



October 25, 2005

Presentation of Friends of the River
to the Joint Hearing of the Judiciary Committee, Water
Parks and Wildlife, and the Insurance Committee of the
California Assembly
On

“Risks and Liability: Who is Responsible for Avoiding a California
“Katrina,” and Who will Pay If we do not”
or

**“New Orleans was not in a FEMA floodplain,
and neither is much of Sacramento, and is that a good thing?”**

Introduction to Floodplain Management

Since the creation of the National Flood Insurance Program (NFIP) in the late 1960's and 70s, the basis for floodplain management in the United States has been the National Flood Insurance Program. Local communities and the states that participate in the program gain access to more generous Federal disaster assistance and to the flood insurance program. In exchange, participating governments agree to adopt floodplain management ordinances that comply with the minimum standards of the NFIP—which is largely an agreement to site or construct new developments (or substantially rebuilt structures in NFIP special flood hazards area that are damaged by flooding) so they don't experience damage from the FEMA 1% annual risk flood. In addition, FEMA requires that mortgage lenders require that flood insurance be held by mortgage holders within the FEMA floodplain.

Structural Deficiencies in the FEMA program

The first step of the FEMA NFIP is the characterization of floodplain status. However, only communities that are subject to the 1% annual risk flood have a

requirement to establish floodplain management programs—including insurance requirements. There are three principal deficiencies with the FEMA floodplain characterization program: accuracy of characterization, timeliness of characterization, and the exclusion of many floodprone lands from floodplain characterization.

1) Accuracy: Uncertainties exist in characterization of the 1% annual flood magnitude, topography, flow paths, and expected stage (depth of flooding).

Since the minimum FEMA standard calls for floodproofing only to meet the FEMA flood, and if we assume that the uncertainty errors are normally distributed, approximately half the structures built to FEMA minimum standards in a FEMA floodplain will experience damage in a FEMA flood.

In recognition of this, the California Floodplain Management Task Force¹ recommended the adoption of floodproofing requirements that exceed FEMA elevation requirements and the formation of an alluvial fan task force.

2) Timeliness of characterization: Watershed characteristics of urbanizing landscapes change (usually adversely) with time. Topography is often altered in these landscapes. Reassessments of the competence of floodwater management works are also made (or should be made) from time to time. But, in our experience, unless the assessment is undertaken under a FEMA contract, these changes are seldom reflected in FEMA maps.

For example, extensive portions of Reclamation District 784 (Linda, Olivehurst, Arboga, Plumas Lakes) has been under 10 to 15 feet of water twice in the last twenty years. Current Corps of Engineers assessments of the floodwater management works currently conclude that major portions of this area have a 3% annual flood risk. In 1990, the Army Corps of Engineers concluded that the Feather River floodway could not withstand the design flood—at an area that failed in 1997, flooding the Arboga/Plumas Lakes area. In spite of these revelations, neither local governments nor FEMA supported a map revision.

In a partial solution to elements of this problem, the California Floodplain Management Task Force recommended that floodplain maps reflect “build-out” future watershed conditions, and state support of FEMA’s map modernization program within California. The Task Force also recommended funding DWR’s awareness mapping program and GIS flood maps. The Task Force did not have time to develop recommendations on ensuring more timely FEMA vigilance on the

¹ *California Floodplain Management Report*, California Floodplain Management Task Force, December 2002. The report, including its recommendations, was unanimous.

status of floodwater management works that are unable to function to design standards.

3) Exclusion of floodprone lands from the floodplain management programs: Most flood damages in major flood events in the Central Valley during the last two major floods were (and are) not in mapped FEMA floodplains. The huge "Paterno" liability risk to the state general fund is on these floodplains.

The only floodplains that FEMA characterizes as floodprone are those that are judged at (accurately or not) to have more than a 1% annual risk of flooding. All other lands are, for floodplain management purposes and insurance requirements, considered to be equivalent to "high ground" in spite of the fact that they may be subject to (or recently experienced) deep flooding.

Needless to say, the market penetration of the flood insurance program in areas outside of FEMA flood zones is insufficient to ensure the financial capability for flood recovery in these areas.

The consequence of this failure to map is particularly serious for urban areas protected by dam or levee works that may fail or be overwhelmed by floodwaters. The failure to map these floodprone lands has a major effect on planning and financial responsibility decisions for these lands, including decisions that involve widespread urbanization of protected floodplains—even when the possibilities of failure of regional flood control systems may be understood by decisionmakers or the State of California.

This problem with the NFIP has been widely noted, and distinguished panels have made recommendations for change, but these program deficiencies have not been resolved at the national program level of the NFIP.²

² Both the 1993 *Report of the Interagency Floodplain Management Review Committee* and the 1982 National Academy of Science's *A Levee policy for the National Flood Insurance Program* recommended the establishment of a NFIP AL zone to identify and establish floodplain management practices in levee protected floodplains. *Sharing the Challenge: Floodplain Management into the 21st Century*, Report of the Interagency Floodplain Management Review Committee to the Administration Floodplain Management Task Force, Washington DC, June 1994 and the National Research Council, Committee on a Levee Policy for the National Flood Insurance Program, *A Levee Policy for the National Flood Insurance Program*, Washington DC: National Academy Press, 1982. A "National Flood Policy Forum" Symposium was held in September of 2004 at the National Academies [of Science and Engineering] Keck Center in Washington DC on the sufficiency of the 1% annual risk standard. The Event was sponsored by the National Academies Disaster Roundtable and the Association of State Floodplain Managers. Speakers at the September 2005 Floodplain Management Conference who attended the original symposium said that the consensus was that the 1% standard was insufficient to meet important floodplain management challenges the country faced, particularly in some states with deep protected floodplains.

The California Floodplain Management Task Force recognized that this issue would be a significant challenge to work through definitively in the time that it had available. It therefore made two recommendations: 1) Reasonably foreseeable flooding (as opposed to just the FEMA flood) be part of community and state planning decision making, 2) The Task Force be reappointed so that it could grapple with some of the more significant and challenging floodplain management issues. The Task Force was not reappointed, and few of its recommendations have been implemented.

Given the depth of potential floods in the Sacramento Valley and the early stages of urbanization in some of the Sacramento River Flood Control Project-protected floodplains, an activist floodplain management approach is warranted in the areas protected by the Project.

Sacramento Valley local governments have made little or no commitment to comprehensive “minimum” floodplain management programs in protected floodplains.³ This deficiency needs to be confronted more effectively, not just because our moral responsibilities to floodplain residents, but because recent court decisions have put the treasury of the state of California at risk because of local decisions. In addition, permitting agencies may be reluctant to approve future floodwater management projects because of liability concerns.⁴

A Desirable State Program

Task Force discussion would have recognized that the failure of the NFIP to respond to this program deficiency does not prevent the State of California or responsible local communities (particularly the communities in this area that have experienced repeated, large, and deep floods) from implementing NFIP-style floodplain management programs tailored to local, regional, or statewide circumstances.⁵

³ The City of Sacramento does have a Comprehensive Flood Management Plan that features a critical municipal infrastructure protection plan as well as emergency evacuation plans. The plan also establishes City policy of support for a National “AL” zone.

⁴ *Paterno et. al. v. State of California*, Court of Appeal of the State of California, Third Appellate District, 11/26/03. *Arreola et al. v. Monterey County, et. al.*, Court of Appeal of the State of California, Sixth Appellate District., 6/25/02.

⁵ It should also be recognized that, in the absence of a competent federal, state, or regional protected floodplain management program, communities subject to serious flooding have at least the moral obligation to undertake floodplain management activities—including decisions to avoid urbanizing lands where people and developed property cannot safely weather potential flooding.

The basis for such a program is the establishment of an “AL” zone, a special flood hazard area designation for areas that are judged to have less than a 1% annual flood risk, but are protected by floodwater management works whose failure is reasonably foreseeable.⁶

This designation has been proposed at the National level, but there may be compelling reasons why California should work with FEMA to develop its own program, customized to the circumstances in California.

AL Zones

An AL zone would accomplish three goals: providing an institutional structure for identifying protected floodplains, establishing a defined area with insurance requirements, and fostering a floodplain management program structure for these areas. It would also have the practical effect of providing notification to communities and individual residents that they are subject to flooding.

In more detail, an AL zone should accomplish the following:

- Map protected floodplains so that the expected depth and nature of foreseeable flood events are depicted.
- Require the purchase of flood insurance.⁷
- Implement floodplain management programs.

Floodplain management programs must publicize the fact that even “protected” floodplains remain at some risk of flooding, as well as the specifics of expected flooding. This information is necessary if choices about the design and location of communities, structures, and homes in protected floodplains are under consideration—or whether they should be located elsewhere. They should create feasible emergency evacuation & other contingency plans that are understood and can be implemented by residents and local governments. They should avoid citing critical infrastructure in inappropriate areas, or construct it so that it can withstand

⁶ There is a methodology to determine reasonably foreseeable flood events. Standard Project Flood (SPF) estimates are based on a methodology developed by the ACE to establish a reasonable “worst-case” flood-magnitude estimate the purposes of sizing a floodwater-management project for an urbanized area. *ACE Engineering Manual, 1110-2-141, SPF Determination, SPF Methodologies, 1 March 1965*. The California Floodplain Management Report lists this and other methods to establish reasonably foreseeable flood magnitudes. (p. 20)

⁷ Current NFIP programs partially enforce a flood insurance requirement for holders of mortgages. If a flood insurance requirement is to become part of a “State Plan,” which the Paterno Court erroneously believed existed, then some requirements or liability waivers for renters and owners without mortgages need to be developed.

flooding and continue to serve its intended use or be readily restarted.⁸ Facilities that could release significant toxic materials in floodwaters should be sited or designed to minimize toxic releases. Appropriate and competent refugia for evacuees should be required. Finally, some, many, or all structures should be required to withstand potential failure of the floodwater management system.

Bring California Into Compliance with the NFIP

The California Floodplain Management Report noted that FEMA believes that California is out of compliance with the NFIP because elements of California's governmental structure are exempt from having to comply with local NFIP floodplain management requirements.⁹ The penalty for failure to comply is removing California or most of its local communities from the NFIP. Federal assistance in special flood hazard areas and NFIP insurance would then not be available.

The Task Force developed detailed recommendations on how California could comply (drafting and executive order and identifying the actions that the legislature would need to take). These recommendations have not been implemented.

A New State Plan

The Paterno Court erroneously concluded that the State's Sacramento River Flood Control Project "Plan" included a determination that it was safe to build communities behind project levees. While an understandable inference from the actions of local governments, this, of course, was not true. One legitimate response to the Paterno Court would be for the state to actually articulate its plan.

⁸ The 1993 Federal "Report of the Interagency Floodplain Management Review Committee" defined Critical Infrastructure as "structures, facilities, and installations . . . that if rendered unserviceable, would impose significant hardship on the public, or those that if, flooded, would pose a threat to public health, public safety, and or the environment." The Committee noted that "[c]ritical infrastructure could include, on a situation dependent basis, municipal drinking water facilities, wastewater treatment plants, interior drainage pumping stations . . . major airports, hospitals and related medical care facilities, electricity generating plants, and facilities that generate, store, or dispose of hazardous toxic, or radioactive materials." The Committee noted that a National Academy of Sciences panel has made a similar recommendation (National Research Council, Committee on a Levee Policy for the National Flood Insurance Program, *A Levee Policy for the National Flood Insurance Program*, Washington DC: National Academy Press, 1982)

⁹ See recommendations 11 and 33, *California Floodplain Management Report*.

A number of elements could be articulated in such a plan. Here are just a few:

- A description of the "Plan," since none really exists presently.
- AL zones, flood insurance requirements, floodplain management programs
- Creation of an urban levee design standard for "Plan" areas that wish to exceed the design standards of the original plan.
- Clearer assignment of responsibility among floodwater management and land-use decision makers for the consequences of their actions.

Regional Planning

Coordinated planning between agencies with floodwater management responsibilities and agencies with land-use planning responsibilities could result in agricultural land preservation and less urbanization of dangerous floodprone lands.

Greater Attention State to Flood Management Matters

Flood management issues are issues that impact public safety, the resilience of the state's economy, the health of the state's rivers and much of its water supply, as well as important land use decisions. Yet important and even easy to take actions recommended by "blue ribbon" task forces formed by the State have been ignored. The *Comprehensive Study*, a critical state federal effort to improve Central Valley flood management and river restoration efforts has been allowed to die. This is hardly a course for success. Hopefully, the striking images from New Orleans will galvanize California to achieve a better future.

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