

# LEVEE MAINTENANCE – IS ANYBODY WATCHING THE STORE?

## SUMMARY

The 2018-2019 Sacramento County Grand Jury investigated flood protection measures in place to protect the Sacramento region during high water events, due to an unacceptable rating by one of the Local Maintaining Agencies. The investigation focused on 1) levee maintenance and its relationship to flood protection, and 2) whether it is reasonable for the residents of Sacramento County and the City of Sacramento to assume that there are standards, policies and guidance in place to assure that levees will provide the expected protection when needed. The report identifies the roles and responsibilities of various agencies and entities engaged in activities related to flood control and protection in the Sacramento Region. The report discusses how agencies work together to ensure that appropriate standards exist and are met on an ongoing basis. The focus was on existing structures and not the ongoing regional efforts to meet the 200-year flood<sup>a</sup> criteria by 2025. The investigation found that a reasonable level of rigor is applied to maintenance to assure that levees can be expected to provide their designed level of protection.

## BACKGROUND

From its earliest days, the Sacramento region has had a history of flooding. As the region has grown over the years, there has been an increased dependence on dams, canals, levees, and other measures to protect life and property from high-water events. The dependence extends to low-lying areas that would not be safely habitable without flood protection measures. Flood protection infrastructure and measures may be taken for granted since they are innocuous, passive, and relatively benign. However, during high-water events Sacramento County residents are more likely to pay attention to their status.

Levees are only one element of flood protection in the Sacramento area. Pumps are used to move water out of and away from vulnerable flood prone areas. Weirs divert water to open spaces to reduce flows in regular channels. Levees contain streams within their channels.

Various agencies coordinate and monitor Sacramento levees based on flood protection plans designed to minimize and respond to risk from high-water events.

Many levees in the region abutting the Sacramento River were built and are owned by the United States Army Corps of Engineers (USACE), but ongoing maintenance and improvements are the responsibility of other agencies. While other regional levees have been built and owned by state and local agencies, this investigation focuses on the performance of the main channels of the Sacramento River and American River and the potential impacts to the City of Sacramento.

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<sup>a</sup> A “200-year flood” describes the estimated probability of a flood event happening in any given year. A 200-year event has a 0.5 percent chance (or 1-in-200) of occurring in any given year.

## METHODOLOGY

The grand jury investigation was performed using three primary means:

- Publicly available data on various websites: charters, planning documents, budgets, reports and minutes.
- Data provided by agencies engaged in flood protection activities.
- Interviews of personnel active in providing flood protection related activities.

Key reports and public websites reviewed are as follow:

- 2017 and 2018 Inspection and Local Maintaining Agency Report of the Central Valley State-Federal Flood Protection System  
<http://cdec.water.ca.gov/>
- Comprehensive Flood Management Plan – City of Sacramento Department of Utilities  
<https://www.cityofsacramento.org/>
- SAFCA 2018 ULOP Annual Report  
<http://cvfpb.ca.gov/>
- Sacramento Area Flood Control Agency  
<http://www.safca.org/>
- American River Flood Control District  
<https://www.arfcd.org/>
- Reclamation District 1000  
<https://www.rd1000.org/>

## DISCUSSION

There are several agencies and entities engaged in activities related to flood control and protection in the Sacramento Region (See Figure 1). The USACE builds and owns levees and other flood control infrastructure such as dams. USACE operates in part under Public Law 84-99 (US Code Title 33, Chapter 15 - Section 5 of the Flood Control Act of 1941). It also provides the framework for levee improvements and maintenance requirements.

The California Central Valley Flood Protection Board (CVFPB) is the state regulatory agency responsible for ensuring that standards are met for the construction and maintenance of the flood control system. Its mission is to protect life, property, and wildlife habitat in California's Central Valley from the effects of flooding. Inspections, coordinated through the Department of Water Resources (DWR), are used to verify that local agencies are performing their legal and statutory responsibilities pursuant to Water Code § 12642 and § 12657, and that they are meeting their legal obligations under assurance agreements with the State. In some cases, State requirements are more stringent than USACE standards.

The Sacramento Area Flood Control Agency (SAFCA) provides the overarching authority to plan, coordinate funding, and implement improvements. SAFCA is a Joint Powers Authority (JPA)<sup>b</sup> consisting of seven regional agencies including Local Maintaining Agencies (LMAs). Improvement projects can overlap LMA jurisdictions.

SAFCA also coordinates the Urban Level of Flood Protection (ULOP) plan which defines the complete flood protection system for the region. In particular, the ULOP provides the basis and documentation for meeting the 200-year flood protection by 2025 as required by state law and for meeting annual reporting requirements to the CVFPB. By meeting this requirement, development plans in the region that are within flood risk areas are allowed to proceed. This is particularly important for growth and development in the Natomas area of Sacramento.

LMAs have primary authority for both maintenance of levees and flood fighting. Levee maintenance is provided by public levee districts, local government entities, private levee owners, and in some cases the DWR. LMAs are responsible for the ongoing maintenance of levees throughout Sacramento County. There are 15 LMAs within Sacramento County, with most providing protection to mainly agricultural areas in the southern part of the county. Most regional LMAs are special districts formed under the authority of the Local Area Formation Commission (LAFCo). The City of Sacramento Department of Utilities is the acting LMA for a section of levee within the city limits.

### **LMA Roles and Responsibilities**

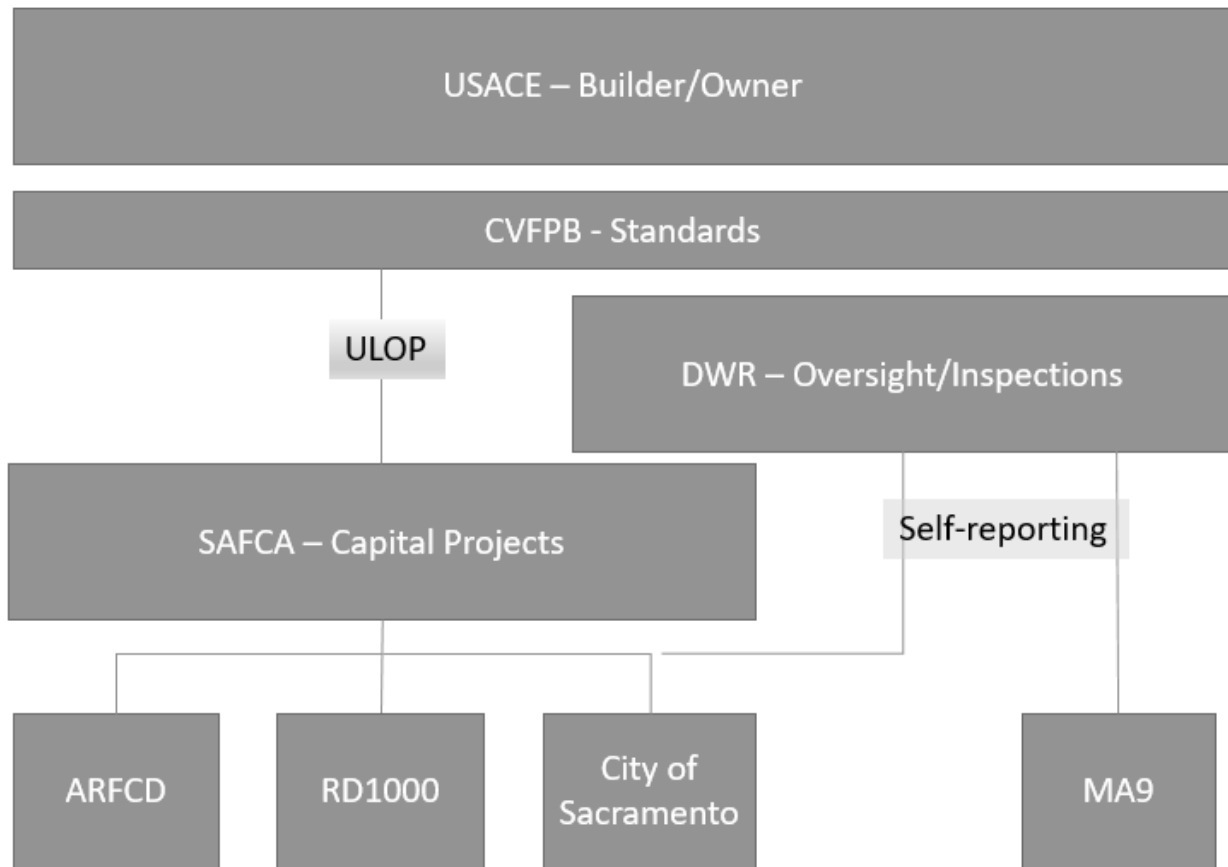
LMA activities include inspections, tree trimming and vegetation control, rodent and animal control, as well as maintenance of access roads. Levees are inspected at least four times each year as well as ongoing inspections for different purposes. The four primary inspections are the basis for the annual DRW report. LMAs conduct inspections in the winter and summer, and DWR completes spring inspections in May, working with the LMAs to assist in planning maintenance activities prior to the flood season. DWR completes annual fall inspections in November, to help ensure adequate performance during the flood season.

The LMAs that have responsibility in the heavier populated areas of Sacramento County were the focus of this investigation. Within this limited area there are four Local Maintaining Agencies: American River Flood Control District (ARFCD), Maintenance Area 9 (MA9), Reclamation District 1000 (RD1000), and the City of Sacramento. Each of the four LMAs is responsible for separate sections of levees along the American and Sacramento rivers as well as other flood control related facilities.

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<sup>b</sup> JPAs are legally created entities under Government Code 6502 that allow two or more public agencies to jointly exercise common powers allowing the means to provide services more efficiently.

Figure 1 Hierarchical Structure:



Each LMA is responsible for the specific sections as follow:

- American River Flood Control District – 34.48 miles of levees primarily along the American River downstream of Nimbus Dam to the confluence of the Sacramento River as well as several local creeks.
- Maintenance Area 9 – 19.35 miles of levees along the Sacramento River downstream of Sutterville Road to the Hood-Courtland area including the Pocket Area of the City of Sacramento.
- Reclamation District 1000 – 41.8 miles of levees along the Sacramento and American Rivers as well as the Natomas East and Cross canals.
- City of Sacramento – 3.6 miles of levee along the Sacramento River adjacent to the railyards south to Sutterville Road including Old Town Sacramento.

### How the Pieces Fit Together

The Grand Jury investigation found a specific example of the challenges facing an LMA navigating the various agencies. Federal, State and local agencies establish regulations and requirements to provide oversight to the flood protection of the region and operate under a reasonably well-defined hierarchy of roles, responsibilities and deference among the agencies. LMAs are responsible for the day-to-day operations, which include preventive maintenance. They are also expected to be the first responders to any issues that may arise during an

emergency. However, LMAs cannot always act autonomously and have to work within the hierarchical framework.

The hierarchical framework of Federal, State and Local agencies provides a system of checks and balances designed to work in the best interests of public safety. LMAs are held accountable to the State through the annual reporting to DWR. Ratings assigned annually to each LMA provide a publicly transparent report as to the conditions of the levees (and other infrastructure) under the individual LMA. While the ratings (Acceptable, Minimally Acceptable and Unacceptable) from the report in and of themselves might convey the message of compliance or concern, they are only a single data point. Supplemental information provided by the LMA regarding planned remediation provides a more complete picture.

The City of Sacramento, in their LMA role, received a rating of Unacceptable in the 2017 annual DRW report which improved to Acceptable in the 2018 Report. The section of the Sacramento River levee for which the City of Sacramento is responsible has an identified erosion area due to previous high-water event damage. The city submitted a plan and funding request to the USACE through the Rehabilitation and Inspection Program (RIP) under PL 84-99. USACE rejected the request as it determined the plan included repairing damage from a previous event.

After denial under the PL 84-99 process, the City developed a plan with DWR to make the repair. While the permanent repair is not expected to start until the summer of 2020, it doesn't mean that the City is putting people and property at risk. As a matter of course, the City has an emergency plan to address the known deficiency. This includes monitoring the specific site during a high-water event and a plan to backfill with material should the damage area further erode. The plan also includes maintaining a dedicated, in stock inventory of fill material so as to assure that it is available should it be necessary to implement the emergency plan and not be delayed by any procurement issues.

## **FINDINGS**

- F1. There is a well-defined set of checks and balances within the hierarchy of Federal, State and local agencies to assure that the levees in the region will provide their expected level of protection during high water events.
- F2. LMAs act timely and responsibly to coordinate maintenance within the hierarchy of authority and assure proactive preventive measures are in place until deficiencies can be corrected through permanent measures, such as the Urban Level of Flood Protection plans.

## REQUIRED RESPONSES

Pursuant to Penal Code sections 933 and 933.05, the grand jury requests responses from the following agency within 60 days:

- City of Sacramento  
Howard Chan, City Manager  
915 I Street  
Sacramento, California 95814

Mail or hand-deliver a hard copy response to:

David De Alba, Presiding Judge Sacramento County Superior Court  
720 9th Street, Dept. 47  
Sacramento, CA 95814

In addition, please email response to:

Becky Castaneda, Grand Jury Coordinator at [castanb@saccourt.com](mailto:castanb@saccourt.com)

Reports issued by the Grand Jury do not identify individuals interviewed. Penal Code section 929 requires that reports of the Grand Jury not contain the name of any person or facts leading to the identity of any person who provides information to the Grand Jury.
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## **ABBREVIATIONS AND ACRONYMS**

CVFPB	Central Valley Flood Protection Board
DWR	Department of Water Resources
JPA	Joint Powers Authority
LMA	Local Maintaining Agency
SAFCA	Sacramento Area Flood Control Agency
ULOP	Urban Level of Flood Protection
USACE	U.S. Army Corps of Engineers

## **DISCLAIMER**

This investigation is not, nor is it intended to be, a professional assessment of any agency's practices and procedures. A professional assessment is beyond the scope of a civil grand jury. It is only intended to inform the public of the practices and oversight of Local Maintaining Agencies.