

# **The Flood Risk in Sacramento County**

## **Issue**

Is the broad public interest being served by allowing development to continue in Sacramento's high flood risk areas before the flood risk is reduced?

The Grand Jury reviewed the history of flooding in Sacramento County and focused on three items for discussion. Those items are the level of flood protection being sought, temporary cessation of development in the flood plain and flood insurance in at-risk areas.

## **Reason for the Investigation**

Many agencies, local elected officers and other officials responsible for protecting life and property from flooding in Sacramento County have been trying to reduce the flood risk since settlement began in the area. After the Hurricane Katrina flood disaster in New Orleans in October 2005, Sacramento was identified as among the nation's most vulnerable cities to flooding. There is continuing controversy over how to achieve better flood protection.

## **Method of Investigation**

In addition to information obtained from agency websites and printed materials, as well as from the Grand Jury's own observations while on tour in the Natomas area, officials from the following local, state and federal agencies were interviewed:

- Sacramento Area Flood Control Agency (SAFCA)
- United States Bureau of Reclamation
- City of Sacramento
- County of Sacramento
- Reclamation District 1000

## **Background and Facts**

### **History of Flooding in Sacramento County**

The area of Sacramento County that lies near the confluence of the Sacramento and American Rivers has a long history of flooding dating back to before permanent settlement of the area began in the 1840s. In the 160-year interval since permanent settlement of Sacramento began, efforts have been made to reduce the flood threat by building up the level of land near the rivers, building bypasses to divert flood water away from the area, building levees along the river channels and building dams to

control the flood water. A system of weirs and bypasses that allow floodwater from the Sacramento River to safely bypass certain areas was constructed upstream from Sacramento. At high flows, some of the water from the Sacramento River can enter the Yolo Bypass at the Sacramento Weir a few miles north of the city, relieving pressure on the Sacramento levees. The levee systems along the American and Sacramento Rivers in the vicinity of Sacramento were assembled over time, beginning with the early efforts of farmers near the rivers nearly 150 years ago. As the area became urbanized and modern construction methods became available, the levees were built higher and stronger to provide greater protection to the area. Dams on the Sacramento River and its major tributaries above Sacramento were completed between 1948 and 1968 to control floodwaters which added to the protection provided by the levee system. Folsom Dam, upstream from Sacramento on the American River, is credited with saving the city from disastrous flooding in December 1955, even though the dam was only partially completed at the time. Together, the bypasses, levees and dams have prevented catastrophic flooding in Sacramento for over 50 years.

In spite of the flood protection work that has been accomplished, the area has been threatened with catastrophic flooding in recent years such as 1986, 1997 and 2006. SAFCA reports that combined levee breaks in Natomas, the Pocket, and near California State University, Sacramento, could cause the following devastating impacts: 102 square miles would be flooded; 63,800 structures would be flooded; up to 500 people could lose their lives; 150,000 people would be threatened by flooding of six feet or more, with 118,000 facing depths of ten feet or more; Sacramento International Airport would be under 15 feet of water; four major hospitals and 65 schools would be flooded; and damage to property would be \$11.2 billion, including \$9.2 billion to homes. In recognition of these possibilities, and the Katrina flood event in New Orleans in 2005, there has been re-evaluation of the flood risk to the Sacramento area. There is now an increased recognition of the fragility of the levee system and the corresponding risk of catastrophic flooding, especially in the North Natomas area where the levee structures are subject to seepage that may cause failure.

### **The Level of Flood Protection**

Flood risk is generally expressed as a percent chance of occurrence based on historical records. For example, a one percent chance of occurrence means that a flood of that magnitude has a 1 in 100 chance of occurring in any one year. It becomes commonly known as a 100-year flood. Property flood insurance, subsidized by the National Flood Insurance Program (NFIP), which is administered by the Federal Emergency Management Agency (FEMA), is available when an area is certified by the United States Army Corps of Engineers (Corps) to have protection from at least a 100-year flood. However, when the threshold 100-year protection has not been certified, the risk is greater and the insurance cost is much higher. Insurance is still required for homeowners who have federally guaranteed mortgages or mortgages from most other financial institutions.

The Sacramento area has been trying to achieve 100-year protection since the FEMA flood insurance program became available in the 1970s, but only mounted a serious effort after the area was threatened with disastrous flooding in 1986. Local governments and flood control agencies formed SAFCA in 1989 to work with the Corps and the California State Reclamation Board to address the weaknesses in Sacramento's flood control system that were exposed during the record flood of 1986. The Corps's post-flood evaluation showed the flood control system was inadequate to meet the minimum requirements of the 100-year protection of NFIP.

After considerable levee repair and upgrading, much of the Sacramento area was certified with 100-year protection by the mid-1990s. The North Natomas area was certified for 100-year protection in 1998, which made flood insurance available and unleashed rapid urban development in an area that had been farmland. However, the New Orleans flooding disaster in 2005, and high water on the Sacramento and American Rivers in January 2006, led SAFCA to request a more in-depth evaluation of the levees. As a result, the Corps found that the North Natomas area is now below the minimum 100-year level of protection because of seepage and other problems, and that significant levee improvement would be necessary to return the area to that minimum level. SAFCA is actively working toward its stated goal of providing all of the flood plains in the Sacramento area protected by the state/federal levee system with at least a 100-year level of flood protection by 2008, or as quickly as possible, and providing a 200-year level of protection over time, hopefully by 2021.

### **Temporary Cessation of Building**

When critical flood situations exist, such as in the Natomas area, that have the potential of causing the loss of lives and property, government entities at every level may, and have, imposed moratoriums on commercial and residential building in the high risk areas. Land in North Natomas was zoned agricultural until Arco Arena was built in the mid-1980s. Development was restricted by the city in this area from 1990 until 1998 when 100-year flood protection was certified and rapid development began. Accordingly, local government has experience with a de-facto moratorium on building in the flood plain when the flood risk is great.

In a November 11, 2006, letter to the Mayor of Sacramento, the Director of the State Department of Water Resources stated that it would be prudent to consider additional efforts to protect the public by placing limitations on new construction until the minimum 100-year flood protection is achieved. There are moratorium provisions in state law (Gov. C. §65858) that provide the procedural framework applicable when a city or county adopts, as an urgency measure, an interim ordinance based on findings that continued building would constitute a current and immediate threat to the public health, safety or welfare. Such measures require a four-fifths vote for approval, then public notice and hearings within 45 days of approval and, if adopted, the ordinance can only remain in effect for up to two years unless further extended by a four-fifths vote.

### **Flood Insurance**

In June 2006, SAFCA announced that the North Natomas area had less than 100-year protection based on the Corps re-evaluation. It was expected that the Corps would de-certify the area in March 2007, and by November 2007, FEMA was expected to re-map the area. This means that unless the area is re-mapped into either an AR or A99 Special Flood Hazard Zone, or until 100-year protection is achieved, flood insurance rates would likely quadruple. The Corps has issued a letter stating that they cannot stand behind the certification that the levees provide 100-year protection, but FEMA is not now expected to issue a new map until March 2008. In the meantime, subsidized flood insurance remains available to residents of the North Natomas area. The City of Sacramento, representing also Sacramento County, is expected to take the lead in filing for FEMA re-mapping and will probably request a zoning designation of A99 to allow development to continue, or AR which would allow only in-fill development.

As of February 21, 2007, when Sacramento's south area, which includes the Meadowview and Pocket communities, became eligible, subsidized flood insurance was available over nearly all of the area protected by the Sacramento and American River levee system. That also includes the Natomas area that still qualifies under the 100-year flood protection certified by the Corps in 1998, even though the Corps stated in June 2006 that they cannot stand behind the certification. It is well known that Natomas is vulnerable to deep flooding and notices to that effect have been issued by SAFCA and other agencies, yet FEMA estimates issued in December 2006 showed that only about 25% of property owners carry any flood insurance.

Flood insurance in areas certified with 100-year protection is heavily subsidized through a program administered by FEMA. Even though there are limitations on the coverage available, the homeowner pays a small portion of the amount that a private insurer would charge for the same coverage without a subsidy. The Grand Jury believes that if Natomas residents were better informed of the availability of this insurance, homeowners electing coverage would rise substantially above current levels.

## **Findings and Recommendations**

**Finding 1.** SAFCA has proposed increasing protection for the entire Sacramento flood risk area. Its goal is 100-year protection by 2008 and 200-year protection by 2021. Even though these levels of protection are less than what has been achieved at similar flood prone areas in the nation, they seem reasonable and achievable for Sacramento.

**Recommendation 1.** All government agencies, elected officers and residents in flood risk areas should support SAFCA in striving to reach the stated goal of providing 100-year and 200-year flood protection for the Sacramento area by 2008 and 2021, respectively, or sooner.

**Finding 2.** Both the City of Sacramento and the County of Sacramento are allowing building to continue in areas that do not have 100-year flood protection. This is especially true in North Natomas that was found to have less than 100-year protection in 2006. Potential flood depths of greater than 15 feet in that area place immense risk to both lives and property.

**Recommendation 2.** The city and county should curtail all building in the North Natomas area until 100-year flood protection is certified by the Corps. A policy stopping all development immediately in North Natomas, as allowed by state law, is imperative. Extending the policy until 200-year protection is achieved is highly recommended.

## **Response Requirements**

**Penal Code sections 933 and 933.05 require that specific responses to both the findings and recommendations contained in this report be submitted to the Presiding Judge of the Sacramento Superior Court by October 1, 2007, from:**

- **Sacramento Area Flood Control Agency (1)**
- **Sacramento City Council (1, 2)**
- **Sacramento County Board of Supervisors (1, 2)**