

Alluvial Fan Task Force



California Department of Water Resources Project

Minutes Plenary Meeting #5
Friday, April 11, 2008
K. Hahn Hall of Administration
500 W. Temple St.
Los Angeles, CA 90012

Members Present: Los Angeles County Supervisor Michael Antonovich, Riverside County Supervisor Marion Ashley, San Bernardino County Supervisor Paul Biane, Danielle Borish, Dale Casey, Georgia Celehar, Mike Fox, Mark Grey, Rick Iger, Chuck Lackey (for Jon McQuiston), John McCarthy, Norman Meek, Brian Moore (for Ali Sahabi), Mark Pisano, Lee Reader, Tom Scott, Christine Sloan, Chris Stone, Joan Taylor, Marty Teal, Sergio Vargas, Ralph Wagner, Rebecca Wagoner, Dusty Williams, Duane Young

State and Federal Representatives Present: Rebecca Wagoner, Ray Lenaburg, Tammy Conforti, Mark Stuart, Mike Anderson, Ricardo Pineda, Stephan Lorenzato, Maria Lorenzo-Lee

Technical Consultants Present: Susan Lien Longville, Susan Carpenter, Suzie Earp, Massoud Rezakhani, Doug Hamilton, Bill Short, Tom Spittler, Jeremy Lancaster, Lisa Pierce, Boykin Witherspoon, Gigi Hanna

Members Absent: Kern County Supervisor Jon McQuiston, San Diego County Supervisor Bill Horn, Tom O'Keefe, Stephanie Pincetl, Tom Davis, Eric Shamp, Sara Agahi, Dave Mlynarski, Ali Sahabi, Scott Steinmetz, Vana Olson, Ray Torres, Paul Quill, Kathleen Webb

Technical Consultants Absent: Cameron Barrows, Lynn Merrill, Bo Cutter

State and Federal Representatives Absent: Chris Adams, Steve Cowdin, Scott Dawson, Dave Gutierrez, Greg Krzys, Pete Sorenson

Others Present: Mekbib Degaga, Stuart McKibbin, Steven Hernandez, David Garcia, Terry Rogers, Robert Mead, Paul Novak, Sean Carlson, Mark Wills

Meeting called to order: at 9:30 a.m. by AFTF Facilitator, Susan Carpenter.

Welcome:

- Meeting Host, Los Angeles County Supervisor Michael Antonovich
- Mark Stuart, AFTF chair, discussed DWR's latest Water Report

AFTF Business: Minutes of the AFTF Plenary Meeting 4, March 14, were reviewed and approved by AFTF Task Force members.

Meeting Theme: *Theme: Outline for Model Ordinance and Design Guidelines*

Panels/Presentations: (All PowerPoint presentations are available to participants on the password-protected AFTF website at <http://www.alluvialfantaskforce.info>)

1. "Climate Change and Alluvial Fans in California"

PowerPoint by Mike Anderson, State Climatologist.

Anderson discussed climate factors that could have an effect on alluvial fan flooding, breaking down his topic into three parts:

1. **Climate Change Impacts and California.** Western temperatures are rising, creating phenomenal variability in precipitation levels. With higher temperatures, total precipitation may change. There is likely to be a higher snow line, with less snow pack, and earlier snow-melt run-off. This, in turn will cause changes in the timing and the amount of river flows, meaning flood peaks could be higher, with greater sediment movement, leading to vegetation changes in watersheds. Longer dry seasons will affect fire conditions. And all of this will change water resources system operations. While precipitation variability already is quite large, it may increase even further with climate change.
2. **Alluvial fan flooding elements.** Both water and sediment are important elements in alluvial fan flooding, as are upland conditions and source areas; these will change with climate change. As climate gets warmer, there may be thunderstorm intensity in frontal systems, meaning a different dynamic to storms. In short, the past cannot be used to determine future fan flooding behavior. The best answers may be come in knowing the watershed.
3. **Storm Characteristics.** California's big winter storms have a strong warm advection, with strong south-to-southwest winds, high freezing levels and moderate instability. Convective storms, more likely with climate change, contain moisture, heat and are instable. The result is localized heavy downpours with duration and location dependent on conditions.

Anderson concluded that climate change can affect alluvial fan flooding directly, via flooding, and indirectly, via changes in sediment and vegetation. Risk assessments should include climate phenomena monitoring and forecasting for periods of higher risk.

Answering questions from group participants, Anderson stated that the concept of the 1 percent annual chance flood will change because precipitation will be very dynamic, which will, in turn, require change in policy development; there will be a need to move from scenarios to risk-based projections. The concept of a 1 percent flood will be dynamic requiring either regular updates with changing results for people in the floodplain or moving to a different design descriptor which will require lots of discussion and effort on the part of a lot of people including federal and state agencies.

Mark Pisano raised a question raised about whether climate change is being adequately depicted in hydrology forecasting models and what potential policy issues this might raise. Anderson responded that the FMA is holding a workshop at its annual meeting to address this issue. Ray Lenaburg, of FEMA, said that USGS and FEMA are updating regression equations to get a better handle on the variability issue. Marty Teal, from the Floodplain Managers Association said that FMA had updated some regression equations in a recent CalTrans report.

Chris Stone, from LA County Public Works, pointed out that policy makers would need to consider how a burned watershed would create a 100-year event. Mike Fox, from San Bernardino County Flood Control, said there must be consideration of the potential of watershed burn. There isn't enough data, he said, and climate change is only one level of uncertainty.

DWR's July 2006 report entitled **Progress on Incorporating Climate Change into Planning and Management of California's Water Resources** was mentioned and that an update is due in 2009. The 2006 report is available at <http://www.water.ca.gov/climatechange/docs/DWRClimateChangeJuly06.pdf#pagemode=bookmarks&page=1>

Brian Moore, of SE Corporation, concurred that there was not enough information available and that a model ordinance would put into place requirements for mitigation of something that is not fully understood. He suggested a better strategy would be adaptive management—mitigating to what is known, but add to the body of knowledge for future decision making.

Anderson suggested that a good resource is the Western Regional Climate Center, www.wrcc.dri.edu, which has a California Climate Tracker feature on its Projects page.

Rebecca Wagoner, of California OES, said that the state is collecting data after each fire to further the body of knowledge.

2. Clarifying Differences in Member Survey Responses

Group Discussion facilitated by Susan Carpenter.

AFTF staff took each of the 39 items in the Member Survey handed out at Meeting 4 and tallied the answers, tracking where there were differences among the 47 members who

answered the survey. Only five of the questions had 80 percent or less agreement among all respondents. Carpenter asked where the disagreements lay.

- Regarding disagreement on point #15 (*The Model Ordinance should include strategies for developing evacuation plans in the event of single disasters (flood, fire, and earthquake) and multiple events especially for cities adopting only county Hazard Mitigation Plans*), Rick Iger (Kern Co. Water Agency) said that the issue should be addresses in the Design Guidelines rather than in a Model Ordinance.
- Regarding disagreement on point #6 (*The Alluvial Fan Model Ordinance should require that foreseeable flood and environmental risks are identified, but the decision of “what is acceptable risk” is left to the local jurisdictions.*), Norman Meek (Cal State San Bernardino) cautioned that local jurisdictions will have differences of opinion on what is acceptable risk. Ricardo Pineda (DWR) questioned the meaning of “foreseeable flood”; Robert Mead (OES) questioned whether the AFTF had the authority to usurp local authority on what is acceptable; Rebecca Wagoner (OES) said the definition of a flood changes and will continue to change and that there will need to be agreement on the standard used for definition; Joan Taylor (Coachella Land Conservancy) asked how the state and federal agencies would protect themselves from irresponsible local decisions. There was discussion of how FEMA's NFIP addresses liability. Doug Hamilton (Exponent) noted that the state has not provided much information beyond historic data and funds after the fact. Mark Stuart (DWR) asked what ability there is to map foreseeable environmental risk, because it is qualitative rather than quantitative, which prompted the question of the definition of environmental risk. Susan Longville said that there is a body of knowledge about habitat, about corridor movements, and those could be used to define the environmental risks. Ray Lenaburg (FEMA) said he envisions the federal government providing standards, but doubted that they would be mandated. Mark Wills (Riverside Co. Flood Control) said the group needs to be clear on the potential risk assessments, and asked how to establish rules now for a situation that is only going to worsen. Mike Fox (San Bernardino Co. Flood Control) suggested that the FEMA flood maps offer a bare minimum of guidance, but anything further should be left to the local jurisdictions.
- Regarding disagreement on point #7 (*The Model Ordinance should not interfere with local jurisdictions, but be provided as an informational package for their updates to General Plans, Multi Species or Habitat Management Plans or Local Hazard Mitigation Plans.*), Rebecca Wagoner (OES) said “informational packet” is not a strong enough description; Tom Spitler (CGS) said that the AFTF is convened precisely to intervene with local jurisdictions and suggested a change in language. Ray Lenaburg (FEMA) said that the AFTF’s final product needs to be good enough that the local jurisdictions will want to adopt. Robert Mead (OES) said it would be helpful to local jurisdiction to know what the state and federal

jurisdictions feel is acceptable, to have some assurances that, in adopting a proposed ordinance, they would meet minimum state and federal thresholds.

- Regarding disagreement on point #17 (*The Model Ordinance should include a methodology for identifying and assessing financial incentives for developments that maximize safety and enhance risk management.*) Tom Spittler (CGS) said that the category is so broad that it could take too long to identify all the incentives and that spending time to assess where to find funding was a valid concern, but beyond the scope of the task force. Tom Scott (Riverside Land Conservancy) said that it is improper for an ordinance to find incentives. Rebecca Wagoner (OES) said that, at some point, there will need to be identification of the incentives and disincentives. Joan Taylor (Coachella Land Conservancy) said the ordinance should have language about what is suggested and why.

Carpenter said the group's comments would be used to further refine the design guidelines and model ordinance.

3. Structure for Model Ordinance and Design Guidelines

Susan Lien Longville, AFTF Coordinator

Longville said the task force was at the point of getting to the available information and using them to produce better ideas. She said that Boykin Witherspoon and graduate students from Cal Poly Pomona had examined county ordinances, general plans, hazard mitigation plans and municipal codes to determine the existing standards, in order to give local jurisdictions a package of tools with direction on how to use them within their existing frameworks.

She said the task force would be split into four subcommittees to focus on specific topics: Flood Management (Doug Hamilton, chair); Residual Risk (Steve Cowdin, chair); Design and Construction (Boykin Witherspoon, chair); and Watershed (Stefan Lorenzato, chair).

Task Force members will choose the committees they wish to participate on, and will be able to access pertinent information in their sub-group folders on the web site.

4. Los Angeles County Department of Public Works Alluvial Fan Presentation

Christopher Stone, Water Resources Division

Stone discussed Los Angeles County's flood history and urbanization and how that has led to the flood control policies currently in place.

Floods prior to 1884 were allowed to spread out over the fan, percolate, and recharge ground water uninhibited. But urbanization later led to more runoff as buildings and streets created more impervious surfaces. When farms replaced open rangeland check dams and other local flood protection were added in the late 1800s and early 1900s. As word of the climate in Los Angeles spread and attracted immigrants, few were aware of

the history of flooding in the area, but a flood in 1914 alerted them to the danger. The result was formation of the Los Angeles County Flood Control District (FCD) in 1915.

Early flood control measures included construction of 13 dams, construction of hundreds of check dams and use of brush, rock, and wooden pilings to reinforce levees. Later, the county built more dams, more than 100 debris basins, 350 miles of flood control channel and two thousand miles of storm drains helped prevent extensive flood damage over the decades. Heavy rainfall occurred in 1972-73, 1977-78, 1979-80, 1982-83, 1992-93, 1995-96, 1997-98, and although there was localized flooding, including debris flows from canyons, the flood and debris control facilities prevented billions of dollars in damages. Flood control measures include: debris retaining inlets, stabilizers, debris basins and dams, and spreading grounds.

Debris basins are cleaned out every 5-6 years, with \$1.5 million per year spent for sediment removal (Sediment removal from dams averages 1 million cubic yards per year).

Within the last decade, the environmental sensitivities have shifted priorities from large engineered works to preserving the environment and working within natural constraints. Permitting and environmental documents have become more stringent and focus on capital improvements and infrastructure has shifted to maintenance of existing systems. Concerns for the future include continued growth—the county population is expected to grow by 2 million between 2010 and 2020, with new development mostly in Santa Clara and Antelope Valleys, on areas subject to alluvial fan conditions. Environmental concerns and politics will require more permits, review, and mitigation for projects built to control debris and flooding; construction of dams and large debris basins will be difficult and focus on protection and utilization of natural drainage will require agencies to evaluate new ways to protect citizens from debris and flood damage.

For the remainder of the meeting the group split into the Subcommittee groups on Model Ordinance and Design Guidelines. The summaries of these discussions will be posted on the AFTF Web site.

Meeting Adjourned: 3 p.m.

Next Meeting:

Friday, May 16, 2008

Hosted by Coachella Valley Water District

At the Riverside County Workforce Development Center in Conference Rooms 1-3

1151 Spruce St.

Riverside, CA 92507

Minutes respectfully submitted to the AFTF members by Gigi Hanna, AFTF Administrative Coordinator. Please contact ghanna@csusb.edu if corrections are necessary.