that the impacts are mitigated or have been accounted for within an adopted community based plan.

A Do No Harm Policy

The No Adverse Impact approach strives to ensure that the actions of one property owner do not increase the flood risk of other property owners. This approach will especially benefit those property owners that are not currently in regulated flood areas, but who could be in the future.

This new approach would require those who alter flooding conditions to mitigate the impact of their actions on property owners and adjacent communities. The No Adverse Impact approach focuses on planning for and lessening flood impacts resulting from land use changes. It is essentially a "do no

NO ADVERSE IMPACT FLOODPLAIN MANAGEMENT IN WASHOE COUNTY

By Lisa Haldane
Floodplain Management Planning Committee
Washoe County Regional Water Planning Commission

The cities of Reno and Sparks, and Washoe County, have been working since the 1980s to reduce flood damages in the Reno / Sparks metropolitan area and each have ordinances that exceed the minimum standards of the National Flood Insurance Program. These efforts were dwarfed, however, by the Truckee River flood event of 1997 that caused over $600 million in flood damages locally. As has been observed by the ASFPM, if we are to reduce flood damages in the future, we need to manage floodplains and flood hazards from a broader context that recognizes the cumulative impacts of changes in the watershed on existing properties and downstream communities.

This is the context from which the stakeholders and local governments in Washoe County have been participating in the development of the first regional floodplain management plan, under the oversight of the Washoe County Regional Water Planning Commission. The Regional Floodplain Management Plan is a complement to the Truckee River Flood Management Project that has been under development for the past three years. One of the key functions of floodplain management in the Truckee Meadows will be to ensure that the flood damage reduction provided by the Truckee River Flood Management is not undone by future changes in the watershed.

Some of the key (NAI) issues that evolved during the local planning process are:

- The critical role played by floodplains in storing and attenuating flood flows.
- The vulnerability of structures constructed within the floodplain due to:
  - The increased volume of run-off from development higher in the watershed, resulting in increased base flood elevations.
  - The increase in base flood elevations due to fill placed in flood storage areas.
  - The increase in regulatory base flood elevations due to better mapping and modeling techniques over time, with the result that structures constructed to older standards could later be shown to be vulnerable to flooding and require flood insurance.
- Existing detention policies are applied on a project-by-project basis in most watersheds within Washoe County, with the result that the timing of flood peaks could actually be compounded downstream.

Some of the strategies that are being proposed to implement NAI floodplain management in Washoe County are:

- Watershed based master planning and modeling for both the existing and build-out condition to manage both the volume of run-off and timing of peak flows.
- Protection of critical floodplain storage volumes and incorporation of such storage into regional flood control master planning.
- Working with natural systems to the extent possible, allowing floodplains to flood, and minimizing the use of levees and floodwalls.
- Expanding the concepts of "The Living River" and "green infrastructure" beyond the Truckee River to all watersheds within Washoe County.
- Recognizing that in some cases the best management strategy may be to let flood flows pass through early rather than detaining them, so that flood peaks are not combined detrimentally downstream.

The Regional Floodplain Management Plan will be completed in April of this year. There has already been early success with implementation of NAI strategies at the regional level with the Washoe County Regional Water Planning Commission adopting policies on floodplain storage, river restoration, protection and enhancement of groundwater recharge areas, regional floodplain management and flood control master planning, and the first ever floodplain storage mitigation program.

NAI- Common Sense Strategy (continued)

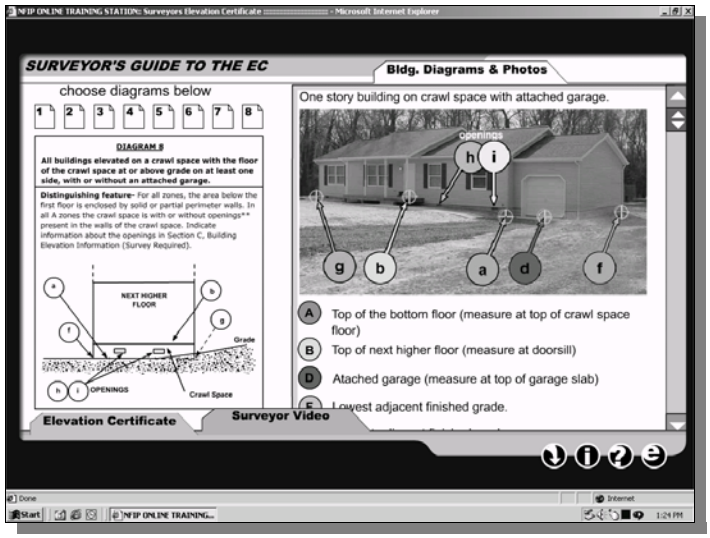
harm" policy that will significantly decrease the creation of new flood damages. A citizen would never allow a neighbor to use her yard as a dumping ground for garbage. No Adverse Impact suggests that we hold our neighbors to the same standard when flooding is concerned. In essence, No Adverse Impact means that your neighbor should build in such a way that does not increase the risk of flooding to your property or others.

For More Information . . .

For more information about the No Adverse Impact concept, visit the ASFPM website at **www.floods.org**.

Surveyor's Guide to the Elevation Certificate – Online Tutorial

The Surveyor's Guide to the Elevation Certificate is a web-based training module designed to help surveyors, engineers, and architects complete the FEMA Elevation Certificate correctly. The training module includes a surveyor's video that briefly describes the process of establishing elevation points in order to obtain the required elevations information. It contains examples of pictures that closely resemble each of the eight building diagrams. These examples provide clear instructions for the surveyors, engineers, and architects where the elevations, applicable to the selected building diagram, should be taken. The module also includes an electronic copy of the Elevation Certificate to provide surveyors flexibility in completing the form when they are in the field. Although this module was designed for surveyors, local community officials should also find this web-based module useful.



The Surveyor's Guide tutorial requires the following components:

- Macromedia Flash 5 Plug-In
- Windows Media Player
- Adobe Acrobat Reader
- 200MHZ processor or better
- Sound Card & Speakers (for video audio)
- 56 K / or better Internet Connection

To access the Surveyor's Guide tutorial, go to FEMA's website **http://training.nfipstat.com/ecsurveyor/.**

"The usually peaceful Truckee River, swollen by heavy rains which have melted the mountain snow pack, came snarling out of its banks this morning, threatening to dwarf its rampage of five years ago."

"Various unofficial estimates placed the river flow through Reno this afternoon at around 17,000 cubic feet per second, with a high water mark expected to near or surpass the 1950 maximum of 19,500 second feet early this morning."

— Excerpt from Reno Evening Gazette, Friday, December 23, 1955

"An angry Truckee River swept over the railings of bridges in the downtown Reno area this morning and began spilling into adjoining streets."

"At 1 a.m. only two of the 12 bridges connecting the north and south portions of Truckee Meadows remained open. The Sierra Street bridge appeared in imminent danger of collapse from battering of flood-swept logs and debris."

— Excerpt from Nevada State Journal, Friday, February 1, 1963

Flooding in the vicinity of the Lake Street Bridge, December 1955 (photo by Silver State Press)

2003 National Flood Conference

Keeping Risk at Bay
National Flood Conference
May 27-30, 2003
San Francisco, California

May 27-30, 2003
San Francisco
Hilton & Towers

ASFPM 2003
St Louis • Missouri

ASFPM's 27th National Conference
May 11-16, 2003
Adams Mark Hotel

"Lessons Learned - Gateway to Flood Mitigation"

FAQs

My house is in an unnumbered zone A. Am I required to purchase flood insurance?

Mandatory flood insurance purchase requirements apply in zone A. Zone A is the flood insurance rate zone where the 100-year floodplain has been determined by approximate methods. Because detailed hydraulic analyses are not performed, base flood elevations (BFEs) are not defined. If a structure is located in zone A with a federally regulated loan, flood insurance premiums can be significantly higher than for the same structure properly elevated in a zone AE where BFEs have been defined. However, even in zone A, Elevation of the structure relative to the Highest Adjacent Grade (HAG) will result in savings in the annual premium.

The following tables provide sample flood insurance costs at different elevations of a new single family house without a basement in zone A where BFEs have not been estimated.

Coverage for Structure

Elev. Above HAG	*Coverage Amount*	*Annual Premium*
+1 foot	$100,000	$911
+2 to +4 feet	$100,000	$451
+5 or more feet	$100,000	$276

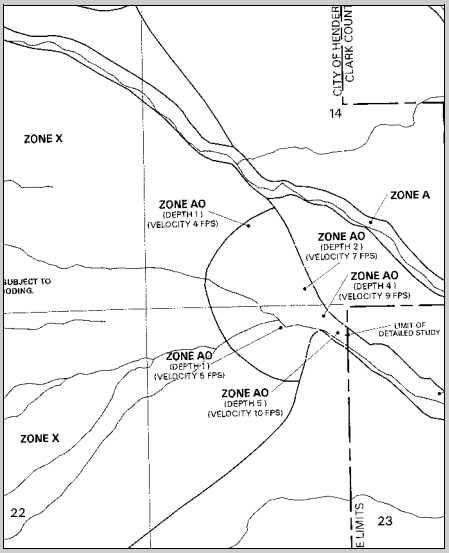
Coverage for Contents

Elev. Above HAG	*Coverage Amount*	*Annual Premium*
+1 foot	$50,000	$102
+2 to +4 feet	$50,000	$181
+5 or more feet	$50,000	$126

FIRM Map Revisions on Alluvial Fans

FEMA's regulations concerning mapping and map revisions for areas subject to alluvial fan flooding can be found in 44 CFR § 65.13. The regulations specifically state that elevations of a parcel or structure by fill or by other means will **not** serve as a basis for removing areas subject to alluvial fan flooding from an area of special flood hazards.

Alluvial fan flooding is characterized by high-velocity flows; erosion, sediment transport, and deposition; and unpredictable flow paths. The NFIP identifies alluvial fan hazards on FIRMs as zone AO and provides information on flood depths and velocities. FEMA recognizes that riverine floodplain mitigation strategies may not provide adequate protection in areas subject to alluvial fan flooding. Therefore, FEMA will not issue LOMAs or LOMR-Fs in areas subject to alluvial fan flooding.



Flood Hazard Mapping Online Tutorials

Did you know that FEMA has developed several online multimedia tutorials to provide in-depth training in different facets of the National Flood Insurance Program (NFIP)? The tutorials are part of FEMA's public education and outreach efforts supported by the Map Modernization program. Some of the tutorials available or currently under development are . . .

Software

Quick-2, Version 2.0 —The latest version of a hydraulic analysis program used to compute water-surface elevations.

Check-RAS, Version 1.1 —A program designed to verify the validity of an assortment of parameters found in the HEC-RAS hydraulics program.

RASPLOT, Version 2.1.0 — Replaces FEMA's FISPLOT program, which was previously used to develop flood profiles.

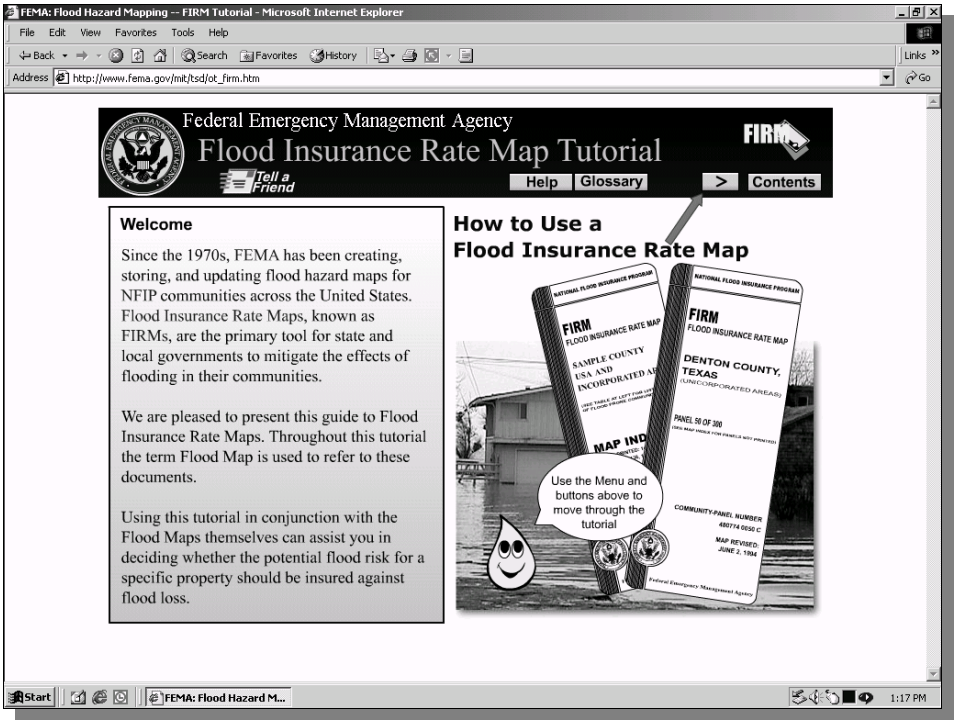
National Flood Frequency (NFF) — Widely used and accepted program developed by the U.S. Geological Survey to estimate approximate peak discharges for ungaged basins.

NFIP Revisions

Letter of Map Amendment (LOMA) — Currently under development, will explain the LOMA application process, including all necessary forms and information. This tutorial is due out in Spring 2003.

Letter of Map Revision (LOMR) — Guides users through the process of requesting LOMRs and conditional LOMRs.

Letter of Map Revision Based on Fill (LOMR-F) — Currently under development, will guide users through the LOMR-F process. This tutorial is due out in Spring 2003.



GIS and Advanced Mapping Technology

Introduction to GIS — Provides an overview of Geographic Information Systems (GIS) technology and leads in to a second, more advanced GIS tutorial.

Using GIS to Create DFIRMs — Second in the GIS Tutorial Series, provides viewers with information on FEMA's use of GIS technology to create DFIRMs.

Using GIS, DFIRM and Other Data for Sample Community Applications — Third in the GIS Tutorial Series, provides users with information on the use of DFIRM, GIS and other data to produce sample community applications within the context of FEMA's flood hazard mapping and mitigation efforts.

Other Tutorials

How to Read a Flood Insurance Rate Map (FIRM) — Educates users on the use and application of FEMA FIRMs.

How to Read a Flood Insurance Study (FIS) — Educates users on the use and application of FEMA FIS texts.

For More Info . . .

Your computer must meet certain system requirements to run FEMA's tutorials, which may include: Pentium 133 MHz or higher, sound card, 56 K modem or higher, Flash Player, or Adobe Acrobat Reader®. For more information and to access these tutorials, go to FEMA's website at **www.fema.gov/mit/tsd/ot_main.htm**.

Emergency Management Institute Training

Courses Conducted by the Emergency Management Institute Mitigation Curriculum
Schedule for November 1, 2002 through September 30, 2003

E273 - Managing Floodplain Development Through the National Flood Insurance Program

August 11-15, 2003
September 15-19, 2003

E278 - National Flood Insurance Program (NFIP)/Community Rating System (CRS)

September 22-26, 2003

E307 - Basic Hazards U.S. (HAZUS) Training

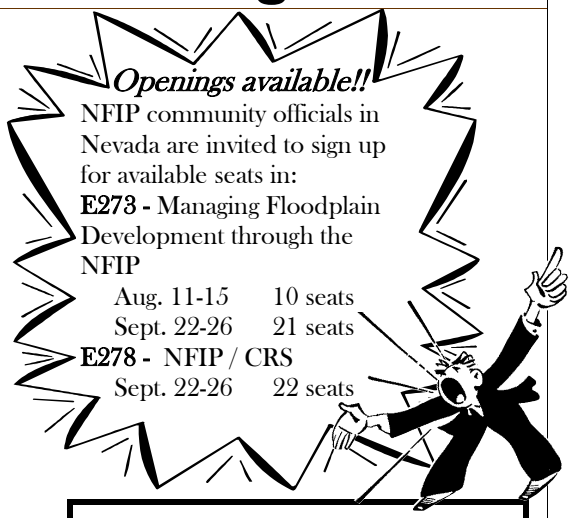
August 25-28, 2003

E314 - Advanced HAZUS

September 22-25, 2003

E329 - Multihazard Building Design Summer Institute: Flood

July 21-25, 2003



Emergency Management Institute
16825 South Seton Avenue
Emmitsburg, MD 21727

How to Apply: Applicants to the Emergency Management Institute must submit a completed Standard General Admission Form (FEMA Form 75-5) to Kim Groenewold, Nevada Floodplain Management Program, groenewd@ndwr.state.nv.us or by FAX (775) 687-6972. Forms and detailed information about the courses are available on FEMA's website **http://training.fema.gov/EMIWeb/rclists.htm.**

FEMA Training for Lenders and Insurance Agents

Courses Conducted by FEMA Insurance Contractor, Computer Sciences Corp. and Omaha Property and Casualty

National Flood Insurance Program Workshop for Lenders

Washoe County
County Administration Building
Central Conference Room
1001 East 9th Street
Reno, Nevada
April 24, 2003
9:00 am to 4:30 pm

Grant Sawyer Building
555 East Washington
Room 1100
Las Vegas, Nevada
June 3, 2003
9:00 am to 4:30 pm

How to Apply: Please contact the Edie Lohman at (916) 780-7889 if you wish to attend a workshop listed above.

Web Sites to Explore

Association of State Floodplain Managers **www.floods.org**

Federal Emergency Management Agency **www.fema.gov**

Floodplain Management Association **www.floodplain.org**

National Weather Service **www.nws.noaa.gov**

Natural Resource Conservation Service **www.nrcs.usda.gov**

US Army Corps of Engineers, Los Angeles District **www.spl.usace.army.mil**

US Army Corps of Engineers, Sacramento District **www.spk.usace.army.mil**

USGS WRD, Nevada District **nv.usgs.gov**

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