

## **INFORMATION ITEM**

### **Presentation on Levee Hazards Science Workshop Report**

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**Summary:** Dr. Brian Atwater, Delta Independent Science Board (ISB) member, will brief the Council on the ISB's Delta Levee Science workshop and recently completed workshop report, "Earthquakes and High Water as Levee Hazards in the Sacramento-San Joaquin Delta."

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#### **Background**

One of the Delta ISB's responsibilities is to "provide oversight of the scientific research, monitoring, and assessment programs that support adaptive management of the Delta through periodic reviews" (Water Code section 85280(a)(3)). To this end, the Delta ISB convened a public workshop about Delta levee science on July 14, 2016 and wrote a workshop report, "Earthquakes and High Water as Levee Hazards in the Sacramento-San Joaquin Delta" (Attachment 1). An abstract for each presentation was included in the workshop program (Attachment 2) which, along with all other workshop materials is, available on the [Delta ISB July 2016 meeting page](#).

#### **The Workshop**

The workshop focused on Delta levee hazards from earthquakes and high water. Risk was not considered at the workshop because it is a broader concept that takes into account natural hazards to levees, and also the economic, environmental, and public-safety consequences of levee failures. The full-day workshop had two sessions—one on earthquakes, and the other on high water. Each session contained a set of introductory talks, informal discussions at posters, and a panel discussion in which session speakers and poster presenters could answer questions from the audience, ISB members or discussants.

The morning earthquake session received greater attention, with more than 60 participants in the audience, three talks, eight posters, and a panel discussion. The afternoon session about high water allowed for greater participation by a smaller audience. The workshop brought together different parts of a diverse community of Delta levee specialists, as well as interested members of the public that have been minimally represented in larger venues like the biennial Bay-Delta Science Conference or annual Interagency Ecological Program Workshop.

#### **Today's Briefing**

This is the ISB's first review to be presented as a report on a meeting that focused on one small fraction of the elements of Delta levee risk. In addition to describing the workshop, the report gives the Delta ISB's understanding of highlights from presentations and discussions, and offers perspectives on Delta levee research.

Delta ISB member Dr. Brian Atwater, who served as principle author, will discuss the paper with the Council including research needs and opportunities identified in the report. These include:

- Expand observations of Delta ground motions
- Improve estimates of geologically recent displacements on faults beneath the Delta
- Expand the level of identification of liquefiable materials and mechanisms beneath levees
- Continue airborne measurements of land-level change
- Update maps of contracting area of remaining peat
- Improve documentation of past levee failures

### **Relevance to Delta Levees Investment Strategy and Future Efforts**

The uncertainties associated with more robust hazard assessments may find their way into the 2017 Science Action Agenda for the Delta to inform future updates to decisions affecting levee investments. It will also inform revisions to the list of levee-related science and information needs as the Delta Levees Investment Strategy is incorporated into the Delta Plan's risk management chapter.

### **List of Attachments**

Attachment 1: *Earthquakes and High Water as Levee Hazards in the Sacramento-San Joaquin Delta*

Attachment 2: Delta Levee Science Workshop Program

### **Contact**

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